# A Handbook for Youth Programs in Science Centers and Museums

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INTRODUCTION

HISTORY

In the final decade of the twentieth century, in partnership with the DeWitt Wallace – Reader’s Digest Fund (now the Wallace Foundation), the Association of Science-Technology Centers launched a nation-wide initiative, YouthALIVE! (Youth Achievement through Learning, Involvement, Volunteering and Employment) to strengthen the capacity of science centers and museums to engage 10 to 17 year old youths. YouthALIVE! provided financial and technical assistance and professional development for science centers, natural history museums, technology centers, children’s museums, aquariums, botanical gardens and zoos in developing, implementing and sustaining dynamic programs for and with adolescents.

Designed to extend access to long-term museum opportunities to adolescents, YouthALIVE! concentrated on engaging youth from underserved communities, particularly children of color and youth from low income communities. Although YouthALIVE! programs were developed well before the current afterschool movement, most of these programs effectively engaged high school students after school, on weekends and during the summer months. A majority are still operational and have adapted in name, size and/or activities to meet contemporary needs and resources.

For the initiative’s first eight years, youth program staff from 72 YouthALIVE! science centers and museums participated in the YouthALIVE! Professional Development Network which met twice yearly, to share challenges, learn from each other and youth development specialists and to chronicle successful strategies.

Midway through the initiative, YouthALIVE! in the Workplace, a work-skills curriculum based on recommendations from the US Department of Labor’s SCANS Report, was implemented. YouthALIVE! program leaders were encouraged to adapt these materials for use in training sessions with other staff and teens. The development and field testing of this curriculum for 14 to 17 year olds in museum-based programs was supported by the Hitachi Foundation.

What difference can these programs make?

Lynn Baum, George Hein and Marilyn Solvay, in analyzing essays by teens participating in YouthALIVE! programs, found that:

- Teens do learn in these programs
- These museum experiences can be life changing
- Teens value highly the programs’ relationships and mentoring
- Teens appreciate the opportunities to experience what others take for granted - being in the museum, meeting new people, trips, etc
- Teens are applying their museum program experiences as they prepare for young adulthood

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1 In Their Own Words: Teen Voices in Museums
The Journal of Museum Education

ADOLESCENCE: GROWING UP IN MUSEUMS ; Volume 25, Number 3, Fall 2000
Issue Editor: Wendy Pollock, Association of Science-Technology Centers
ABOUT THIS HANDBOOK

Throughout the initiative, a myriad of local and national youth development resources, professionals, organizations, research and literature, helped the museum field develop a better understanding of adolescents, their needs and their communities. This handbook’s core ideas on designing programs that support healthy youth development in museums largely grew out of YouthALIVE! experiences. They were culled from network meeting notes, annual and final program reports, interviews with staff and teens, teen essays and evaluation reports.

This handbook is a compilation of information, suggestions and tools for museum staff wishing to start or enhance a youth program or a museum-based afterschool program for teens. However, in light of the growing awareness of the value of high quality afterschool programs for younger children, perhaps some of the handbook’s lessons, gleaned from successful museum-based YouthALIVE! programs, are also relevant to other organizations and agencies seeking to design developmentally appropriate afterschool programs that engage high school students.

A work in progress, this collection represents the input of former ASTC staff and countless youth program staff from science centers and museums throughout the United States, including those who were members of the YouthALIVE! National Network for Professional Development between 1992 and 2000.

As the YouthALIVE! programs grew, YouthALIVE! program staff at ASTC, Laura Benso, Anna Perez Pelaez, Tanya Tucker, Cassandra Johnson and DeAnna Beane, documented the program development experiences of YouthALIVE! museums. Thus the earliest drafts of this handbook were born and changed as the programs evolved. Subsequent drafts by Anna Perez-Pelaez formed the basis of text about program models and operational issues in the Program Design Module. The Fundraising Module was developed by Peggy Ruth Cole (from the first cadre of YouthALIVE! Network members), based on her successful development work while at the New York Hall of Science. Editing of that module was done by Stacy Shelnut-Hendrick (also in the first cadre of YouthALIVE! Network members while with the Brooklyn Children’s Museum). The workskills manual, YouthALIVE! in the Workplace, was developed by Valerie Egzibher, after serving as the YouthALIVE! project director for Discovery Place in Charlotte, NC.

Recently all this earlier work was brought to completion by a team comprised of several members of the Youth Programs Forum on ASTC Connect. This team refined and expanded existing drafts into modules and developed additional modules for topics not previously addressed. Finally, because of the editing assistance of ASTC staff member Christina Jones, the handbook modules and appendices are now online and available on ASTC Connect.

Fortunately, the museum field can now benefit from a wider range of youth-related programs, policies, practices and resources. The handbook, as well as ASTC’s Youth Programs Special Interest Group and the online Youth Programs Forum, are enriched by some of the more recently developed, high quality museum-based youth programs. Their continued involvement is essential to the growth of this community of practice; and the Youth Programs Forum on ASTC Connect can serve as a virtual community for discussing, modifying and expanding the handbook as needed.

The museum field is evolving, so must our programs and tools!
APPRECIATIONS

This project and its completion in electronic format would not have been possible without the necessary financial resources and professional expertise. The Association of Science-Technology Centers is genuinely appreciative of all who contributed to this effort, particularly those whose contributions are described below.

- A decade-long investment by the DeWitt Wallace-Reader’s Digest Fund (now the Wallace Foundation) brought YouthALIVE! programs to more than 70 science centers and museums and planning support to an additional 110 institutions in this field. That generous investment resulted not only in many institutionalized youth programs serving youth from underserved communities, but also in the knowledge base for this handbook.

- Additionally, support from The Hitachi Foundation enabled ASTC to develop, YouthALIVE! in the Workplace, a curriculum tool which adds focus and consistency to work-based learning programs in museums. This support moved the YouthALIVE! initiative from an abstract notion of workskills to a concept of workskills as a concrete set of behaviors to be incorporated in program design and operations.

- A number of colleagues in the museum field contributed to the handbook in significant ways. The following Youth Programs Forum members volunteered to write or revise modules or segments of modules and/or contribute sample materials:

  Cheronda Frazier (New Jersey Academy for Aquatic Sciences)
  Sarah Huschle (Pacific Science Center)
  Julie Johnson (Science Museum of Minnesota)
  Nina Nolan (formerly with Museum of Science and Industry)
  Angela Wenger (New Jersey Academy for Aquatic Sciences)

- Others participated in telephone interviews, reviewed drafts of modules or contributed sample materials to the appendices:

  Jamie Alonzo (Yale Peabody Museum of Natural History)
  Lynn Baum (Museum of Science)
  Jamie Bell (formerly with Exploratorium)
  Jessica Castiglioni (Saint Louis Science Center)
  Teresa Gonzalez-White (Lowry Park Zoo)
  Lisa Hoover (Chabot Observatory and Science Center)
  Kristen Kloth (Cincinnati Museum Center)
  Amy Robinson (Miami Museum of Science)
  Ryan Sullivan (Museum of Discovery and Science)
  JuWanda Thurmond (Children’s Museum of Pittsburgh)
  Susan Tittlebaum (formerly with Louisiana Arts and Science Center)
  Galyn Walker (formerly with Lied Discovery Children’s Museum)
  Aimee White (Lowry Park Zoo)

- DeAnna Banks Beane, who served as director of the YouthALIVE! initiative, assembled and worked with the above named team, contributed to the development of the modules, and was responsible for the production of this electronic handbook.

This work is dedicated to the young people from whom we have learned so much.
Thank You!
Module 1: CRITICAL BACKGROUND BRIEFS

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ORGANIZATIONAL MISSION

When the mission of a science center or museum supports programs working with youth, it can be a very effective place not only for nurturing young people's interest in science, but also for promoting positive youth development and employment training, particularly for young people with few opportunities. Familiarity with the organization's mission statement is a prerequisite for all program planning. The following are examples of mission statements that not only address science, but also a commitment to engaging all ages, communities and/or diverse audiences. Clearly, any of these audience groups can include youth. Mission-driven commitments open the way for a conversation about an alignment between the organization and the programming designed to integrate youth from underserved and/or diverse communities into the organization's science-rich learning environment.

Mission Statements from Association of Science-Technology Centers (ASTC) Members:

- "Carnegie Science Center is dedicated to inspiring learning and curiosity by connecting science and technology with everyday life. The Science Center provides experiences that are entertaining, interactive, first hand, accessible, relevant and understandable. The Science Center strives to identify and meet the needs of the community in its full diversity." [www.carnegiesciencecenter.org](http://www.carnegiesciencecenter.org)

- "Pacific Science Center is a not-for-profit science foundation serving one million people a year in every county of Washington state, inspiring a lifelong interest in science, math and technology by engaging diverse communities through interactive and innovative exhibits and programs." [www.pacsci.org](http://www.pacsci.org)

- The New Jersey Academy for Aquatic Sciences promotes the understanding, appreciation and protection of aquatic life and habitats through research, education and youth development programs. [www.njaas.org](http://www.njaas.org)

- The mission of the Brooklyn Children's Museum is to engage children in educational experiences through innovation and excellence in exhibitions, programs, and use of its collection. The Museum encourages children to develop an understanding of and respect for themselves, others and the world around them by exploring cultures, the arts, science and the environment. [www.bchldmus.org](http://www.bchldmus.org)

- “The mission of the Science Museum of Minnesota is to invite learners of all ages to experience their changing world through science." [www.smm.org](http://www.smm.org)

- Miami Science Museum: “We inspire people of all ages and cultures to enjoy science and technology, in order to better understand ourselves and our world.” [www.miamisci.org](http://www.miamisci.org)

- “The mission of the Museum of Science, Boston is to stimulate interest in and further understanding of science and technology and their importance for individuals and for society. To accomplish this educational mission, the staff, volunteers, oversees, and trustees of the Museum are dedicated to attracting the broadest possible spectrum of participants and involving them in activities, exhibits, and programs which will: encourage curiosity, questioning and exploration; inform and educate; enhance a sense
of personal achievement in learning; respect individual interests, backgrounds and abilities; and promote life-long learning and informed and active citizenship.”

www.mos.org

**ASTC’s Mission**
The Association of Science-Technology Centers (ASTC) is an organization of science centers and museums dedicated to furthering the public understanding of science among increasingly diverse audiences. ASTC encourages excellence and innovation in informal science learning by serving and linking its members worldwide and advancing their common goals. ASTC provides professional development for the science center field, promotes best practices, supports effective communication, strengthens the position of science centers within the community at large, and fosters the creation of successful partnerships and collaborations.
NEW AUDIENCES

ADOLESCENTS DURING OUT-OF-SCHOOL HOURS

Who am I? What are my talents? Where do I belong? Who needs me? An effective youth program can help young people in their quest to discover answers to these usually unspoken questions.

Perhaps it is customary to think of school groups, families and adults, but not adolescents or teens, as traditional audiences for science centers and museums. Developing a museum-based program for the out-of-school hours for this new audience, requires us to quickly learn as much as possible about adolescents and their development. Adolescence is, as most adults know, a time of change on the physical, hormonal, intellectual and social levels. However, few know, other than researchers, how these changes occur, how the rate of change may vary among adolescents, and what conditions help or hinder healthy transitions during this period.

"Understanding adolescent development and the factors contributing to the healthy development of all young people is critical to the design and implementation of community programs for youth."

Community Programs to Promote Youth Development, page 5
www.nap.edu/catalog/10022.html

When ASTC began their youth programming initiative in 1996, the developmental needs of young adolescents, as summarized by The Center for Early Adolescence at the University of North Carolina at Chapel Hill, was a helpful, easy to understand tool. Today there are many “user-friendly” resources available on adolescent development; a few are listed at the end of this module.

The Committee on Community-Level Programs for Youth, appointed by the National Research Council and Institute of Medicine, released its comprehensive report, Community Programs to Promote Youth Development, in 2002. The report includes rich discussions of research on the personal and social assets that promote positive and healthy development in adolescents, as well as discussions of the qualities of settings or environments that promote positive youth development. The National Academy of Sciences publication is available for purchase or for chapter review at www.nap.edu/catalog/10022.html.

The Committee on Community-Level Programs for Youth grouped the assets and summarized the groupings with practical descriptors to identify the personal and social qualities that help young people successfully move from childhood through adolescence into adulthood.
PERSONAL AND SOCIAL ASSETS THAT FACILITATE POSITIVE YOUTH DEVELOPMENT

Community Programs to Promote Youth Development - Chapter 3

- **Physical Development**: Good health habits and good health risk management skills
- **Intellectual Development**: Knowledge of life skills; vocational skills; school success; critical thinking; reasoning, and decision-making skills; in-depth knowledge of more than one culture; skills to navigate through multiple cultural contexts
- **Psychological and Emotional Development**: Good mental health; emotional self-regulation skills; coping and conflict resolution skills; mastery motivation; confidence in personal efficacy; willing to plan for the future; sense of responsibility for self; realistic optimism; coherent and positive personal and social identity; culturally sensitive values; sense of larger purpose in life; strong moral character; commitment to good use of time
- **Social Development**: Perceived good relationships and trust with parents, peers and some other adults (connectedness); sense of being connected and values by larger social networks; attachments to prosocial institutions like schools, church, non-school youth programs, etc.; ability to navigate in multiple cultural contexts; commitment to civic engagement

The quality of environments that support young people in developing these personal and social assets are grouped and described as:

FEATURES OF POSITIVE DEVELOPMENTAL SETTINGS

Community Programs to Promote Youth Development - Chapter 4

- **Physical and Psychological Safety**: Safe, healthy facilities; safe peer group interaction
- **Appropriate Structure**: Clear and consistent rules and expectations; clear boundaries; continuity and predictability; age appropriate monitoring
- **Supportive Relationships**: Warmth, closeness, connectedness, caring, support, guidance, good communication, secure attachment; responsiveness
- **Opportunities to Belong**: Opportunities for meaningful inclusion regardless of gender, ethnicity, sexual orientation or disability; social engagement and integration; opportunities for socio-cultural identity formation; support for cultural and bicultural competence
- **Positive Social Norms**: Rules of behavior, expectations; procedures, values and morals; obligations for service
- **Support for Efficacy and Mattering**: Youth-based empowerment practices that support autonomy; making a real difference in the community; being taken seriously; being given responsibility and meaningful challenges; program practices that focus on improvement rather that remaining at current performance levels
- **Opportunities for Skill Building**: Opportunities to learn physical, intellectual, psychological, emotional and social skills; exposure to intentional learning experiences; opportunities to learn cultural literacies, media literacy, communication skills, and thinking skills; preparation for adult employment; opportunities to develop social and cultural capital

Module 2: Program Design describes program elements that reflect not only recognition of the assets that adolescents need for their positive or healthy development, but also how a museum program can be shaped to encompasses many of the above environmental features that nurture development of those assets essential to the transition from adolescence to productive adulthood.
Resources on Youth Development

American Youth Policy Forum (AYPF)
http://www.aypf.org
This nonprofit, nonpartisan professional development organization based in Washington, DC, provides learning opportunities for policymakers, practitioners and researchers working on youth and education issues at the national, state and local levels. The website includes many online research-based publications.

Forum for Youth Investment
http://www.forumforyouthinvestment.org/
The Forum for Youth Investment is a nonprofit, nonpartisan organization dedicated to helping communities and the nation prepare young people for college, life and work by the time they reach age 21. The Forum recognized that this goal requires that young people have the support, opportunities and services needed to prosper and contribute where they live, learn, work, play and make a difference. To this end, The Forum provides organizations, government agencies, adult leaders and youth with the information, technical assistance, training, network support and partnership opportunities needed to increase the quality and quantity of youth investment and youth involvement. The Forum’s online and print youth development resources publications are timely, research-based and practical.

Community Programs to Promote Youth Development
www.nap.edu/catalog/10022.html
This 2002 report was a 2-year project in which the Committee on Community-Level Programs for Youth evaluated and integrated the current science of adolescent health and development with research findings related to design, implementation and evaluation of community programs for youth. For this report, communities could include neighborhoods, blocks, towns, cities and those communities that are defined by values, family connections, or shared interests, but could not include geography. A set of four core concepts formed the foundation of this comprehensive report:

- Some youth are doing very well
- Some youth are taking dangerous risks and doing poorly
- All youth need a variety of experiences to develop to their full potential
- Some young people have unmet needs and are particularly at risk of participating in problem behaviors (e.g., dropping out of school and participating in violent behavior)
  - These include young people who often live in high-risk neighborhoods, live in low-income families, experience repeated racial, religious and ethnic discrimination and have a substantial amount of unsupervised time during out-of-school hours
  - These also include young people with disabilities, from troubled family situations and with special emotional support needs

The report is available for online purchase and per chapter reading for free.

Search Institute
http://www.search-institute.org/
Search Institute is an independent nonprofit organization whose mission is to provide leadership, knowledge and resources to promote healthy children, youth and communities. To accomplish this mission, the institute generates and communicates new knowledge as well as bringing together community, state and national leaders. Since 1989, Search Institute’s exploration of the developmental needs of youth has been the framework of developmental assets, the positive experiences and personal qualities that young people need to grow up healthy, caring and responsible.
http://www.search-institute.org/content/40-developmental-assets-adolescents-ages-12-18

This Institute of Museum and Library Services (IMLS) study, is part of IMLS's initiative, Museums and Libraries Engaging America’s Youth. It examined Institute-funded programs for youth aged 9-19 and surveyed nearly 400 museum and library programs on their goals, strategies, impact and outcomes.

The study, released in December 2007, found that museums and libraries bring unique assets to youth development. These assets include dedicated, knowledgeable staff; authentic objects, artifacts and information resources; opportunities for personalized, hands-on learning; support for cognitive and social development; and experiences to help parents, families and caregivers make learning fun and rewarding. According to the study, the most effective youth programs:

- Include long-term, trusting and supportive relationships between and among youth, staff, and other adults
- Partner with community-based organizations and other cultural institutions
- Substantively involve youth in program design and decision making
- Regularly assess or evaluate to improve the program and strengthen other youth development efforts

DIVERSITY

*Diversity here can include socio-economic background, culture, race, ethnicity, religion, gender, sexual orientation, physical/cognitive development and physical ability.*

Diversity and the Museum

Our perceptions of the world and its people are shaped by the norms, language, customs and values of the family, institutions and communities in which we grew up. Since each of us views other people, places and situations through our own cultural lens, it is quite likely that the cultural lens of the museum and its staff will differ from that of young people from underserved communities. Historically, the families of most of these young people have not been regular museum visitors. Language, colloquialisms, celebrations, heroes/heroines, music, worship practices, travel experiences and leisure activities can be quite different. How can we develop museum-based youth programs that allow everybody to work together with the aid of an evolving common lens?
For some staff, the idea of any group of teens spending out-of-school hours in the museum exhibit halls may be unnerving. We can surmise that even the traditional teen volunteer programs (for those with family memberships) were not initially welcomed by all staff. Over time, however, as museums began to experience the positive benefits of the energy and loyalty that teens can bring, most moved beyond those initial uncertainties.

Nevertheless, still unfathomable to many staff members may be the idea of recruiting teens who differ from the usual museum visitors, members and staff, in ethnic, cultural, racial or socio-economic background. Yet these youth are the audience for our long-term engagement youth programs. These are the young people with least access to opportunities that nurture positive social, economic and intellectual development.

With any group of adolescents, we must be prepared to work with differences in the rate of physical, intellectual, social and intellectual changes; but inclusion of an underserved teen audience will require more than highlighting aspects of adolescent development for staff.

Inclusion—intentionally creating and maintaining a museum environment that is welcoming to and accepting of underserved populations—is a highly important, but often neglected, task. Ideally, sustained attention to issues of diversity, including differences, similarities, expectations and biases, as well as institutional/program policies and practices should be integrated into a museum’s professional development program for all staff. The ASTC Equity and Diversity Toolkit, found online in the ASTC Resource Center, offers basic information and comprehensive collections of annotated resources for science centers and museums seeking tools for developing institutional and personal competence with diversity. This Toolkit is undergoing revisions and will be repost when complete.

http://www.astc.org/resource/equity/index.htm

However, the following section is particularly relevant to youth program staff seeking to enhance their personal competence with diversity. These resources are drawn from several sources, including the ASTC Equity and Diversity Toolkit, experiences of the YouthALIVE! Professional Development Network members and the ASTC Conference Fellowship Program.

**Respect and Connectedness: Essential Ingredients for Inclusion**

Feeling respected and connected are essential to the sustained engagement of teens in any program. When the museum has not been accustomed to having teens of color or teens from low-income communities “in-house” regularly, youth program staff should not be surprised to find unconscious negative attitudes and subtle negative actions by some staff and visitors. It is important, however, to know that these negative interactions can generate feelings of isolation and/or defensiveness among the teens, and youth program staff should be expect to intervene between the young people and with museum staff.

These are young people who are already somewhat isolated because they come from communities that are underserved by mainstream society’s institutions. Much of this handbook’s Program Design section is intended to guide the development of an infrastructure that nurture teens’ sense of connectedness – to the museum, to each other, to staff, to their communities and to museum audiences.
Staff members committed to a more inclusive museum environment recognize that, if there is to be a “leveled playing field” for the young people in their program, they (the staff) have a major role to play organizing training, experiences, contacts, supports and recognition that help these young people feel that they are a valued part of the museum’s in-house community. They design their programs knowing that these young people may require additional experiences and support, and that the program will need allies and advocates among the general staff. Experiences of others in the museum field tell us that the cultivation of allies can be accomplished through one-on-one conversations, special invitations, intervention by senior staff and in some cases, well-planned diversity training.

Museum staff members, particularly those working effectively with youth programs, have employed a variety of strategies to help develop their own personal diversity competence. Through cross cultural discussions, films and readings, workshops, conferences, partnerships with community-based organizations, field trips into communities, networking with colleagues in other museums and, of course, informal conversations with the teens and their parents, many are more easily able to value and respect the differences in others. They are also more able to identify and build on the values and ideas that we all have in common. This ongoing professional development has helped them become more aware of the impact that their behavior can have on others, particularly on the teens. They have a better understanding of communication style differences and are more aware of the ways in which their communication style may affect others whose backgrounds may differ from theirs.

Achieving diversity competency is an ongoing process. Populations shift, communities change, neglected societal inequities are revealed, laws are revised, etc., but the constant need for diversity competent staff members and their continued effort to progress from being unaware to valuing and respecting the differences of others.

The ASTC Equity and Diversity Toolkit reminds us that staff with personal core competencies:

- Act professionally toward others at work and in the community who do not share their values or beliefs
- Acknowledge the dynamics of privilege, power, discrimination and personal experience in relation to others
- Understand characteristics of diverse populations, without resorting to stereotyping
- Treat colleagues and community members fairly, respectfully and equitably
- Challenge discriminatory actions or speech that create a hostile work or learning environment because of one’s diversity
- Continuously expand cultural knowledge and engage in activities that increase understanding of cross-cultural values and systems
- Recognize that their style of communication and conflict resolution may inhibit or enhance interaction with others who are different
- Use effective means to foster trust between persons and groups

**Diversity and the Young People**

Finally, since this handbook focuses on work-based learning programs for teens, a word about helping young people develop the interpersonal skills essential to succeeding in the program, in the museum and in an increasingly diverse general environment. Although the participants may all live in the same community or neighboring communities, they may go
to different schools. At a minimum, they are likely to represent racial, ethnic, educational, geographic, linguistic and socio-economic diversity. The museum program may be the very first time they have met one another.

Consequently, in planning programs for and with teens, opportunities to work on the following diversity competencies selected from the above list for adult staff are vital. Program components should include activities, discussions and feedback that foster interpersonal skills that enable teens to:

- Act professionally toward others at work and in the community who do not share their values or beliefs
- Treat colleagues and community members fairly, respectfully and equitably
- Continuously expand cultural knowledge and engage in activities that increase understanding of cross-cultural values and systems
- Recognize that their style of communication and conflict resolution may inhibit or enhance interaction with others who are different
- Use effective means to foster trust between persons and groups

**DIVERSITY RESOURCES**

*ASTC’s Equity and Diversity Toolkit*
http://www.astc.org/resource/equity/index.htm
The annotated resources in this toolkit were compiled to provide ASTC members with access to a variety of diversity-related tools in the areas of: leadership support, assessment, communication, professional development, career pipeline and implementation roles and responsibilities. This Toolkit is undergoing revisions and will be repost when complete.

*Diversity Resource Center*
http://www.diversityresources.com
This organization offers professional training and resources for establishing functionality and efficiency in the diverse and multicultural workplace.

*National Association for Multicultural Education (NAME)*
http://www.nameorg.org
NAME’s main objective is to give educators support and knowledge for working with multiethnic students. The NAME website includes an extensive resource center of online articles.

*Tolerance.org*
This organization is well known as a resource for people interested in dismantling bigotry and valuing diversity within oneself, at home, at school, at work or within the community. The website offers guidebooks for all ages, resources, downloadable public service announcements and games for young children. “101 tools for Tolerance...” offers simple ideas for promoting diversity and has been used by museum staff.

*Youth Service California*
http://www.vscal.org
The Diversity in Service Learning Inventory, produced by Youth Service California is available for purchase through the publications page on the website’s resource center. A
second relevant resource, The Diversity in Youth Service Programs Tool Kit, is designed to support youth service programs in becoming more aware and knowledgeable about diversity issues within their programs, schools, organizations and community partnerships. Developed by Youth Service California and respected diversity trainers Bettina Mok and Dave Nakashima, the kit includes best practices, assessment and action planning tools, annotated resources and a framework for training and discussion. For information on the toolkit Contact: Phone: 510-302-0550 or by Email: info@yscal.org.

Note: For the purposes of this Tool Kit, the term diversity refers, but is not limited, to differences between people and groups in terms of their ethnicity, age, gender, cultural practices, sexual orientation, physical and learning abilities, workplace hierarchy, spiritual beliefs, socio-economic status, educational background, geographic location, work experience and language.

COMMUNITY PARTNERS

Unless there is a history of collaborating with the community, museums and science centers, by their very nature, may have little access to, and no practical knowledge of underserved communities and the young people residing there. A community-based organization can serve as a critical link between the museum or science center and the residents of an underserved community. Module 2: Program Design: Part 2: Meeting Mission and Need discusses collaboration with community-based, youth-serving organizations for the needs assessment and program planning phases.

Museums have used a variety of routes to locate the most appropriate and willing partner for a new youth program. Some municipalities have a local government agency, usually a division of youth affairs or a youth council, that is aware of the most stable youth-serving organizations serving specific communities. Local funders like The United Way maintain records on youth-serving organizations and encourage the possibility of expanded program options for one or more of these organizations. Additionally, it is usually not difficult to find the local Boys and Girls Clubs, the Girls Scouts, the YMCA, the YWCA, Girls Inc, community centers, recreation departments and other social service organizations with afterschool programs, including those operated by churches and other houses of worship.

However, in addition to assistance with planning, recruitment and evaluation, community-based organizations can serve other roles vital to the young people’s success. By working with these organizations, “outsiders” can be introduced to the customs, values and strengths of local underserved communities. These organizations are more likely to be linked to other local resources that can assist when teens face challenges that exceed the expertise of the museum’s youth program staff. Museum-based youth programs have not only recruited teens through community partners, but have also supported those teens in introducing science into the afterschool programs of those community organizations.

From collective experience of YouthALIVE! programs, we learned that community collaborations:

- Are crucial in helping a program meet teen needs
- Begin with a conversation; Face-to-face interaction is important
- Must center around a common need and be mutually beneficial
- Require open minds and flexibility
• Require time and effort to develop trust
• Require mutual respect
• Depend on a willingness to learn from and be open to other cultures
• Can provide access to community leaders
• Evolve and change
• Provide critical insight into the real needs of the community
• Can foster advocates and ambassadors in the underserved communities
• Can contribute to the diversity of museum audiences and staff
• Can enhance museum’s credibility in the community

Summarized from YouthALIVE! Program Profiles

COMMUNITY PARTNERSHIPS RESOURCE

"Developing Partnerships for Service-Learning: Starting Points for Community-Based Organizations (Expanded)"
http://www.servicelearning.org/instant_info/fact_sheets/cb_facts/developing_partnerships/
This online fact sheet, disseminated by Learn and Serve, America’s National Service Learning Clearinghouse, was developed for community-based organizations seeking partners for service learning projects. However, it also contains very practical insights that would be helpful to museums as well. Topics include: What Makes Partnerships Work? How Do You Shape a Partnership? What Kinds of Problems Face Partners and How Can They Be Dealt With? What Kinds of Partnerships Are Most Effective? And, How Do We Get Started?
STAFFING FOR YOUTH PROGRAMS

Whether a youth program will be staffed by members of the museum’s education, outreach or visitor services departments; or by someone hired from outside the museum, our more recent experiences with museums confirm the responses that teens several decades ago gave when asked about the qualities they considered important for program leaders. Below are some of their answers, paraphrased, followed by our own observations. Youth Program staff should be:

- Independent: someone who is genuine with students because they are secure in themselves
- Flexible: someone who is willing not to be in control all the time and can be friends with teens and advisors simultaneously
- Generous: Someone who is willing to give extra time to teens
- Enthusiastic and have a good sense of humor
- Good listeners: not someone who pretends to have all the answers
- Reliable: someone who is always there and on time
- Motivated: someone who is willing to go the extra mile to help teens reach their goals
- Trusting: someone who gives teens the benefit of the doubt and has a genuine interest in everybody
- Good leader: someone who can direct students into positive action and give information about alternatives

The young people’s responses not only reflect more recent research findings, but confirm our experiences in science museum youth programs. We have found that adolescents need adult leaders who:

- Feel comfortable around teens
- Are not intimidated by science
- Care about the young people and their lives
- Believe in the potential that each young person brings
- Are flexible enough to be willing to learn from young people
- Are respectful of young people and their parents
- Expect respect from the young people
- Hold high expectations and are committed to helping young people meet them
- Are willing to serve as a role model and mentor
- Have knowledge, skills and behaviors that young people will want to acquire
- Are team players with teens and with other staff
- Are willing to cultivate allies and advocates for the program
- Can initiate and maintain healthy relationships with organizations serving the young people’s communities
- Are enthusiastic about the museum or science center as a good environment for youth development and youth employment training

Although it is unlikely that any one person is able to embody all of these qualities all of the time, it is helpful to at least be aware of the qualities which contribute to a stable, supportive environment in which adolescents can safely acquire the knowledge, skills, responsibilities and confidence needed for transitioning into productive young adulthood.
Does youth program staff need a background in the sciences? Although this is an important consideration for science centers and science museums, there is no one answer that fits all situations. The ideal candidate would have a college degree in one of the sciences or in science education, and would demonstrate the skills and passion for working with underserved youth, in informal learning environments. In some science museums new youth programs were led by a science educator who hired someone with youth development experience to coordinate the program and work closely with the teens. In other programs, a youth development specialist led the program, with support from some of the museum’s scientists and science educators. This arrangement can be frustrating when science specialists are too busy or when museum policy requires the youth program to use its limited funds to pay for time members of another department spend working with the teens.

Assess the museum’s human resources to determine what kind of small team can be assembled to support the youth program, regardless of if the plan is to hire one outside person. Internal staff expressing interest could be invited to share in some aspects of the planning, and there could be an agreement on how the costs might be shared, if necessary.

“Where do we look for people with these qualities?” First, there are key considerations related to the program itself. Financial resources will be a major determining factor in the size of the program, the number of young people served and the number and roles of program staff needed. Since smaller youth programs have been found to be more effective, plan for an initial staff of two, with at least one being full time. Staff turnover is an unfortunate reality that can be somewhat offset by having at least two staff involved.

Now knowing that the program might need a staff of two, the next step would be to develop position descriptions, beginning with the full time position. The second description can be developed later with the full time person participating in the process. The position can be posted internally and existing staff who might be interested and who fit the criteria should be invited to apply.

A number of science centers and museums have used the launch of a new program, as an opportunity to increase staff diversity. Many have seen this as particularly fitting when the program is structured to increase the audience diversity. In the case of recruiting diverse staff for a youth program, the museum must be intentional in getting the announcement out into various communities. Local ethnic media, youth serving community–based organizations, the local Urban League, churches, social/professional organizations, local school and even city government agencies could help get the word out. Organizations that contributed to the program planning process may have a vested interest in the beginning program and may be particularly helpful in the search for the right staff.

No matter who the staff is, the program will benefit from ongoing professional development and support. A growing number of colleges and universities now offer certificate programs in Youth Work, and these may become resources for recruiting youth program staff. With the help of university certification programs or local professional development programs for youth workers, professionals trained in the sciences are able to complement their science knowledge with an enhanced understanding of youth and their developmental needs.
RESOURCES

Academy for Education (AED)
http://nti.aed.org/  
AED’s National Training Institute for Community Youth Work (NTI) has organized the BEST (Building Exemplary Systems for Training Youth Workers) Network. Cities in the BEST network offer youth development training and other professional development opportunities to better equip youth program staff to serve young people from a developmental approach. Participants in the youth development trainings come from all types of youth-serving settings including school-based after-school programs, residential juvenile justice facilities, parks & recreation centers, faith-based programs, independent out-of-school time programs and many others. There are 32 communities currently offering youth development training for their youth workers.

Association of Science-Technology Centers (ASTC)
ASTC resources that can support professional development of youth program staff include:
- ISEN – ASTC - L, the online listserv for informal science educators  
  http://www.astc.org/profdev/listserv.htm
- Science Center Basics, an online introductory course to working in science centers  
  http://www.astc.org/astc_connect/login/index.php
- ASTC Dimensions, a bimonthly news journal  
  http://www.astc.org/pubs/dimensions.htm
- ASTC RAPS, weekend seminars and workshops hosted by ASTC members  
  http://www.astc.org/profdev/raps/index.htm
- ASTC’s Annual Conference  
  http://www.astc.org/conference/index.htm

American Museum of Natural History (AMNH)
http://www.amnh.org  
AMNH developed Seminars on Science, its online teacher professional development program, in order to connect educators across the United States and around the world to cutting-edge research and to provide them with powerful classroom resources. The program consists of eight online graduate courses in the life, Earth, and physical sciences. Online courses rich with imagery, video, interactive simulations and vibrant discussion connect learners to the Museum’s scientists, laboratories, expeditions and specimens. Courses are co-taught by Courses are co-taught by an experienced educator and a Museum scientist.

University of Wisconsin-Milwaukee School of Continuing Education
sce@uwm.edu or call 1-800-222-3623  
The Youth Work Learning Center is a partnership involving the Wisconsin Association of Child and Youth Care Professionals, the University of Wisconsin-Milwaukee School of Continuing Education and dozens of community organizations. The Youth Work Certificate is the first interdisciplinary program for the study of the principles of youth work in the United States. The program is available to students in Social Work, Educational Policy and Community Education, Exceptional Education and Educational Studies. It is ideal for student who wants to learn more about adolescence and working with youth in a variety of settings.
Module 2: PROGRAM DESIGN

Part A: Models

OVERVIEW ___________________________________________________________ 2
PROGRAM TYPES, FORMATS AND ACTIVITIES ___________________________ 3
HANDS-ON EDUCATIONAL ENRICHMENT PROGRAMS ______________________ 4
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  EXPLAINER PROGRAMS ___________________________________________ 6
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PROGRAM MODELS: ADDITIONAL RESOURCES ____________________________ 11
OVERVIEW

Proven Program Models in Science Centers and Museums
Variations of Hands-on Educational Enrichment and Work-Based Learning, two broad categories of museum-based youth programs identified in an early evaluation of the YouthALIVE! Initiative (http://www.astc.org/resource/youth/index.htm) can be observed in numerous science centers and museums today. An overview of these general program types is a good way to begin research in program design. The discussions following the summarizing chart, Program Types, Formats and Activities provide more details and links to specific programs that illustrate the program type described.

Although this handbook focuses primarily on work-based learning programs, because of the heightened interest in afterschool programs that extend and enhance learning, this section begins with an introduction to museum-based educational enrichment for younger adolescents. A visit to the following websites can provide helpful planning frameworks for anyone starting up an afterschool program.

- Afterschool Alliance: www.afterschoolalliance.org
- AfterSchool.gov: Connects providers to federal resources, www.afterschool.gov
- Promising Practices in Afterschool: www.afterschool.org
- National Institute for Out-of-School Time: www.niost.org
- Coalition for Science Afterschool: http://www.scienceafterschool.org/
- Concepts to Classroom: A website containing online workshops of which one is on afterschool programming, http://www.thirteen.org/edonline/concept2class/index.html
## PROGRAM TYPES, FORMATS AND ACTIVITIES

<table>
<thead>
<tr>
<th>Program Types</th>
<th>Minimum Age Range</th>
<th>Format of Core Program</th>
<th>Examples of Activities in Core Program</th>
<th>Examples of Possible Outcomes</th>
</tr>
</thead>
</table>
| **Hands-On Educational Enrichment:** | 10-13 (most common) | • Clubs  
• Camps  
• Classes                                           | • Science Activities  
• Art Activities  
• Field Trips  
• Projects  
• Exhibit Production                                      | • Heightened Motivation  
• Increased Interest in Learning                              |
| 14-17 (less common)                |                   | • Clubs  
• Classes  
• Workshops  
• One-on-One Mentoring by Staff Professionals           | • Scientific Investigations and Research  
• Field and Lab Work Projects  
• Exhibit Design and Construction                          |                                             |
| **Work-Based Learning:**           | 14-17 (most common) | • Explainers                                                | • Orientation and Training  
• Interpreting Exhibits  
• Assisting Visitors & Staff  
• Conducting Demonstrations                                | • Understanding of Specific Concepts  
• Development of Inquiry Skills  
• Career awareness                                           |
| 16-18                              |                   | (Extensive experience in enrichment or explainer programs is usually a prerequisite for these formats) | • Assisting in Science Center Classes  
• Working in Science Center Store  
• Assisting with Exhibits Maintenance  
• Assisting in Setting up Exhibits  
• Front End Evaluation of Exhibits                        | • Job Skills  
• Career Development  
• Extensive Knowledge of the Science Center                |
HANDS-ON EDUCATIONAL ENRICHMENT PROGRAMS

Hands-On Educational Enrichment Programs generally take the form of after-school programs, camps and clubs. Through structured programs offering activity-based educational enrichment, younger adolescents (10 to 13 years old) can take advantage of the resources available in the science center or museum, without the traditional requirement of an accompanying adult. On a developmental level, these types of programs allow younger teens to focus on building a foundation for academic achievement and social skills. Although camps traditionally run during the summer months, meeting with youth only in the summer is not enough to sustain a relationship, maintain an interest in science or to develop the positive academic and social skills that can be life altering. These young people need year-round, out-of-school activities that offer exposure to a variety of engaging activities, projects and experiences that will build and maintain learning momentum. A club format suggests that the participants have a significant role in planning certain aspects of the activities, even if the focus is science.

Examples:

- Brooklyn Children’s Museum:
- Children’s Museum of Pittsburgh:
- Museum of Science Boston, Computer Clubhouse:
  [http://www.computerclubhouse.org/index.htm](http://www.computerclubhouse.org/index.htm)

Many community-based organizations (CBOs) that work closely with underserved populations, have been interested in programmatic enhancements for their afterschool programs and have partnered with science centers/museums. Frequently, during the program’s start-up years, participants for science centers’ youth programs are recruited from these CBOs. In some cases the CBO partner schedules sessions in which the teens and science center staff bring hands-on science activities to elementary school age children who participate in the CBO’s afterschool and summer programs.

Examples:

- Chabot Space & Science Center, Galaxy Explorers program
- New Jersey Academy for Aquatic Sciences, C.A.U.S.E. program
  [http://www.njaaas.org/Community/CAUSE.html](http://www.njaaas.org/Community/CAUSE.html)
- Carnegie Science Center (Pittsburgh), Science in Your Neighborhood program

Recent publications have focused on the challenges and importance of engaging and retaining older youth in enrichment activities. Special attention is made to the decline of participation that occurs as kids near the end of middle-school. Enrichment-only programs for these youth, 14-18, do exist and contain many of the same elements as the programs for younger youth. One important difference may be that teens have more involvement in the selection of topics to be pursued, or another may be the that the academic rigor in these programs not only extend what young people have access to in their schools but also enable them to succeed in the in-school environment in different ways. Check the Resources section for articles of interest.
Examples:
- Yale Peabody Museum, EVOLUTIONS program
  http://www.peabody.yale.edu/education/afterschool.html
- Academy of Natural Sciences, WINS program
  http://www.ansp.org/education/special_programs/wins.php

**Advantages of Enrichment Programs**

<table>
<thead>
<tr>
<th>Science Center’s Point-of-View</th>
<th>Young Person’s Point-of-View</th>
</tr>
</thead>
<tbody>
<tr>
<td>These types of programs can:</td>
<td>Young teens:</td>
</tr>
<tr>
<td>• Increase the science center’s visibility and credibility in schools and the community</td>
<td>• Have fun while learning science skills and concepts that they’ll be able to transfer to other experiences</td>
</tr>
<tr>
<td>• Help science center staff develop skills in working closely with underserved children from their communities</td>
<td>• Develop confidence in themselves as learners</td>
</tr>
<tr>
<td>• Broaden the science center’s audience and, eventually, support base</td>
<td>• Enhance their social skills through activities that foster cooperation, understanding, and appreciating others</td>
</tr>
<tr>
<td>• Inform science center’s exhibit and program development for this audience</td>
<td>Older teens:</td>
</tr>
<tr>
<td></td>
<td>• Can serve as role models and mentors</td>
</tr>
<tr>
<td></td>
<td>• Gain experience by assisting staff in planning for and teaching younger peers</td>
</tr>
</tbody>
</table>

The staff to youth ratio varies depending on age. In general, look to have a 1-to-15 ratio for programs with youth ages 14 and up and a 1-to-10 ratio for programs with ages 10-13.
WORK-BASED LEARNING PROGRAMS

Research tells us that adolescence is a time when young people are trying to figure out where they fit in the world. Who needs them? What special talent can they offer to the world? At the science center or museum, with sufficient training and support, they can be engaged in meaningful and authentic work. They will begin to understand that their museum needs and wants them. While learning to be effective exhibit explainers, demonstrators, teaching assistants and outreach workers, teens are becoming more science literate and are contributing themselves to the experiences that their institutions offer the public. Through carefully designed job-training components of these programs, young people in these programs are developing transferable workplace skills, as well as science knowledge. With help, they are ready to think about their future learning and work goals.

Many youth programs are composites of four program types and formats which include:
1) Explainer
2) Demonstrator
3) Internship, Apprenticeship & Mentor
4) Cross-age Teaching
Each is described below.

EXPLAINER PROGRAMS

Examples of Explainer Programs:

- Exploratorium, Explainer Program
  http://www.exploratorium.edu/programs/explainer/program_info.html
- New York Hall of Science
  http://www.nyscience.org/join_getinvolved/www.nyscience.org/SCL

Explainers enrich visitors’ experiences by encouraging interaction with the exhibit. They help visitors extend their learning experience by explaining the concept of an exhibit or model, and facilitating engagement with the exhibit. Explainers enrich visitors’ experiences by encouraging interaction with the exhibit. They may ask probing questions to facilitate personal inquiry or provide other assistance. By engaging in their own informal learning--ongoing work with specific exhibits, additional reading and consulting with specialists--some Explainers become experts on certain topics.

These programs are work-intensive, but appealing to teens, science centers, and many visitors. Training, staff supervision and support are critical for this type of youth program which lends itself to weekend and summer employment. (It’s more difficult to maintain a successful Explainer program after school since explaining is no fun for teens when the science center has few visitors. However, these young people can be valuable resources for science centers with on-site afterschool programs for younger children.) To prevent boredom, - especially for new Explainers - programs often rotate the Explainers among the exhibits. A minimum age of 14 is advised for Explainers, even for volunteers. Younger teens require more vigilant and consistent supervision and shorter work shifts.

Don’t be fooled by what may seem like a simplistic youth program model. In order for youth to be successful, substantial content training and modeling by staff of what a ‘good explainer’ looks like is key. As further detailed Module 2: Part D: Core Content-Curriculum, training in communication skills is also very important. Learning to engage visitors in dialogue, understanding how people use exhibits, handling visitors’ questions, etc., are all
part of a knowledge base that these young people will need. In addition, the training program for Explainers should culminate in a series of job shadowing with experienced Explainers before going solo. A manager of the Explainer Program at the Exploratorium in San Francisco once broke ‘explaining’ down into levels:

**Level 1: Being There:** Simply being present in an exhibit section says to visitors that there are explainers on staff who are available for help and to answer questions.

**Level 2: Modeling:** Demonstrating how the exhibits can be used and played with shows visitors, in a non-pedantic way, how they might also interact with the exhibits.

**Level 3: Facilitation:** Respectfully watching and listening to visitors can provide entry points for explainers to begin conversations and occasionally show visitors which buttons to push.

**Level 4: Explaining:** Approaching visitors who are interacting with exhibits that explainers are well-versed in and excited about provides explainers with opportunities to try out what they have learned and practice interacting with a variety of people.

**Suggested Staff to Youth Ratio:** 1 staff per 15 youth

<table>
<thead>
<tr>
<th>Advantages of Explainer Programs</th>
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<tbody>
<tr>
<td><strong>Science Center’s Point-of-View</strong></td>
</tr>
<tr>
<td>Explainers:</td>
</tr>
<tr>
<td>• Enhance and add vitality to the visitor experience, especially for children and families</td>
</tr>
<tr>
<td>• Make a statement about the science center’s commitment to the community</td>
</tr>
<tr>
<td>• Observer and identify broken exhibits and assist with facility maintenance</td>
</tr>
<tr>
<td>• Help prevent abuse of the exhibits by visitors</td>
</tr>
<tr>
<td>• Provide much-needed services to the science center at a very reasonable rate of pay</td>
</tr>
<tr>
<td>• Diversify the science center’s staff</td>
</tr>
</tbody>
</table>
DEMONSTRATOR PROGRAMS

Examples of Demonstrator Programs

- New York Hall of Science, Career Ladder program http://www.nyscience.org/nyhs-pressroom/pr-programspotlight/pr-explainer.html
- Roger Williams Park Zoo, Zoo Crew program http://www.rogerwilliamsparkzoo.org/get_involved/zoocrew.cfm

Demonstrators can provide an interactive link to a particular exhibit by following a scripted piece that can be delivered theater-style or with improvisation using carts with materials packed in a moveable display or demos that fit into lab coat, vest pocket or backpack.

Young people usually require individual coaching on their performance and a dependable, patient adult to turn to when problems arise. With training most discover the role of good questioning skills in engaging the audience and maintaining their interest. Scripts are often only used initially; some programs find that scripts become repetitive and the teens end up sounding uninspired. As with the Explainers, varying the activities maintains the enthusiasm of the youth. Young people who are encouraged to be creative in planning and evaluating their demos, are less likely to become bored. Once a teen has developed confidence with both the content matter and interacting with the public, he/she may be given the flexibility and guidance to personalize their demo. Even after a teen has gained the confidence to go solo—an accessible adult is still recommended. Despite their seemingly sophisticated demeanor, teenagers sometimes still need support when you least expect it.

Some programs are structured such that teens who have been in the program for a period of time and who have demonstrated skill proficiency are able to develop new demonstration programs for visitors. This is something you might think about as you plan your program.

Suggested staff to youth ratio: Minimum of 1 staff per 10 youth.

<table>
<thead>
<tr>
<th>Advantages of Demonstrator Programs</th>
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<tbody>
<tr>
<td><strong>Science Center’s Point-of-View</strong></td>
</tr>
<tr>
<td>Demonstrators:</td>
</tr>
<tr>
<td>• Make the visitors’ science center visit more entertaining and engaging</td>
</tr>
<tr>
<td>• Use additional objects to link the concept explained in the exhibit to examples or applications of the concept</td>
</tr>
<tr>
<td>• Can increase revenue to the science center if demonstrations can be packaged for sale in the science center store or marketed as a public program</td>
</tr>
<tr>
<td>• Can vitalize the science center’s image</td>
</tr>
</tbody>
</table>
Example of Intern, Apprentice, and Mentorship Programs

- Henry Ford Museum, Youth Mentorship Program
  http://www.thehenryford.org/education/youthmentorship.aspx
- Academy of Natural Sciences, WINS program
  http://www.ansp.org/education/special_programs/wins.php
- Philadelphia Zoo, Junior Zoo Apprentice Program
  http://www2.philadelphiazoo.org/getdoc/16b68a6d-0aef-4728-bb39-82d9d82221df/Interns.htm

Internships and related program types support young people by developing the knowledge and skills required for work in science center/museum departments or offices, including exhibit development, education, gift shop or administration, rather than the museum floor. Since tasks depend on the department or office where the young person is assigned, the common experience that makes this type of program cohesive is the general focus on work skills development within the context of a very specific system: the science center or museum. In science centers and museums that have expanded their youth programs to include more intense work opportunities, teens who have demonstrated readiness and interest can apply for apprenticeships or internships. A major advantage of internships as part of a structured youth program is the support that the interns continue to receive from the core youth development program, while transitioning into the museum’s mainstream workforce. The training for this type of employment is highly individualized and is usually conducted by the teen’s supervisor in the specific department where the teen is assigned. The youth program leader usually recruits mentors in other departments to work with teens, but also serves as a confidante and mentor (for both the teens and the department supervisors), coordinator and source of support. The supervisors/mentors in the participating departments provide teens—and their youth program leader—with regular feedback and performance assessments. It is equally important that supervisors and mentors of teens receive training that includes understanding the unique needs of teens and cross-cultural sensitivity.

Suggested staff to youth ratio: Approximately 1 staff per 2 or 3 youth

<table>
<thead>
<tr>
<th>Advantages of Apprenticeships, Mentorships and Internships</th>
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<tbody>
<tr>
<td><strong>Science Center’s Point-of-View</strong></td>
<td><strong>Teen’s Point-of-View</strong></td>
<td></td>
</tr>
<tr>
<td>Apprentices/Interns:</td>
<td>Through an Apprenticeship or Internship, a young person can:</td>
<td></td>
</tr>
<tr>
<td>• Provide much-needed services to the science center at a very reasonable rate of pay</td>
<td>• Acquire work place etiquette and know-how</td>
<td></td>
</tr>
<tr>
<td>• Bring a fresh perspective to the work normally done in a science center</td>
<td>• Become an important member of a department</td>
<td></td>
</tr>
<tr>
<td>• Can diversify the science center profession</td>
<td>• Get bona fide employment experience that provides a stipend, builds a resume or portfolio and prepares him/her for the next job</td>
<td></td>
</tr>
</tbody>
</table>
CROSS-AGE TEACHING PROGRAMS

Examples of Cross-Age Teaching Programs
- Utah Museum of Natural History: Youth Teaching Youth [http://www.umnh.utah.edu/pageview.aspx?id=19923]
- National Aquarium in Baltimore [http://www.aqua.org/aquariumonwheels.html]
- Science Museum of Minnesota, Youth Science Center [http://www.smm.org/about/kaysc/]
- St. Louis Science Center [http://www.youthexploringscience.com/programs]

Across YouthALIVE! programs, one of the most meaningful experiences reported by teens, was that of engaging younger children in learning activities. Although outreach to young audiences through special events out in the community is one venue for cross-age teaching, the most common environments are afterschool and summer programs. For some science centers/museums, teens assist museum educators with in-house classes for children. Regardless of where the teaching occurs, the teens train intensely, learning the science concepts, practicing the activities and developing questioning techniques that they will use in their work with the children. This training, usually lead by the youth program staff, can include sessions with a scientist or curator who can deepen the teens’ understanding of the science concepts on which the activities are based. In most programs, staff model the inquiry-based teaching behaviors that they want the teens to use with the children. (The Exploratorium is a great resource for anyone interested in exploring inquiry as a pedagogical tool for informal science. [http://www.exploratorium.edu/ifi/about/index.html])

In programs where the teens are teaching only in the summer, the preparatory activities are the main focus of the teens’ science center work during the school year. In other programs, the teens may spend several sessions each week throughout the school year, engaged in the requisite preparatory activities before their weekly sessions with the children in afterschool programs. Teens with experience are able and encouraged to design new activities. For some teens, these kinds of programs stimulate an interest in careers which involve working with children and youth.
PROGRAM MODELS: ADDITIONAL RESOURCES


Module 2: PROGRAM DESIGN

Part B: MEETING MISSION AND NEED

MUSEUM MISSION AND TEEN NEEDS

- ADDRESSING A TEEN NEED: Developing Workplace Competencies
- ADDRESSING A TEEN NEED: PREPARING FOR COLLEGE
- ADDRESSING A MUSEUM NEED: Diversity
  Diversity Resources

IDENTIFYING NEEDS AND RESOURCES

- ORGANIZING A PLANNING TEAM
- SEEK OUTSIDE EXPERTISE
- WORKING WITH THE COMMUNITY
- FINDING PARTNERS
- CONVENE YOUTH FOCUS GROUP(S)
- FOCUS GROUP FINESSE
- RECRUITING FOCUS GROUP PARTICIPANTS
  Focus Group Follow-Up
- PULLING IT ALL TOGETHER
What kind of youth program is best for my science center/museum?

Program Design: Part A: Models offered several program models that demonstrated ways in which teens are authentically integrated into the operations of science centers and museums. However, you will have to identify ways in which youth might be ideally integrated into the operations of your own institution that may or may not be similar to examples given. This section offers examples of how a youth program can benefit a science center or museum while supporting healthy youth development. It also suggests strategies and resources for identifying the needs of museum as well as those of the youth in your community.

MUSEUM MISSION AND TEEN NEEDS

Where is the convergence between your science center/museum’s needs and the needs of your community’s young people? Begin by assessing your institution’s overall mission and objectives from the perspective of how could a teen program help fulfill those objectives and move the mission forward. Then to follow, discuss possible teen programs with CBO staff, community leaders, young people, parents and teachers to help build a clear picture of your community’s youth wants and needs. Core elements of your youth programs must reside where the needs of the science center/museum and the community’s youth overlap.

Most youth programs cited throughout this guide have been operating for more than a decade. Their sustainability suggests that they are successful in at least four critical areas:

1. Meeting the museum’s mission goals and objectives
2. Meeting educational, social and developmental needs of program participants
3. Meeting a community need
4. Securing funding to sustain their work

Since program design must address the needs of the institution and the needs of the youth, one could say that the sustainability of these programs is directly, but not solely, related to the core program design and the program’s ability to adapt as needs and resources change. For example, staff often find that as young teens from after-school programs mature, they become interested in continuing their participation on a deeper level. These programs often develop ‘career ladders’ that the teens ‘climb’ by incrementally increasing their responsibilities as service providers for their museum. New York Hall of Science is an excellent example of a fully institutionalized ladder program.

New York Hall of Science
http://www.nyscience.org/join_getinvolved/www.nyscience.org/SCL
ADDRESSING A TEEN NEED: Developing Workplace Competencies

Many of the youth programs that participated in Phase II of the YouthALIVE! (Youth Achievement through Learning, Involvement, Volunteering and Employment) Initiative began to align their job training and performance assessments with the five competencies identified by the U.S. Department of Labor Secretary’s Commission on Achieving Necessary Skills (SCANS) research for the beginning of the 21st Century.

A common job training framework, YouthALIVE! in the workplace (Appendix V), was created by adapting these SCANS competencies to work done in science centers/museums. The five competencies include:

- **Resources:** Identifies, organizes, plans and allocates time, money, materials, facilities and human resources.
- **Interpersonal:** Works with others as team members, explainers, teachers, visitor service representatives, etc.; Develops skill in handling conflicts and embraces diversity
- **Information:** Acquires, evaluates, organizes, interprets and communicates information
- **Systems:** Understands the science center/museum as a set of complex interrelationships; recognizes own role in system’s operation; Monitors and corrects own performance within the system
- **Technology** – Selects and applies appropriate technology to tasks

Each of these skill areas, while important in the larger work-world, can be readily recognized as essential to the smooth operation of a science center or museum. This makes these institutions, already perceived as safe havens by some, ideal environments in which to nurture these skills as part of a structured, services-oriented youth program.

ADDRESSING A TEEN NEED: PREPARING FOR COLLEGE

Recognizing that far too many young people enter their junior or senior years of high school without any notion of what is required for college admission, a number of museum-based youth programs are incorporating elements that support academic performance, college preparation and career awareness, for all high school-age participants. Science centers and museums are finding that admissions officers from local colleges serve as effective partners for these activities.

ADDRESSING A MUSEUM NEED: Diversity

Due to the ever-changing demographics of the United States and many other countries around the world, nurturing an organizational climate that embraces inclusive practices is key for securing the relevancy of science centers and museums. Initially, the programs...
launched under YouthALIVE! targeted underserved populations, youth of color and youth from low income communities. However, more broadly speaking, 'underserved' refers to any and all populations that are not proportionally represented in the core visiting audience of the science center or museum. Engaging youth from underserved populations presents an exciting opportunity for both the institution and youth participants. Well-designed youth programs provide an opportunity for young people to share their unique worldviews. In these safe, supportive environments you people who may differ in socio-economic status, age, cultural diversity, religion, physical ability and sexual orientation are able to educate each other and their adult mentors. While empirical research on the impact of diversity in science centers and museums remains to be done, studies of diversity in workplaces and on college campuses have shown the benefits.

Science centers/museums also benefit from establishing meaningful long-term relationships with youth by creating a pool of young adult that may transition into full-time employment upon graduating from high school or continue working with the museum part-time while attending university. Young people from diverse backgrounds provide staff with an opportunity to increase their cultural competency; and positioning the institution as an entity that is invested in bettering the outcomes for the entire community.

**Diversity Resources**

*Who Benefits from Racial Diversity in Higher Education?* by Mitchell J. Chang, Associate Dean of the College of Liberal Arts, Loyola Marymount University and Alexander W. Astin, Director, Higher Education Research Institute, University of California-Los Angeles.  
[www.diversityweb.org/Digest/W97/research.html](http://www.diversityweb.org/Digest/W97/research.html)

*Why Diversity Matters*, Human Resources, University of California, Berkeley  
[http://hrweb.berkeley.edu/seads/diverse.htm](http://hrweb.berkeley.edu/seads/diverse.htm)

*Young and Old Recognize the Benefits of Having a Diverse Workplace*, Jobwise  
IDENTIFYING NEEDS AND RESOURCES

Rather than relying on assumptions to create or affirm the goals and desired outcomes of your program, set aside time for research on local needs and resources. Since your goals, desired outcomes, and program design must consider both youth and institutional needs, begin researching within your museum and then extend your search to the community to garner input and support. If your purpose is to enhance an existing youth program, first, review all previous grant proposals and other documents regarding the current youth program. Then, study other current or previous programs offered for adolescents in your science center or museum. What needs were they designed to meet? How successful were they? Regardless of whether you are designing a new program or refining an existing program, the goals and objectives of the youth program should be well defined.

ORGANIZING A PLANNING TEAM

Recruit one or two colleagues to form an in-house planning team. Discuss the program with your development office during the beginning stages, especially if grant funds have been secured. The planning team can begin internal research by conducting a short survey of key staff members. This could take the form of informal interviews conducted by planning team members or a written questionnaire presented at an ‘All Staff’ Meeting. Ideally, the CEO/Director will demonstrate his/her support of the program by signing off on the memo accompanied by the questionnaire or by offering verbal support of the project in a live forum. If the planning team has initial ideas regarding the scope of the program, communications with other staff might include a brief description of the program model(s) being considered and an outline emphasizing possible program goals and objectives, target audience, anticipated frequency of sessions, etc. To maximize staff feedback, keep answers confidential and give plenty of time to respond during the interview or in returning the questionnaire. Be certain to assess staff receptiveness and knowledge of adolescents. In addition, gain a sense of who might be interested in assisting with the program and on what level. Compile the results and share them with the planning team. Together, you are beginning to answer the question, “What might a perfect youth program look like at our institution?”

SEEK OUTSIDE EXPERTISE

To assist in the planning, identify two or three individuals who are highly regarded for their expertise in program development, youth employment training, informal education, community-based organizations or hands-on science education. These planning advisors, all of whom should be very familiar with the communities targeted for your program, can become members of your formal advisory committee. This handbook and the Youth Programs Forum at ASTC Connect can provide access to many successful museum-based youth programs that can serve as planning and problem-solving resources.

WORKING WITH THE COMMUNITY

Building relationships in your community is just as important as building relationships within your organization. As discussed in Module 1, science centers usually seek out community-based organizations (CBOs) as partners for launching youth programs that engage youth from underserved communities. A well-developed understanding of each stakeholder’s agenda and mission will provide opportunities for ways in which you and your partners can work together.
The National Assembly of Voluntary Health and Social Welfare Agencies (www.nassembly.org) states that active support of leadership is critical to a successful partnership. Partnerships take time to develop and yield results. Partnerships should continue for many projects which are different from coalitions in which the members come together to accomplish a specific goal. A successful partnership depends on the commitment of leadership of both organizations. However, CBO leaders frequently look for indicators of commitment of investment in the program by the science center's leadership. Only leadership can shelter a partnership from being cut off completely during a dry spell in funding.

Regardless of whether you work with previous organizations or forge new relationships, keep in mind the following facts:

- Partnerships take time to grow.
- Partnerships involve give and take.
- Partnerships evolve.

"When choosing a community partner, realize that keeping the "s" off the word partner may save you! We began with an advisory board of six: three school administrators, two community youth group coordinators and one local university educator. We received verbal or written communication from all of them but as time passed it was evident who would support us with their ideas, facilities, crisis services and/or staff."

The Newark Museum

**FINDING PARTNERS**

Prospecting for community contacts is somewhat like fundraising--be on the alert, looking for good talent and recognizing the conjunction of interests. Remember, you want a partner organization that knows the teens, their families and their culture. You will need a partner who will assist in recruiting teens for your program and will connect you with social service agencies, if the need arises. Learn in advance about the community, its history, its current issues, its values and its communications systems.

Create a map of the community and identify centers of power and key institutions. Find people willing to act as guides within the community, to introduce you to key community members and to vouch for you and your science center’s trustworthiness. Attend community events, churches and community centers. Many school districts, committed to reforming science education, may be open to innovative science center-based programs that enhance students' interest, motivation, knowledge and skills in science and technology.

During the planning phase of your program, you will need your community partner’s input not only to determine what the teens need and to make sure that your team is designing a program that will be attractive to the teens of that community, but to secure the input and support of the teen’s parent/guardians. When most science centers are ready to launch new youth programs, they turn to their community partners for help with recruiting teen participants and contacting families. Later, if teen issues arise requiring intervention, these community partners can connect the museum staff to local social service networks.
However, before you look for community partners, prepare materials and a presentation about the science center and your program. You need to be able to convincingly and concisely tell folks:

- What the science center and a youth program can offer
- What makes the program you envision special
- What exactly the youth and the community organizations will get out of participating in your program.

Also be very clear about what type of participation you need from them.

Be aware that funding is usually an ongoing challenge for many community organizations and staff attrition is not unusual. The person who helps get your program started may eventually move on. Therefore, if you expect ongoing input and collaboration from a CBO partner, consider including that partner, even a minimal amount if funds are quite limited, as you plan the budget for this program. In subsequent years, this CBO may be willing to partner with your museum to secure grants for your program.

**CONVENE YOUTH FOCUS GROUP(S)**

Regardless of the format, programs that excel involve youth early in the planning process. An essential part of your research should include getting youth feedback on program possibilities. By involving teens early, you’ll spend time designing and planning a program that teens want and need rather than a program based on isolated assumptions. To this end, plan to hold at least one focus group designed to assess what the needs and interests of youth are in your community. Start forming your focus group questions early. The number and specificity of questions will depend on how much information the teens already have about the science center, your time availability and the expertise of the facilitator. Share your proposed questions with people from your advisory committee and elicit their feedback.

Select a diverse group of young people for the focus group. Draw from the population from whom you would like to recruit. The needs of young people from different parts of your community may overlap in some areas and differ radically in other crucial areas (e.g. whether or not they receive help with educational planning, have transportation issues or value diversity). Your potential community partners can expedite the recruitment process by identifying young people who would be good participants and possibly even provide the space for the focus group, if there isn’t any space available in the science center.

Arrange the focus group at a time when you can give a tour of the science center as well as introduce the teens to various departmental staff in a science center. Not many teens have
an opportunity to go behind-the-scenes of a science center or even to experience a science center on a personal level. Develop activities to give the teens a good idea of the scope of what your institution can do. The teens will be able to provide much more relevant feedback this way.

1. Develop a simplified outline of a preliminary program timeline and possible activities to give the teens something specific to refer to and comment on.
2. Before inviting key adult stakeholders to attend focus group meetings, make it clear that they are attending as observers only.
3. Arrange for snacks and a small thank-you token for the teens’ participation.

**FOCUS GROUP FINESSE**

Needless to say, the key concept is focus. The group needs to remain focused and flexible. If the conversation strays too far from the discussion topics, re-establish the focus while keeping an ear tuned for passing comments/observations that may actually be useful with a little probing.

- Compose specific questions that focus on areas where program design concepts are the weakest.
- Develop specific and answerable questions.
- Develop a list of follow-up questions to elicit more detail to responses.
- Circulate the questions to your community partners and advisory committee for their feedback.
- Do a test run.

**RECRUITING FOCUS GROUP PARTICIPANTS**

Contact your community partners and explain that you are creating a focus group to fine tune the program. Specify the ways that you’ll need their help. Be prepared to answer questions regarding logistics of the focus group, including how long the focus group will last and how the teens will get to and from the science center. Ideally, you should deliver the invitations to the focus group in person, to answer the questions the young people may have. Inform the community partner’s contact person that you will be sending a memo that can be distributed to interested teens. The memo should be on science center letterhead and include the following:

- A permission slip and release form for the young person’s parent/guardian to sign and return to you before the focus group. Specify a hard deadline date and include instructions on how to return the permission slip back to you. Every participant in the focus group must have submitted all the signed forms before the focus group meeting.
- Explain the reason for convening a focus group and state very clearly what you need the teens to do. Give an example or two of the types of questions that you’ll be asking. Also explain the skills that a focus group participant should have—willingness and comfort with expressing him or herself, ability to listen well, ability to get along with others, a willingness to solve problems, etc.
- Include on the invitation the time the teens should be at the science center and the time they can expect to leave. If you are providing transportation, explain when and where to meet. If you are not providing transportation, clearly explain how to use
public transportation to get to the science center and detailed driving instructions. Reimburse teens for cost of travel to and from the science center, if possible.

- If you intend to record the focus group, inform teens that they will be recorded and include a release form with their permission slip and introductory memo. The sample release form in Appendix I can be modified for this purpose.

- Be sure to mention that snacks and a small token of appreciation will be provided.

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During a public interview session at the YouthALIVE! National Network meeting in Portland, OR, youth program participants surprised program directors when they noted how important their initial impressions of the buildings were.

**Focus Group Follow-Up**

Send thank you notes to focus group participants following the session. Transcribe the focus group discussion as soon after the meeting as possible, but do not analyze their responses immediately. It’s advisable to give yourself a week before you correlate the youths’ responses with the issues they pertain to and begin to see connections. As you mull over the implications of what you observe, also think about how, or if, you’ll address them.

**PULLING IT ALL TOGETHER**

As your planning committee gathers information from the staff, the community, and from focus groups, all notes should be collected and reviewed with your planning advisors. Use knowledge base on youth programming models in museums and the needs of local teens to discuss the ideal ways for your science center or museum to respond programmatically. You can create the big picture (Explainer Program, Cross-Age Teaching, etc.) for what teens will be doing in your museum. The needs assessment process has prepared you to now develop goals and desired outcomes for your program. Please see the following section, *Module 2: Program Design: Part C: Setting Goals and Outcomes* for more information.

Ideally, you should bring your program schematic to the museum administration staff and discuss it in depth. This is the perfect time to identify any logistical concerns that may arise as well as develop a common understanding on youth expectations, the program and the museum. It is also an ideal time to identify and discuss internal allies for your program.
Module 2: PROGRAM DESIGN

Part C: GOALS AND OUTCOMES

STATEMENT OF PURPOSE, GOALS AND OBJECTIVES ____________ 2
STATEMENT OF PURPOSE ________________________________________ 2
WRITING/REFINEING GOAL STATEMENTS ____________________________ 2
WRITING/REFINING PROGRAM OBJECTIVES __________________________ 3
DEVELOPING A LOGIC MODEL ______________________________________ 4
SAMPLE LOGIC MODEL FOR A MUSEUM-BASED YOUTH PROGRAM ______ 4
BENEFITS OF A LOGIC MODEL____________________________________ 5
In Module 2, Part B: Meeting Mission and Need, we focused on the importance of becoming familiar with the needs of youth in your community and the needs of your museum. Clearly no one program can meet all the needs of either the museum or the youth. However, after reviewing program models in Module 2: Part A: Program Models, and using strategies suggested in Module 2: Part B: Meeting Mission and Need, you should know where the needs of youth intersect with the needs of your museum.

STATEMENT OF PURPOSE, GOALS AND OBJECTIVES

STATEMENT OF PURPOSE

Your program’s purpose, goals and core components should be developed out of that intersection of needs and take into account financial and human resources – resources that are available now and those anticipated in the near future. Take time to write your program’s primary purpose before attempting to refine that purpose into a statement of one or more goals. Your purpose statement should include the target population and a general description of the services to be provided.

Sample Statement of Purpose:
Youth Horizons, a program of the XYZ Science Museum, promotes youth development and science literacy for neighborhood teens – through museum-based work experiences, career preparation, academic enrichment, and a support circle of positive adults and peers.

WRITING/REFINEING GOAL STATEMENTS

Goals are general statements which guide the activities of the program, focus on teens and services provided and used to measure program effectiveness.

Possible goals for our sample purpose might be:

- To provide neighborhood teens with basic entry-level workplace skills and opportunities for advancement
- To deepen teens’ understanding of selected science concepts
- To encourage academic achievement and preparation for life after high school
- To increase the science museum’s capacity to serve underrepresented populations
- To help teens from the neighboring community see the science museum as a resource for themselves and their families
WRITING/REFINING PROGRAM OBJECTIVES

Program objectives are specific and usually quantifiable statements of program achievement. You will often refer back to your objectives when considering program evaluation.

Examples of Objectives for Selected Sample Goals:

Goals:
- To provide neighborhood teens with basic entry-level workplace skills and opportunities for advancement
- To deepen teens’ understanding of selected science concepts

Objectives:
- Fifteen young people, ages 14-17, will be recruited from local community organizations for a work-based learning program
- Each teen participant will complete the museum orientation and introductory training program focusing on the museum as a public service system
- Teen participants will meet weekly for science enrichment and ongoing workskills training sessions in interpersonal skills, communication, resource allocation and technology
- Teens will research, discuss, practice and schedule hands-on science activities for use with visitors and community children

Goal:
- To increase the science museum’s capacity to serve underrepresented populations

Objectives:
- Staff will develop a partnership with at least one youth-serving community organization from which teens will be recruited
- Workshops focused on working with teens will be organized for museum staff
- Teens will serve a semester as apprentices to museum education department outreach staff
- Teens will serve a semester as interns in the visitor services department
- Staff will develop job opportunities with increasing levels of responsibilities for teens
DEVELOPING A LOGIC MODEL

A Logic Model, a graphic tool often used by program planners and evaluators, is a good way to summarize your program by describing its various elements and the connections between them. A simple logic model might present program inputs (including staff, participants, funding, partnerships, etc), activities, intermediate outcomes (immediate results) and long-term outcomes (desired behavior changes).

SAMPLE LOGIC MODEL FOR A MUSEUM-BASED YOUTH PROGRAM
(See sample statement of purpose at beginning of this section)

<table>
<thead>
<tr>
<th>Program Inputs</th>
<th>Program Outputs (Activities)</th>
<th>Immediate Outcomes (Immediate Results)</th>
<th>Longer-Term Outcomes (Desired Changes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community Partner (CP) Staff</td>
<td>• Outreach &amp; regular meetings with CPs</td>
<td>• Museum &amp; CP agree on goals, structure &amp; selection criteria</td>
<td>• Museum and CP collaborate to develop ongoing programming that involves community members</td>
</tr>
<tr>
<td>• Museum Youth Program Staff</td>
<td>• Needs assessments</td>
<td>• Program meets teen &amp; museum needs</td>
<td>• Museum has a new cadre of experienced part-time employees</td>
</tr>
<tr>
<td>• 15 Youths (Ages 14-17)</td>
<td>• Recruitment of teens</td>
<td>• 15 active participants</td>
<td>• Teens &amp; families are comfortable coming to museum and use it as a resource</td>
</tr>
<tr>
<td>• Parents</td>
<td>• Open house for families</td>
<td>• Parents aware of program goals</td>
<td>• After 2 years in the program, all teens are employable</td>
</tr>
<tr>
<td>• Museum Staff – Education Dept, Visitor Services, Facilities</td>
<td>• Staff training sessions on working with teens</td>
<td>• Teens develop awareness of mission, staff, structure, facilities &amp; relevant policies</td>
<td>• All teens graduate from high School with a plan for further education or employment</td>
</tr>
<tr>
<td>• Volunteers</td>
<td>• Museum orientation &amp; training for youth</td>
<td>• Teens demonstrate basic competencies in interpersonal communication, adhering to museum policies for staff</td>
<td>• Career choices of graduates include museum work, science, education, youthwork</td>
</tr>
<tr>
<td>• Uno Foundation Grant</td>
<td>• Ongoing workskills training for youth</td>
<td>• Teens demonstrate basic competencies in working with visitors, managing Time, space, materials &amp; people</td>
<td></td>
</tr>
<tr>
<td>• Afterschool for Teens Grant</td>
<td>• Weekly hands-on science sessions</td>
<td>• Teens engage children in hands-on science activities &amp; technology use</td>
<td></td>
</tr>
<tr>
<td>• Volunteer Guidance Counselor</td>
<td>• Outreach apprenticeship</td>
<td>• Most teens become interns or apprentices</td>
<td></td>
</tr>
<tr>
<td>• Local College Admissions Officer</td>
<td>• visitor services internship</td>
<td>• Teens value education</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Performance assessments</td>
<td>• Teens have resumes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• “Preparing for Your Future” workshops (4-6 annually)</td>
<td>• All seniors complete job or college applications</td>
<td></td>
</tr>
</tbody>
</table>
Designing and refining reasonable goals and desired outcomes will take time and requires knowledge of available resources (INPUTS), but once this step is done, subsequent work will flow more smoothly. Since many evaluators and researchers use some variation of a logic model as they prepare to study and document a program, it may help to seek the advice of an evaluator at this point in the planning process. If you do not have access to a formally trained evaluator, perhaps your museum’s director of education can provide feedback on your proposed inputs, outputs and outcomes.

**BENEFITS OF A LOGIC MODEL**

Many program leaders have found logic models quite useful in presenting their program to potential funders or other key stakeholders and in preparing reports. Even if you are not able to have an evaluator for your program, as you implement your program, your logic model can help you which records to keep and how to organize that information for future reports.

**Once your program is fully operational, expect to revisit and – if necessary – refine your goals, objectives and activities.**

One experienced program leader, after reflecting on how helpful the process of generating a logic model was, made the following comment: “I very much appreciate how a well defined set of goals can inform all program activities. It’s nice to have an overriding guide, especially as it informs program development. That said, I’ve also grown to appreciate how things can change and the need to revisit and refine goals as you refine your curriculum, sense of what works and vision.”

The following resources can guide you in creating a logic model for your program:

- [www.nccccurricula.info/documents/LogicModel.ppt](http://www.nccccurricula.info/documents/LogicModel.ppt)
Module 2: PROGRAM DESIGN

Part D: CORE CONTENT – CURRICULUM

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CURRICULUM DEVELOPMENT

As discussed in previous chapters, the mission of your museum or science center needs to be at the core of your program’s curriculum. For example, if your institution wants young people to discover themselves through the wonders of science, then science, mathematics and/or technology must comprise the core activities of your program. Ideally, these activities should relate to your museum or science center’s collection or exhibition content. All activities should have the museum at its center. If not, the program could take place at the local Parks and Recreation Center or YWCA. The beauty or distinctiveness of a science museum-based youth program is that it grows from the science-rich collection and/or science discipline(s) at the core of the institution.

To develop your curriculum, you will need to know the schools’ schedule and science curriculum standards.

CURRICULUM IDEAS

<table>
<thead>
<tr>
<th>Cognitive (related to the intellect)</th>
<th>Affective (involving emotions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Science-related topics that are reflected in the exhibits</td>
<td>• Interpersonal skills (including team-building, conflict resolution, self-discovery, leadership, communication (oral and written), presentation skills, multicultural awareness, self-esteem, responsibility, respect, etiquette, negotiation, honesty)</td>
</tr>
<tr>
<td>• Science topics and projects aligned with state and science standards</td>
<td>• Time management</td>
</tr>
<tr>
<td>• Science topics of high interest to participants</td>
<td>• Goal setting</td>
</tr>
<tr>
<td>• Activities that integrate math and science</td>
<td>• Work ethic</td>
</tr>
<tr>
<td>• Activities that encourage the use of science process skills (questioning, hypothesizing, observing, collecting data, inferring, etc.)</td>
<td>• Critical teen issues</td>
</tr>
<tr>
<td>• Technology skills (e.g. rudimentary computer skills)</td>
<td>• Community service</td>
</tr>
<tr>
<td>• Other academic skills, educational planning/college prep</td>
<td>• Visitor service</td>
</tr>
<tr>
<td>• Art Activities</td>
<td></td>
</tr>
<tr>
<td>• Projects, field trips</td>
<td></td>
</tr>
</tbody>
</table>
RULES FOR WORKING WITH TEENS

Throughout the stages of program planning, implementation and evaluation, it would be wise to refer back to a few basic guidelines for working with and mentoring teens. Make sure the activities and scheduling for your program take into account caveats passed along by other youth program leaders which are summarized on the next page.

12 BASIC RULES FOR WORKING WITH TEENS

1. Treat each teen with respect for the unique individual he/she is and for what he/she brings to the group.

2. Create a safe, supportive environment where teens know they can dream, explore, make mistakes, try again and succeed.

3. Remember that, despite some arrogance, most adolescents struggle with the feeling that they are small. Try to create opportunities for them to feel important.

4. Set parameters that are important, explain the reasons for them clearly and enforce them fairly and firmly with a set of progressive sanctions.

5. Offer honest feedback to teens, letting them know firmly but caringly when you cannot accept certain behaviors (not the persons displaying those behaviors).

6. Take time to respond to each teen as an individual and let them know they are valued in every appropriate way possible.

7. Model the behaviors you wish the teens to adopt: loving, fair-minded, moral, humorous, honest, reliable, giving, hopeful, etc.

8. Do not burden teens with personal, adult problems; it takes all of their energy to handle the circumstances of their own lives.

9. Know how to identify teens who may need additional support and have references available to meet those needs.

10. Be very aware of varying personal, cultural and societal customs regarding family and gender roles, physical space, eye contact, touching, time, religious codes, etc. and teach teens to observe and respect those customs.

11. Respect confidentiality; let teens know early on that you are obligated to report legal information such as child abuse, theft or other criminal activities, but all other personal information will be kept confidential.

12. Make a commitment to continue learning all you can about working with adolescents.

From the Introduction to YouthALIVE! In the Workplace for the “12 Basic Rules For Working With Teens.” (Appendix V)
DEVELOPING THE PROGRAM

Now that you have thought carefully about your audience, have decided on the type of program that best fits your situation and have developed a set of written goals and outcomes, it’s time to figure out the content and operational details for your program. You know what you want the teens to get out of their participation in the program, but exactly what experiences will they need in order to achieve those outcomes? How will you structure time so that when the teens are with you, the teens and the program are moving in the desired direction?

There are a multitude of curriculum options available to positively impact your youth participants. It is important to consider striking the right balance of experience for your youth that you or your resource partners can provide. Students will have a spectrum of knowledge and abilities when they begin. As their supervisor and mentor you should assess their needs ensuring opportunities to grow in those areas which they are most deficient.

Consider the variety of activities and skills imbedded in several popular programs that prepare teens for working with visitors on the museum floor.

In the programs discussed later in this section, look for the ways in which specific program elements can address particular developmental needs like:

- Learning to respect people and things
- Learning and perfecting new skills
- Developing strategies for positive peer interactions
- Creative expression
- Opportunities to explore new behaviors
- Meaningful participation
- Relationships with caring adults willing to share their knowledge and skills
PROGRAM COMPONENTS

Each program, regardless of type, should consider weaving in specific program components to ensure that they address the whole participant. Consider the following program components:

- Content Knowledge/Science Literacy
- Soft Skills and Workplace Competency
- Critical Teen Issues
- Basic College Preparedness/Academic Support

CONTENT KNOWLEDGE/SCIENCE LITERACY COMPONENT

This component includes any content training the youth should receive. Training sessions should be designed to meet your specific program goals but they can also include training on exhibits, in-house and out-of-house programming and/or demonstrations. Sessions should not only include specific content knowledge that the youth are required to learn but should begin with a science literacy component so students understand the science behind their facilitation. Keep in mind that there may be many content and experiential gaps in your young people’s prior science education. Therefore, your content-rich program can be an opportunity to validate the effectiveness of your science center or museum as a science learning resource.

Training youth is not always an easy task and requires skill. Once a topic has been selected, sufficient time must be allotted for the young people to explore, question, discuss and summarize their new understanding of the topic. Trainers should be skilled in setting up science exploration experiences and delivering content rich information that provides enough background from which the young people can work, but is also easy to understand. This is accomplished by utilizing all learning styles. Your training sessions should address all styles and may be done through a combination of hands-on activities, visuals (such as props and video) and lecture or discussion. See below for an explanation of learning styles.

1. **Kinesthetic/Tactile Learners:** Learn through a hands-on approach and do best by touching, moving and doing. Hands-on activities, demonstrations and/or manipulating items are perfectly suited for the kinesthetic learner. This type of learner may find it difficult to sit for long periods of time and may become distracted. If the young people are working with younger children, it is very important that their training sessions model teaching and learning situations that utilize kinesthetic strategies.

2. **Visual Learners:** Learn best through the use of objects (or props) and visuals such as illustrations, diagrams, video, PowerPoint presentations and overhead transparencies. This type of learner will take copious, detailed notes to absorb the information in an auditory environment.

3. **Auditory Learners:** Learn best through verbal lectures and discussions. They need to hear the information. Written curriculum often has no benefit until the words are heard. These learners often read text aloud and use tape recorders for playback.
Trainers should become familiar with the art of inquiry-based learning and model it in their sessions. Youth participants should be taught how to use the inquiry process in their facilitation/demonstrations to provide a good learning experience for visitors. Because inquiry relies on questioning, training should not only help the young people develop good questioning skills, but appropriate responses when asked questions that they are not able to answer. Visit the following links for more information, resource techniques and downloadable activities on inquiry based learning and teaching.

http://hea-www.harvard.edu/ECT/
http://www.nap.edu/openbook.php?record_id=10126&page=475

**SOFT SKILLS AND WORKPLACE COMPETENCY COMPONENT**

In addition to science content training, all teen staff should participate in workshops and or training sessions that address soft skills and workplace competency. This type of preparation will assist youth in understanding how to view and interact with others, working as part of a team, building responsibility and work ethic, professionalism and workforce preparation.

**Soft Skills**

Soft skills refer to the skills that help us interact with one another. Soft skills training will assist youth with understanding, recognizing and practicing new patterns of behavior that enable them to work effectively with others. Soft skills may include effective communication (oral and written), teambuilding/collaboration, listening, problem solving, multicultural skills, creativity, self-esteem, respect, honesty, conflict resolution and leadership. All of these skills will help your youth to better interact with the public and deliver programming that is second to none.

For activities and ideas, for more information, resources, and activities on specific soft skills see the Interpersonal Module of YouthALIVE! in the Workplace (Appendix V) and the following links:

www.tolerance.org/teach/index.jsp
www.tolerance.org/teens/index.jsp
www.edchange.org/multicultural/

**Workplace Competency**

Workplace competency refers to skills that enable individuals to be successful in their specific jobs. Soft skills and workplace competency go hand-in-hand. All soft skills are included under the workplace competency umbrella. In addition to soft skills, workplace competencies for the museum environment can include ability to motivate others, time management, organizational skills, use and allocation of resources, good customer service, conflict resolution, work with a variety of technologies and the ability to self monitor. Career planning and skills needed for specific careers, resume writing and interviewing skills should also be explored in this component. Career fairs and guest speakers are good ways to have teens begin conversations about the future and perspective careers.
Visit YouthALIVE! in the Workplace (Appendix V) for more information, resources and activities on workplace competencies. Several sections may be particularly helpful:

- YouthALIVE! in the Workplace: Interpersonal Skills Module
- YouthALIVE! in the Workplace: Appendix B: “Tools for Helping Teens Succeed,”
- YouthALIVE! in the Workplace: Appendix C: “Supplements for Supervisors,” includes assessment tools for both the supervisor and teen.

Be sure to include all your youth in these workshops, no matter what their specific responsibilities. You can highlight and stress which pieces they will be using more in their specific positions but all should be included. Specific soft skills for explainer, demonstrator and apprenticeship and internship positions are highlighted below.

Do not feel that you and/or your team need to do all of this without assistance. Utilize the expertise of professional consultants or other museum staff to help deliver some of these workshops.

**NOTE:**
For those who volunteer to come in and share their expertise with your teens, you and/or the teens should be sure to follow-up with thank you letters.

**CRITICAL TEEN ISSUES COMPONENT**

It is imperative that all youth programs include a component focused on issues critical to the lives of teens. In this component, you help teens address personal and/or professional issues within their household, workplace, community and/or school environments. Although you and other museum staff cannot address all of the needs of the teens, you should at least be sensitive to their needs and connect the young people with appropriate community resources that can assist them.

From time to time, teens are going to need to talk out issues, seek advice or require a supportive environment where they feel safe. It is in this component where they can have a voice and let their opinions be heard. Topics might include relationships, sexuality, issues within community, work, school or home, emotions, self-esteem, creative writing, sexual identity, body image, music in the media, etc. Special events like poetry, game and movie nights and talent shows provide teens an opportunity to express themselves.

If you have veteran teens, allow them to take the lead in developing and facilitating these sessions. They often know better than the adults what issues need to be discussed or the latest news spreading in and around the community and schools. Take a group census on
what they would like to discuss during these sessions. As always, observe your youth and offer extra support to those that may need it.

For topic ideas on addressing critical teen issues, visit the following links:

1. [www.advocatesforyouth.org/lessonplans/index.htm](http://www.advocatesforyouth.org/lessonplans/index.htm)
2. [http://www.focusas.com/SubstanceAbuse.html](http://www.focusas.com/SubstanceAbuse.html)
   (Extensive list of topics and helpful information of interest to teens)

**ACADEMIC PREP/EDUCATIONAL PLANNING COMPONENT**

"We lost a number of teens because of their grades or attendance in school. We (now) encourage the teens to bring in their homework (designated days) and they are required to turn in a copy of their report cards for the semester. For subjects the teens are having difficulty in, we support them by offering informal and sometimes formal tutors. One of the benefits to teens participating in the program is that we promote a higher achievement in academics which will reflect on the school report card."

- Lied Discovery Children’s Museum
The academic prep/educational planning component reinforces the importance of school and introduces teens to the possibility of higher education. Session topics include study skills and habits, SAT or ACT preparation, college preparation (and tours) and tutoring programs or shadowing programs within and outside of their museum.

Consider the diagram above. It sums up what learning opportunities your program should provide, regardless of which model you select. Some people will design programs which place greater emphasis on one or two components, but this at least can help them remain aware of teens’ other learning needs. The above sections discuss the content and workplace competency areas. The Critical Teen Issues component describes the activities that you may employ to allow time for students to discuss and reflect on themes that are particularly relevant to them and affects their lives. The fourth component relates to academic preparedness, which is discussed below. Programs which incorporate both the Workplace Competency component and an Academic component are providing a balance of skills which contribute to teens’ preparedness for a future in post secondary education and/or full time employment.

Ideally, the ultimate goal is for all students to pursue post secondary education. Preparing youth to consider this as a viable option begins with awareness and access. Sometimes, students do not choose to do so, even with encouragement and planning opportunities. This is where the soft skills, work competency and content knowledge supports them the most.

There is a wide variety of activities that will fit nicely within your program’s core strategic framework and can move your students from awareness to achieving goals.

**Building Blocks for Educational Planning**
Caring adults know that education is important and convey that to young people in various ways. They communicate high standards for learning and recognize academic achievement. Academic support for students who are not doing well has prompted program staff or resource partners to:

- Offer tutoring support
- Incorporate more writing, vocabulary and math building activities
- Monitoring report cards and grades
- Assist with high school course selection

College Preparedness sessions will help students understand the requirements for and options of 4-year colleges, 2-year colleges or trade schools. Activities to support this component may include:

- Trips to local and regional colleges (large and small)
- Information on colleges and programs designed to support achievement of minority or low income students
  - [http://www.smart.net/~pope/hbcu/hbculist.htm](http://www.smart.net/~pope/hbcu/hbculist.htm)
  - [http://www.hacu.net/hacu/Default_EN.asp](http://www.hacu.net/hacu/Default_EN.asp)
  - [http://www.hacu.net/hacu/Scholarship_Resource_List1_EN.asp](http://www.hacu.net/hacu/Scholarship_Resource_List1_EN.asp)
  - [http://dir.yahoo.com/Education/Higher_Education/Colleges_and_Universities/United_States/American_Indian_Tribal_Colleges/](http://dir.yahoo.com/Education/Higher_Education/Colleges_and_Universities/United_States/American_Indian_Tribal_Colleges/)
  - [http://www.collegescholarships.org/scholarships/low-income.htm](http://www.collegescholarships.org/scholarships/low-income.htm)
- SAT/ACT prep
- Studying/note taking skills
- Workshops with financial and admissions counselors
- Internet research
  - [http://www.powerprep.com/colliquid.htm](http://www.powerprep.com/colliquid.htm)
- College life panels discussions with program alumni and/or young professionals
- Career exploration, relating content to careers; access to professionals
- Building a portfolios and refining interviewing skills
- Parent involvement/awareness opportunities

The following chart, Building Blocks for Educational Planning: A Menu of Strategies offers examples of many ways a youth program can build in activities to promote academic success, develop career awareness, encourage the development of personal goals and support planning for college and work. No one program can expect to incorporate all of these strategies, but many science centers and museums in the YouthALIVE! Network were able to make post-secondary education and training a reality for their young people by modifying their program design to include several of these strategies as core curriculum components.
## Building Blocks for Educational Planning: A Menu of Strategies

### I. Assuring Academic Success – Middle and High School Students

<table>
<thead>
<tr>
<th>Programmatic Objective</th>
<th>Possible Strategies and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assess Skills</strong></td>
<td>• Skill Assessment Tools:</td>
</tr>
<tr>
<td></td>
<td>Verizon Literacy Program Self-Assessment Tool</td>
</tr>
<tr>
<td></td>
<td>Honolulu Community College Intranet</td>
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<td></td>
<td><a href="http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebook/teachtip/scans.htm">http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebook/teachtip/scans.htm</a></td>
</tr>
<tr>
<td></td>
<td>• Youth program staff confer with school and/or community organization</td>
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<tr>
<td></td>
<td>• Youth program staff maintain contact with parent/guardian</td>
</tr>
<tr>
<td></td>
<td>• Pre-program interviews, mid/end program evaluations and informal discussions</td>
</tr>
<tr>
<td></td>
<td>• Skill Monitoring and performance assessments by mentors/supervisors (See Appendix V, YouthALIVE! in the Workplace)</td>
</tr>
<tr>
<td><strong>Strengthen Study Skills</strong></td>
<td>• Group Discussions</td>
</tr>
<tr>
<td></td>
<td>• Workshops in setting academic goals, managing time, being organized, remaining motivated, effective listening, reading for comprehension, note taking, test taking, memory techniques, vocabulary building and math problem solving</td>
</tr>
<tr>
<td></td>
<td>• Peer study groups – for youth by youth</td>
</tr>
<tr>
<td></td>
<td>• Mentoring relationships with staff or veteran youth from program</td>
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<tr>
<td></td>
<td>• Internet research</td>
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<tr>
<td></td>
<td>• Summer programs offering academic enrichment and career awareness</td>
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<tr>
<td></td>
<td>• Museum experiences that reinforce concepts being learned in school</td>
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<tr>
<td><strong>Assess and Reward Academic Progress</strong></td>
<td>• Track report cards for academic progress, problems areas, annual grade promotion</td>
</tr>
<tr>
<td></td>
<td>• Maintain records of grades, courses taken, credits earned</td>
</tr>
<tr>
<td></td>
<td>• Discuss progress with teachers/counselors</td>
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<tr>
<td></td>
<td>• Discuss course selections with middles and high school youth</td>
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<tr>
<td></td>
<td>• Recognition/incentive activities for milestones and achievement</td>
</tr>
<tr>
<td></td>
<td>• Students may be able to receive school credit for work done in youth program</td>
</tr>
<tr>
<td><strong>Build Student Support</strong></td>
<td>• Keep parents/guardians informed via newsletters, progress reports, workshops</td>
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<tr>
<td></td>
<td>• Provide workshops on positive youth development and pedagogy for mentors/supervisors</td>
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<tr>
<td></td>
<td>• Organize an open house for families, school staff and community organization staff</td>
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<tr>
<td></td>
<td>• Resource partners, program alumni, mentors, tutors provide support for young people</td>
</tr>
<tr>
<td></td>
<td>• Maintain frequent communication with teachers and counselors</td>
</tr>
<tr>
<td></td>
<td>• Authentic research, field work or other project activities with mentors build expertise</td>
</tr>
</tbody>
</table>
II. Developing Career Awareness – Middle and High School Students

<table>
<thead>
<tr>
<th>Programmatic Objective</th>
<th>Possible Strategies and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduce Career Fields</td>
<td>• Family math and family science programs</td>
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<td></td>
<td>• Career cluster discussions</td>
</tr>
<tr>
<td></td>
<td>• Interviewing professionals from various fields</td>
</tr>
<tr>
<td></td>
<td>• Field trips to workplaces and colleges</td>
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<td></td>
<td>• Career fairs and career panels</td>
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<tr>
<td>Encourage Research</td>
<td>• Explore websites for various professions</td>
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<td></td>
<td>• Use the Occupation Outlook Handbook [<a href="http://www.bls.gov/OCO/">http://www.bls.gov/OCO/</a>] to find out about the training and</td>
</tr>
<tr>
<td></td>
<td>education and education needed, expected job prospects, description of the work done, working</td>
</tr>
<tr>
<td></td>
<td>conditions and salaries for most jobs</td>
</tr>
<tr>
<td>Learn on the Job</td>
<td>• Job shadowing in the museum or other worksite; rotation through various departments</td>
</tr>
<tr>
<td></td>
<td>• Internships or apprenticeships within the museum or a partner organization</td>
</tr>
</tbody>
</table>

III. Developing Goals – Middle and High School Students

<table>
<thead>
<tr>
<th>Programmatic Objective</th>
<th>Possible Strategies and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare for Work-Related Goals</td>
<td>• Discussion of workplace policies, procedures, expectations, and responsibilities</td>
</tr>
<tr>
<td></td>
<td>• Youth involved in determining policies and consequences of inappropriate behavior</td>
</tr>
<tr>
<td></td>
<td>• Review time management, the work ethic, teamwork, etc.</td>
</tr>
<tr>
<td></td>
<td>• Annual performance reviews and regular check-ins</td>
</tr>
</tbody>
</table>

IV. Planning for College or Work – Middle and High School Students

<table>
<thead>
<tr>
<th>Programmatic Objective</th>
<th>Possible Strategies and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on Academic Preparation</td>
<td>• Middle schoolers discuss and plan for high school</td>
</tr>
<tr>
<td></td>
<td>• Annually review high school’s course selection options</td>
</tr>
<tr>
<td></td>
<td>• Pay particular attention to math and science course selection</td>
</tr>
<tr>
<td></td>
<td>• Create an academic record worksheet or file for each participant</td>
</tr>
<tr>
<td></td>
<td>• Develop general understanding of college admission requirements</td>
</tr>
<tr>
<td></td>
<td>• Annually review steps to be taken at each grade level in order to have college as an option</td>
</tr>
<tr>
<td></td>
<td>• Review course selections to determine if they support expressed career interests</td>
</tr>
<tr>
<td></td>
<td>• Starting in sophomore year, begin preparing for college entrance exams – PSAT, SAT, ACT</td>
</tr>
<tr>
<td>Prepare for Life After High School</td>
<td>• Develop timeline for the future</td>
</tr>
<tr>
<td></td>
<td>• Monitor balance between academics, the museum program and school-based extracurricular activities</td>
</tr>
<tr>
<td></td>
<td>• Write full description of museum job</td>
</tr>
</tbody>
</table>
### Program Components

- Prepare resume
- Practice interviewing skills – for jobs, for college admission
- Use journaling, creative writing and related activities to prepare students for college essays
- Attend college fairs
- Become aware of the role of financial planning to support goals, especially college
- Find employment – important for most graduating seniors, college-bound or not

### V. Getting Into College – Middle and High School Students

<table>
<thead>
<tr>
<th>Programmatic Objective</th>
<th>Possible Strategies and Activities</th>
</tr>
</thead>
</table>
| **Get Essential Information** | - Internet research on colleges and scholarship possibilities  
- Learn admissions requirements of specific colleges  
- Take advantage of opportunities to participate in ‘college bound’ programs  
- Secure college materials and applications (Even juniors can benefit from sending for and discussing these materials)  
- Discuss options and finalize list of colleges that best match needs, interests and financial resources  
- Financial planning workshop for students and parents (local college admissions offices can be a good resource for this expertise) |
| **Complete the Process** | - Keep guidance counselor apprised of progress and press for assistance when needed  
- Apply for and take PSAT, ACT and SAT (fee waivers may be available, if needed)  
- Complete applications and essays. Have all materials reviewed for clarity and errors  
- If colleges require references, make those contacts well before submission time  
- With parental help, complete the process for applying for financial aid  
- Submit all application materials as early as possible, well before final deadline |
PROGRAM ROUTINES

Although the curriculum that you are developing for your program depends on the type of program that you have outlined, it is important to note that as YouthALIVE! programs evolved in the past, in many of the stronger programs, variations of the following were routine each time the teens met: 1) a check-in, 2) an ice breaker/introductory activity, 3) the main activity, 4) reflection time, 5) next steps and where possible, 6) discretionary time. Before reviewing curriculum elements of several popular program models, think about your routines. Although routine activities will help the young people you are working with feel comfortable at the institution, but it is also important that the activities vary to appeal to a variety of learning styles (hands-on, experiential, cooperative learning group, etc.). Ideally, activities should be multi-disciplinary; off-site study or field trips can often support what is being learned.

1. Check-in
Check-in should not take more than 10 to 15 minutes maximum. The purpose of this activity is to greet each individual; ascertain the gestalt of the group that day—are they distracted, do they need to review what happened during the last session, are they ready to move more quickly, etc.; and take care of any business, including the day’s schedule. The young people can help with record keeping by recording attendance and filing their own forms.

2. Icebreakers, Introductory, or Warm-up Activities
Icebreaker type activities are essential at initial program sessions. They ease the transition from outside world to science center world; they build trust by allowing the participants time to get to know their peers and the adults in the program in a non-threatening way; they help set a climate that encourages the young people to experiment and play. When selecting an icebreaker, make sure you are comfortable facilitating it.

Although icebreakers are more useful at the onset of a program, there are well-designed and more complex warm-ups that help the participants get to know each other on a more profound level. Intersperse these throughout the rest of the year. When the group isn’t doing ice-breakers, use this time to review activities from the last session that may inform or set the stage for the activities that the teens will be doing that day. Otherwise, use a warm-up activity that sets the stage for the main activity.

To find icebreakers for your youth programs:
http://www.group-games.com/category/ice-breakers
http://wilderdom.com/games/Icebreakers.html

3. Main Activity
What experiences and skills will your young people need in order to achieve each of the program’s desired outcomes? Those experiences and the resulting skills, once identified, are gained through carefully crafted, sequenced activities, called a curriculum. Just as the desired participant outcomes for work-based programs will be very different from the hoped-for outcomes of an enrichment program, so must the activities and ways of introducing them be tailored to participant ages and desired outcomes. Introducing an activity that provides teens with practice in asking exhibit visitors open-ended questions, or an activity that prepares them to do a particular demonstration will require teaching strategies unique to skills developed.
**Guidelines for Main Activities**

Regardless of the program type, these general guidelines can be helpful. Before the activity, the leader:

- Is thoroughly familiar with the directions and has practiced the activity beforehand so the activity flows smoothly
- Has related the activity to science center exhibits/collections when possible

During the activity, the leader:

- Gives clear directions to every participant before beginning the activity
  - With younger teens, begin the activity with them and walk them through the process; this will ensure less confusion and will make the activity run more smoothly and quickly
- Encourages all group members to participate with an open mind; no one should feel left out or inadequate in any way
- Is enthusiastic about the activity

Of course, as your teens become more experienced, the main activity for the day will extend beyond the time in the “inner circle” with you to the work they do with visitors, community groups or in other departments.

**4. Reflection**

Follow each activity with some type of closure or reflection process. There are several goals beyond mastering the content and having a good time for each activity. Participants are also building trust, relationships and a culture of sharing. As the young people reflect on their experiences, you can also use this time to assess the success of the activity. Be ready to initiate the reflection with a well-chosen question, a short questionnaire, small group discussion, etc.

**Journals:** Journaling is an essential tool for students to enhance their writing skills. A few programs have begun to experiment with online journals or blogging, but handwritten journals still seem to be preferred by programs that not only place a high value on reflective writing as a tool for personal growth, but have sufficient staff to maintain the journaling component once it is established. Regular reading of participants’ blogs and journals can give program staff a better idea of how individual participants are experiencing the activities, relationships and challenges.

**Journal Writing TIPS:**

- Brainstorm with teens on a list of potential topics for journal entries
- Work with teens to write a list of dos and don’ts for journal writing, e.g. always start with an entry with time and place
- Don’t focus on grammar or punctuation
- Instill a sense of ownership by encouraging the teens to decorate their journals
- Establish a schedule for entries and encourage the use of pictures and other forms of expression in the journal
- Establish a dialogue with the teens through their journals that is sincere and prompt
- Reinforce the importance of privacy by designating a secure place to keep the journals
- Recognize that occasionally a young person will make a journal entry that he or she wishes to keep completely private; allow teens to fold and staple shut any page that is not to be read
- Respond to every entry, even if your response is brief
- Allocating time each day for journal writing can be difficult, particularly if your program is already under time constraints; build reflection time into the program design as part of the routine
Dialogue journals: This type of journaling can provide a tremendous amount of insight into the participants of a youth program and the program itself. A dialogue journal is an ongoing, private conversation, written not spoken, between you, the program leader and a young person. The role of the program leader is pivotal since his/her responses are often the source of motivation for the writer to continue writing. The benefits of responding to each student’s journal entry far outweigh the drawbacks that might appear. Once a routine has been established and the writer understands that his/her writing will elicit a response, participants will commit their efforts to writing something of substance. Having another person respond to a piece of writing in a non-judgmental manner is exhilarating, a kind of excitement that is not that dissimilar to receiving a letter from a friend. This commitment can be parlayed into other aspects of the youth program. The sense of being someone who matters will be reflected in the caliber of the participant’s performance on non-writing tasks and activities.

Journal writing should be kept simple, with as few rules as possible and prompt responses from staff. Since journals are normally personal, a great deal of time should be given to laying the ground rules for the journal writing/reading process. Youth participants should feel confident that though staff will be collecting and reading the journals, they will not share, by name, any information learned through the journals with other participants.

Finally, you should be aware of the wide range in degree of formal English language mastery that you are likely to find among your participants. Some adolescents have difficulty expressing themselves and their increased self-consciousness only exacerbates their unwillingness to take risks. Teens from other countries have not only the affective issues inherent to their developmental stage, but may also have numerous explicit and implicit obstacles that must be overcome in order to express themselves comfortably. When learning a new language, there is always a disparity between one’s comprehension of what is read and heard and what one can say. Journals, particularly dialogue journals, can provide the English as a Second Language (ESL) learner a more comfortable way to express him/herself. The stigma of saying something inappropriate or inappropriately is alleviated, and the writer will take more cognitive (such as analysis, synthesis, etc.) risks as a result.

5. Next Steps
What happens next will be determined by what occurred during that day’s activities and what’s scheduled to happen during the next meeting. Even if you’re asking the teens to prepare for or bring something with them to the next meeting, avoid using the term “homework.” Make the instructions clear and the activity doable, i.e. it shouldn’t require any money, equipment (unless you’re providing it) or time beyond the hours of the program.

6. Discretionary Time
The session, whether working with younger or older adolescents, should have discretionary time built in so that the teens can continue a project they had previously begun or simply socialize (after all, they are teens). Initially, this discretionary time should be structured with clear limits. This can ensure that the young people will have the time to inquire, investigate and question on their own terms. It will give them the opportunity to try, the freedom to fail and the courage to try again.
SPECIFIC CURRICULUM CONSIDERATIONS FOR POPULAR PROGRAMS

EXPLAINER PROGRAM BASICS

Explainers must have multiple opportunities to learn the science content within the exhibit or objects with which they’ll be working. Support their learning by arranging meetings/discussions with scientists, challenging them to conduct their own research, and providing substantive training in related topics. Give them time to work with the exhibit so that they actually understand what they are talking about. You may have to start them out with a prepared script or list of probing questions, but they’ll soon find a way to make it their own.

Public speaking skills are critical for Explainers. Once they have become comfortable with the content, they will need lots of opportunities to practice and develop their own style of presenting information. Constructive peer critiques are very useful tools for this group of young people. This may be the first time that many teens will be in the public eye and the issue of what is and is not appropriate will need to be discussed on a regular basis.

Develop role plays of possible scenarios (using edited real-life museum-based occurrences is a good strategy). Veteran Explainers can also help new Explainers by mentoring them or leading small group training sessions.

Some programs give new Explainers three-month assignments, rotating their exhibit assignments throughout the year; other programs schedule explainers by the semester or by the year, depending on the number of exhibits that are available. Science centers with highly experienced Explainers may rotate as frequently as every two hours to avoid boredom. If possible, young people should be scheduled to work on the floor at least once a week for at least 3-4 hours at a time or even a full day if they are mature enough to remain attentive to both the exhibits and the visitors’ needs the entire time.

Teens will probably need help in developing a work ethic, which includes:
- committing to working when they are scheduled
- finding a replacement and notifying their supervisor if they can’t make it to work
- punctuality and doing their work well and in a timely manner

The Explainer Program at the Exploratorium in San Francisco, CA breaks “explaining” down into levels:

**Level 1: Being There**
Simply being present in an exhibit section sends the message to visitors that there are explainers on staff who are available for help or to answer questions

**Level 2: Modeling**
Demonstrating the various ways in which the exhibits can be used and played with shows visitors, in a non-pedantic way, how they might also interact with them.

**Level 3: Facilitation**
Respectfully watching and listening to visitors can provide entry points for explainers to begin conversations and occasionally show visitors “which button to push”

**Level 4: Explaining**
Approaching visitors who are interacting with exhibits that explainers are well-versed in and excited about provides explainers with opportunities to try out what they have learned and practice interacting with a variety of people.
In general, working with the public can be a fun and rewarding experience, but there will be days when it is more challenging. So, Explainers will also need to:

- develop visitor service skills for their role as representatives of the science center or museum
- understand the importance of their role in the success of the science center as a system
- learn how to encourage the learning of others by asking questions that promote inquiry
- learn how to listen
- know what their responsibilities and the limits are
- know when and where it’s appropriate to vent their frustrations

Curriculum Ideas for Explainer Programs:

- Science-related topics that are reflected in the exhibits
- Developing and honing interpersonal skills
- Techniques to promote inquiry
- SCANS skills, including technology, systems, resource, interpersonal and information skills
- Educational and career planning
- Visitor service

If you are designing a summer program that involves young people for extended periods, be sure to vary the activities to maintain their enthusiasm.

**DEMONSTRATOR PROGRAM BASICS**

Because learning the science content, public speaking and quality visitor service are critical prerequisites, teen Demonstrators have usually had extensive experience as Explainers. Now, however their training must enable them to become very comfortable with a particular activity, ideally one with interesting objects, designed to attract and engage an audience.

A Demonstrator will probably have a larger audience than an Explainer, must hold the audience’s attention for a longer period of time and engage the audience in a different way. The teens will need ample time to master not only the science concepts and the activity, but also pedagogy appropriate for these informal learning sessions. Questioning, probing and listening are all important parts of demonstrating. If you need help with this, consider inviting experienced museum educator to assist with this part of the training. It’s not very likely that many teens will have had the chance to learn how to listen.

The teens will need training activities that will help them learn how to respond appropriately and optimally to different people. Teens can begin to become reflective about themselves and how they learn as a path into learning about the different learning styles of others. Practice sessions (videotaped, if possible), with critical feedback from peers and staff are essential to the development of a successful Demonstrator program. Be sure to identify an adult staff resource person to provide ongoing support for each demonstration by providing the necessary information and materials.
Curriculum Ideas for Demonstrator Programs:
- Science-related topics that are reflected in the exhibits
- Questioning techniques
- Diversity
- Conflict resolution; explore issues like right vs. wrong ideas
- Visitor service
- Allocating resources; time, money, materials, staff, space-skills
- Interpersonal skills; public speaking, handling questions tactfully, professional demeanor
- Information skills; researching the science behind the demonstration

APPRENTICESHIP AND INTERNSHIP PROGRAM BASICS

The training for this type of employment is highly individualized and will probably be conducted by the teen’s supervisor in the specific department where the teen is assigned. Your role in this type of program will be one of a mentor, confidante (for both the teens and the department supervisors), coordinator and source of support. As you recruit other science center staff to work with teens, remember that these department staff:
- Must be comfortable with young people and willing to connect with them on a personal level
- May need your help understanding how to set reasonable standards
- Should know what your expectations, the teen’s expectations and his/her own expectations are in working with an apprentice or intern
- May need some insight on how to teach teens the skills they will need
- Need to understand what constitutes meaningful work and, more importantly, what does not
- Must know that they can approach you for help, advice and general support
- Should expect regular meetings with you

The young person’s internship supervisor may need assistance in developing an appropriate assessment tool to guide their work with the teen. A Resource: YouthALIVE! in the Workplace: A Workskills Manual can be found in Appendix V of this handbook. Each of the five YouthALIVE! in the Workplace modules as well as its Appendix C all include assessment tools for work-based youth programs in museums and science centers.

Pay close attention to the training of the young person to ensure that the work is meaningful. If necessary, gently remind the supervisor that the internship program is not a source of cheap labor.

This type of placement usually lasts a semester or a summer and is reserved for teens age 16 and older. However, depending on the situation, these placements may continue for a full year or more. Some internships have led to jobs for teens after graduation.
Although teens will still need your support, they need to understand that this is a unique opportunity for them and for the youth program itself. In some instances they’ll be ambassadors for the program in other departments. Before assigning teens, make sure they completely understand:

- The responsibilities of working in a different department
- How it will differ and resemble their previous experiences
- Everyone’s expectations, including their own
- The importance of seeking regular feedback on their job performance
- Their responsibility in fulfilling their tasks
- To ask for clarification when they’re unclear on how to complete an assignment

Regular check-ins with the teens, especially on a one-to-one basis, are particularly important in this type of program. While many issues can be dealt with in a group setting, there also may be issues that will require tact and discretion. Make sure the teens know that in addition to regular gatherings, they can meet with you whenever they need to discuss an issue or problem.

Workshop Curriculum Ideas for Interns:

- Science-related topics that are reflected in the exhibits
- Educational and career planning
- Structure and function of the host department
- Roles of various department members, including the interns
- SCANS skills: resource allocation, interpersonal relations, information acquisition and management, technology use, and understanding systems

CROSS-AGE TEACHING PROGRAM BASICS

Cross-Age teaching programs have multiple benefits: younger children from community programs or elementary school classes have role models who are cool and smart. They are exploring science under the leadership of “cool” teens who have been motivated to master science concepts so that they can do well with their young charges. Out of necessity these programs must have a multi-faceted curriculum that meets the developmental and workforce preparation needs of the teens, prepares them to lead informal science activities with younger children and fully engages all the younger children and the teens in interesting science activities.

Like other work-based models in museums, these programs provide opportunities to learn new skills and information while helping others. Those planning cross-age teaching programs, should consider the above described ingredients, the four core content components and relevant elements found in explainer and demonstrator programs (i.e. science content, public speaking, teaching and learning, and work ethic). However particular care must be made to structure the program so that preparation for their role as “teachers” is thoroughly integrated into the schedule. Beyond the science concepts, the teens will need training in pedagogy – asking questions, listening, responding to questions, giving feedback, working with materials or objects and group or class management. They will need to develop an awareness of factors that contribute to a positive learning experience for the age group of children with whom they will be working.

If the teens are to be successful “teachers”, their training should engage them in science in a way that is consistent with the National Science Standards and best practices in informal science education. (A science museum educator can be a great resource for this.) Teens have been most successful where their science content workshop leader has been consistent
in utilizing an inquiry approach when introducing the teens to science concepts, encouraging them to ask questions and engaging them in hands-on activities in search of answers. This gives the teens a set of expectations and a model for their own teaching behavior when working with the children.

For example, the Exploratorium’s website is an excellent staff resource for exploring inquiry as an approach to teaching. 
http://www.exploratorium.edu/ifi/workshops/index.html

Practice is essential and critical feedback from peers and staff must be built into the practice sessions. After participating in a science content workshop, teens in one program work in pairs, alternating as “teacher” and “learner” facilitating and exploring the new hands-on activity. In another program individual teens take turns “teaching” the group of peers, using the discussion afterwards to help improve their presentations.

Unlike Explainer and Demonstrator programs, there is no automatic audience of museum visitors for the teen “teachers” in cross-age teaching programs. Unless the teens serve as teaching assistants in museum-based programs for children, their audience must be recruited from organizations out in the community. Usually program staff work out agreements or partnerships with the staff of afterschool and summer programs of community-based organizations or with elementary school principals. This means that the teens’ training in allocating resources, interpersonal skills and understanding systems might extend beyond working in the museum to working with community organizations or schools.

A resource:
YouthALIVE! in the Workplace: A Workskills Manual for work-based youth programs includes training activities and materials for youth in museums and science centers. See Appendix V of this handbook.

Sample Group Reflection questions:
• How did it go today?
• How would you rate the day on a scale of 1-10?
• What worked well for you and what did not?
• What do you think the children/visitors learned from their time with you?
• What would you do differently next time?
• What do you need more help with?

Finally, in addition to the personal reflection of journaling or blogging, since cross-age teaching is a communal endeavor, it benefits from communal reflection. Providing structured opportunities for teens to think about and discuss the work that they have done can strengthen them as budding informal science teachers, and enables them to gain valuable insight from their program leaders who have observed their sessions with the children.
**Teens Teaching in St. Louis**

Teens participating in the St. Louis Science Center’s “Youth Exploring Science” work in the Science After School program which has been operating in conjunction with the Science Center’s teen program for nine years. These YES teens bring inquiry-based science activities to local schools and public libraries throughout the year.

http://www.youthexploringscience.com/programs

See Appendix III of this handbook for a profile of the YES Teen Program. Appendix IV includes an in-depth look at this and several other programs.

**AS TEENS MATURE...**

Continually ask yourself the question, “Can a young person do this?”, and if the answer is yes—let them! Once teens have mastered the first phases of working in a museum or science center, many programs are structured to offer expanded responsibilities like assisting with birthday parties, opening events and community outreach activities, in addition to or instead of, their regular floor assignments.

Career Ladders which are not envisioned when an institution’s first youth program is being planned, often evolve over several years as programs seek to match the young people’s growing maturity, expertise and commitment to the science center or museum.

Examples of career ladders in youth programs:

Philadelphia Zoo: Junior Apprentice Program (JZAP)
http://www2.philadelphiazoo.org/participate/Volunteer/Teens/Apprentice-Program.htm

New Jersey Academy for Aquatic Sciences: CAUSE Program
http://www.njaquarium.org/community/cause.html

New York Hall of Science: Science Career Ladder
http://www.nyscience.org/join_getinvolved/www.nyscience.org/SCL

In addition to models developed by these and other institutions, there are numerous ways in which the interests and skills of teens can be applied to real needs in their museums and communities. Just remember, your curriculum must always remain flexible enough to offer new challenges commensurate with the new competencies that your young people so proudly demonstrate.
Module 2: PROGRAM DESIGN

Part E: OPERATIONAL and LOGISTICAL ISSUES

OPERATIONAL AND LOGISTICAL ISSUES

SCHEDULING
SPACE
STAFFING
PREPARING THE MUSEUM
RECRUITMENT AND APPLICATION PROCESS
STIPENDS OR SCHOOL CREDIT
UNIFORMS
ADDITIONAL TRAINING
FIELD TRIPS
DISCIPLINE
PROGRAM ADVISORY COMMITTEE
RECRUITING ADVISORY COMMITTEE MEMBERS
ADVISORY COMMITTEE ETIQUETTE
ADVISORY COMMITTEE VS. ADVISORY BOARD
OPERATIONAL AND LOGISTICAL ISSUES

SCHEDULING

To develop your program, you will have to work with your community’s school schedule. Be sure to check schedules of all schools in your area as their schedules often will vary. To access public school information, call the Board of Education and request a copy of the school calendar or look for a posted calendar on the school district’s website. For parochial and charter schools, contact either the local Catholic Diocese or each individual school for their school calendar. Merge the calendar information for the schools as well as that of the science center. Highlight the days off from school and interface those with any special events the science center. Also consider outreaching to home school youth, their school calendar is often very flexible.

After merging the school calendars with the museum or science center’s schedule of major events and trends in visitor attendance, carefully look for lulls in the science center’s schedule. These lulls in the institution’s schedule may be ideal times to 1) start your program since it’s much likelier that staff will be available to assist you, 2) plan for ways in which the teens can assist during the museum’s busiest times when school is not in session and 3) schedule critical staff training time.

Programs can be organized by semesters and typically last a year or more. This type of work lends itself to weekend and summer employment. Teens generally come at least once a week for at least 2-4 hours during the school year, but work more during the summer. Some programs begin with new recruits who volunteer and build basic skills in the summer and those young people who demonstrated the most progress and competence acquire more responsibility for their demonstrations during the school year and become eligible for a small stipend.

Other programs have found that teens from low income communities need to earn money regularly. Therefore those programs are designed to offer year-round job opportunities for youth.

An example of a youth program: http://www.youthexploringscience.com/

It is important to note that when working with youth that flexibility is of utmost importance. Their schedules change continuously as do their interests. They can have a lot of commitments in school and in other organizations. If you want to keep them involved it is important to work with them and keep them engaged as much as possible.

SPACE

A space devoted to the youth programs and activities is essential, even if only used during program hours. A designated space for youth to gather and participate in program activities allows them to feel at home in the museum. Before initiating your youth program confirm what space you will be using for all your program sessions and where and how you can secure any on-going projects. Make sure the space can be kept tidy throughout the duration of the program. If it is a permanent or semi-permanent space, engage youth in how the space will be decorated.
Investigate your institution’s process for reserving additional space for special activities that might occur with your program, including youth-family meetings, training, etc. As much as possible, book your spaces at the beginning of your program.

YouthALIVE! found that while museums might have set aside any available space for the teens initially, as the programs matured, the program staff successfully advocated for a larger and more permanent space in which the teens could learn, train, work, socialize and study. Over time several (Science Museum of Minnesota, St. Louis Science Center and Lowry Park Zoo) were able to create centers dedicated to providing ample space in which teens can grow and thrive; and some teens and staff can be found in these spaces during non-program hours using the computers or other resources.

**STAFFING**

To run an effective youth program, you need resources, particularly staff support, funding and space. Hiring the right people is an essential task. Consider how many of your staff will be ‘content’ people (e.g. have a science, math, history background, etc.) and how many will have expertise in youth development and or social services/counseling. Both aspects will be critical to a well-designed staff. Allow plenty of time for ample recruiting and hiring, including the completion of background checks (required in some states for adults working with minors).

Ideally, you want to keep the ratio of youth to adults as small as possible, particularly if running any type of training program or hands-on workshop (see suggested ratios in the Models section). It is important for youth to feel connected to staff and for staff to be accessible to the youth, which can be difficult if attempting to serve large numbers of participants.

Equally important will be your plan for initial and on-going professional development for the program staff. The plan should include mechanisms for the staff to learn from each other. Remember, if you don’t plan for it, staff professional development will not happen.

**PREPARING THE MUSEUM**

Museums have not historically been places that employ teenagers in significant roles. While this is changing, it’s very important to think about your organization’s culture and how to make it a welcoming place for teen workers, as well as be mindful of current staffs’ preconceived notions about youth as co-workers.

The process for preparing staff will include formal workshops or orientations, but should also include some personal ally building across the organization. How can staff from various divisions be part of your training and acclimate teens to their new job functions, for example? How might staff from community partner organizations help you facilitate dialogue and understanding about the assets young people bring to a work environment?

It will also be important to keep staff current on the happenings of the program. Send out emails about events and activities, present information at all staff meetings (or maybe have some of your youth present at all staff meetings) and invite staff to participate in events or activities, as appropriate.
RECRUITMENT AND APPLICATION PROCESS
(See Module 2: Program Design: Part F: Implementation)

Depending on the approach you’ve selected, there may be logistical issues to address. If, for example, the application process includes interviews with teens and their families, will additional rooms need to be reserved? Will childcare be needed to ensure that parents/guardians can attend an orientation or interview with their teen?

STIPENDS OR SCHOOL CREDIT

For many young people the idea of a stipend is equivalent to their first paid employment. This is a real motivator for young people who have access to relatively few resources. If young people are to receive a stipend, work with human resources or other appropriate department to set up a payment schedule and procedures, before the start of the program. If students are to receive school credit, work with your school partner to complete those arrangements prior to the advertising of the program and file the dated written agreement once it has been signed by an authorized representative of the school district administration.

UNIFORMS

In most science centers and museums, teens working with the public have some type of uniform that identifies them as science center or junior staff. The uniform could be the same uniform that the staff uses or a tee-shirt, smock or apron that’s been modified for the teen program. For the teen, and the public, the uniform validates the young person’s role and worth to the science center, and identifies him/her as a part of the internal science center community. It is also important that there is internal recognition of the youth. This could be lapel pins that the youth can wear on lanyards. The pins could indicate what parts of the program they have completed.

ADDITIONAL TRAINING

Ongoing training for participants shows the youth that you are invested in them. Some programs arrange to have the young people participate in training workshops for volunteers, which contributes to a sense of community and camaraderie with other volunteers. Youth program staff generally schedules intensive training and with many opportunities for practice before the young people are assigned to an exhibit, demonstration or class. Sometimes they are allowed to shadow veteran staff or volunteers as they do their job. In reflection sessions, teens may constructively critique each other’s practice presentations and discuss their daily experiences in the exhibit hall.

FIELD TRIPS

Because the energy level of young adolescents often approaches warp speed, they’ll need a lot of variety and room to move. Occasional field trips to other cultural institutions, nature centers or special events may absorb some of this energy while allowing participants to explore environments and new ideas. Factor in the availability and cost of transportation when selecting field trip destinations.

Whenever you leave the science center with the young people, you MUST have a sufficient number of adult chaperones and signed permission slips from each participant’s guardian/parent. If you plan to have off-site outings, identify the desired outcomes for the
trip’s participants. Then make your plans and reservations. Collect all permission slips well in advance. Check with your science center about liability coverage on youth participants who go off-site on a science center-sponsored outing.

**DISCIPLINE**

For your program to succeed, the young people will have to commit to respecting one another, you, the visitors and the science center. The orientation session and program handbook should be explicit about basic rules and expectations. (See Appendix II for sample program handbook and orientation session materials). It is possible that there will be some young people who are still too immature to handle these expectations. Talk to this individual directly. There may be other issues outside of the museum that they are struggling with. Set up a plan with them to help change the behavior. Enlist the support of other participants to try to help the less mature teens reach a point where they can contribute positively. If peer support doesn’t yield any results, talk the situation over with your community partner and arrange a meeting with the teen’s guardian/parent and the teen to discuss the problem. Assign appropriate consequences when needed. Give them several chances, possibly including suspension, before asking them to leave the program.

Some programs have found it helpful (and empowering) to include youth in the development of group rules for behavior and the consequences of not adhering to those behaviors. This is something you may want to consider, especially for programs engaging older youth.

**PROGRAM ADVISORY COMMITTEE**

A program advisory committee can help you with: developing strategies to effectively recruit, work with and retain teens; understanding the political aspects of the community that affects your work; identifying allies who can help the program and who could connect you with potential future funders. Committed advisors can be great advocates for your program.

Try to keep the group small, diverse, productive and influential. There should be no more than 10-12 people on an advisory committee, including those who assisted in planning the program. Seldom will all members be available to attend every meeting, so be prepared to work with smaller numbers than expected.

**RECRUITING ADVISORY COMMITTEE MEMBERS**

If there are committee members whom you’d like to have on the committee, but their schedule prohibits their participation, consider asking if they could review program plans and give you feedback by telephone or participate more fully in the future. Recruit individuals who represent the community that you'd like to serve. This group of potential candidates can include parents, young people, representatives from youth service and other community-based organizations, local businesses, the school system, larger businesses, etc. Before asking an individual to join your advisory committee, try to assess that person probable commitment to the project/program and ability to be productive, given his/her personality and schedule. Consider asking fellow community members for input and recommendations.

Be prepared to pitch your advisory committee as an important and cutting-edge committee. People, in general, are over-worked, so be specific about what you’ll need from the advisors.
and how much of their time you think you’ll need from them. Have a calendar of meetings ready to give to each potential advisory committee member to help each member to budget their time accordingly.

**ADVISORY COMMITTEE ETIQUETTE**

Report on the program’s progress and success to the committee via post or email. Keep them apprised on funding situations. In the case of rotating advisory committees, consider a small thank you ceremony for departing advisory committee members. Take every opportunity to laud their participation by sending a notice to their place of worship, professional organizations, etc. Extend an open invitation to members to come and see the young people in action at the museum. If an advisory committee member has poor attendance, contact him/her to determine whether his/her schedule prevents participation. Let him/her know you really need the help and ask for specific solutions to the conflicts.

**ADVISORY COMMITTEE VS. ADVISORY BOARD**

Our discussion thus far has been centered on seeking the advice of knowledgeable others as you plan and begin a new youth program. However, in the Fundraising Module of this handbook, we discuss formal Advisory Boards. As your program matures and succeeds, you may wish to seek funding from large private foundations or the National Science Foundation (Informal Science Division). In that case, you may find it wise to transition from a less formal advisory committee comprised of local people, to a more formal Advisory Board which includes a group of professionals who may live outside of your geographical area, but bring a diversity of expertise to the project for which you seek funding. If you do decide to form a national Advisory Board for a particular project in your youth program, remember that your program’s local advisors can be your strongest, ongoing allies and advocates. Find ways to keep them updated, involved and acknowledged.
Module 2: PROGRAM DESIGN

Part F: IMPLEMENTATION

IDENTIFYING AND RECRUITING YOUTH PARTICIPANTS

CREATING THE APPLICATION

SELECTION CONSIDERATIONS

RECRUITING YOUTH
    Interviews

TRANSPORTATION

ESTABLISHING EXPECTATIONS

CLIMATE BUILDING

ORIENTATION PERIOD

THE PROGRAM HANDBOOK

FAMILY/PARENT INVOLVEMENT

ACKNOWLEDGEMENT OF ACHIEVEMENT

YOUTH ADVISORY COUNCIL

DOCUMENT, DOCUMENT, DOCUMENT
    Participant Documentation
    Administrative Documentation
    Program Documentation
    Media-Related Documentation
    Developing an Evaluation Plan

MARKETING YOUR PROGRAM

PROGRAM IMPLEMENTATION RESOURCES
You have community partners, funding, staff, a program outline, space, a schedule and the support of your administration. Now you need your teens!

IDENTIFYING AND RECRUITING YOUTH PARTICIPANTS

How do you recruit your teens? Use your community partners to reach teens beyond your typical science center membership and visitors. They are a vital resource to finding teens in underserved/underrepresented areas of your community and those teens are, in general, more in need of youth programming than others. Before you begin recruiting you need to:

- Be clear about the criteria used to choose program participants and how this criteria was developed through input from your advisory committee, youth focus groups, science center staff and community partners
- Specify the benefits of the program and how they will effect young people and community; For example, educational enrichment for younger children will help boost science test scores and encourages creativity in science
- Highlight the additional benefit of knowledgeable teens able to bring activities learned in the science center back to the CBO to mentor younger teens
- Call upon your allies to help establish trust with teens and follow-up conversations with a thank you call or a note

If you are establishing a work-based learning or youth employment program, use a printed position description as one of your recruiting tools. While preparing the position description for your program, include the number of openings that you are seeking to fill.

CREATING THE APPLICATION

For many teens, filling out the youth programs application will be their first interaction with the working world. It is an opportunity for them to learn what employers are looking for in an applicant. Be specific in your instructions and say exactly what you want, i.e., complete all sections, application should look neat, basic information, etc. You will need each teen’s contact information including full name, home address, mailing address, phone number(s), email address, emergency contact information (name of adult, relationship, phone number) and demographic information such as date of birth, gender and race/ethnic background.

Other information to include is past volunteer/work experience, community organization affiliation and school name. Have a space for a parent/guardian signature, so that you know that an adult is aware that this teen has applied to your program.

TIP:
Sometimes families may have to move several times within a year or two. To increase the likelihood of remaining in contact with participants after they leave the program, some program leaders also request the name, address and phone number for a relative who is not likely to move out of the area.

The New Jersey Academy for Aquatic Science not only invites Camden area teens to visit the website for its Community and Urban Science Enrichment Program (CAUSE), http://www.njaas.org/Community/CAUSE.html, and also posts a fact sheet and application for interested teens.
Essays: It is also helpful to have applicants answer a few essay-type questions. Essays could be: What is your favorite subject at school? Why? What career(s) are you interested in? How do you think being a part of the Museum program will help you prepare for your future career? etc. Essay questions are what an adult would put in a cover letter. Because teens will have little to no experience with cover letters, essays are a good substitute while helping them through the cover letter writing process. Be lenient in evaluating the essay answers—for some teens, it is an accomplishment that they answered them at all! You can use these applications in a future workshop, after the teens have been accepted into the program by helping them make corrections and necessary improvements. By this time they will have a better idea of what an application should look like.

Recommendations: If the teens are not recommended by one of your community partners, you may wish to have the teen include a written recommendation with his/her application. This recommendation should come from an adult who is not related to the teen, preferably a teacher, coach or religious leader. Since the teen has limited or no work experience, this recommendation should focus on how well the adult thinks this teen will do in your program, what she/he may contribute and what she/he stands to benefit from being involved with the museum.


Deadlines: Make sure that the application deadline is clearly indicated. If you have rolling enrollment, it is helpful to give the teen a deadline of three weeks to return the completed application, so they feel some urgency to complete the application in a timely manner. Also be very clear about how the application is to be returned to you, whether by mail, drop off, fax, email or through a community organization.

Sample application forms: http://www.nyscience.org/media/file/Explainerintern.pdf

SELECTION CONSIDERATIONS

Interest in museums? Desire for employment? Interest in science, math or technology? Commitment to education? Age and/or grade? Demographic balance? Social skills? Neighborhood? Need for support? All of these?

When asked about their selection considerations, youth program leaders cited two or more of the following:
- Interest in museum
- Commitment to employment
- Interest in science
- Potential for personal growth
- Social skills
- Interest in new experiences
- Openness to working with people of diverse backgrounds and ages

Some programs look for teens who express an interest in the museum, but that is not a sufficient criterion for program leaders who know that if you have never spent time in a science center or museum, you would not have had an opportunity to develop that kind of
interest. In fact, what may be much more apparent is a teen’s strong desire for employment.

For museums committed to reaching underserved teens, a commitment to learning to be a good employee is sufficient, even without an initial passion for the museum. In either case, the teens must be ready for new responsibilities. Experienced youth program leaders report that they look for teens for whom participating in the program will be a good experience and whom the program could help move closer to a “professional” future. These leaders try to look at the “whole child” before making a selection.

The teens’ interview responses, staff observations of teens’ reactions during orientation and training sessions and a teen’s interactions with other youth are indicators used by staff to identify the young people who would fit best into the program. Most programs also require written consent from a parent or guardian.

The above discussion of selection criteria is a reminder that the criteria must fit your program. If one of your goals is high school graduation for every participant, then commitment to long-term participation is essential. When filling internship positions, you would want to think about how well the applicant will fit into a particular department. For teaching assistants—does the applicant enjoy being with children? For Explainers—is the applicant willing to work on communication skills and science content mastery?

For programs that seek diversity and balance among participants, there are other considerations. While some leaders seek a balance between high academic achievers and average or underachievers; others seek to include teens from a range of socio-economic levels; and others desire representation from a number of high schools or communities. Most programs that began as YouthALIVE! sites focused primarily on recruiting teens who had very few prior opportunities to interact with the world beyond their homes, schools or immediate neighborhoods. As a result, greater diversity was reflected in the culture of the museum and in the experiences of teens.

One program director explained her program’s selection criteria as follows:

“Youth must be between the ages of 13 and 18 and be enrolled in a school. Beyond that, our biggest qualifying factor is their commitment to the program. Since our goal is to retain each student until high school graduation, their interest and dedication to the program is of utmost importance. The next thing we look at is their openness to diversity and new opportunities.

Being that we do a lot of work that requires the youth to ‘step outside their comfort zone,’ being open to new things is extremely important. We gage this criteria based on their responses to interview questions. Once general orientation begins the students know that they are still under review and are not automatically accepted into the program.”

Benefits of Programs that Match the Needs of the Participants:

- Very shy teens have credited Explainer training as helping them gain the confidence needed to converse with museum visitors
- Explainer training has helped extroverted teens focus and refine their social skills
- Teens who have little family support have said that the people of the program are like a family to them
- Teens with supportive families have later recruited younger siblings into the program
RECRUITING YOUTH

Before your visit: Develop eye-catching posters or fliers that describe the program, the benefits of participating, where to get more information and announce your imminent visit; provide your recruiting partner with clear responses to frequently asked questions; and compile application packets that can be distributed and completed while you are there, if time permits.

During your visit: Have all your forms ready to distribute. Your presentation is an infomercial—keep it upbeat, interactive and leave enough time for a question and answer session.

After your visit: Review the applications ASAP. If any of the applications are incomplete, try to notify the applicant (either directly or through the partner). Be aware that there will probably be some applicants who would be excellent program participants, but first may need assistance with the application. Choose a core group of participants and a group of alternates. (Plan for attrition—the alternates can go through the training and if one of the core group drops out, the alternate will be ready to take their place); notify everyone who applied of their status and thank them all for their interest. Be very clear with applicants who were not chosen about the criteria you used in your selection process. This is a very important point, because it sets the tone for how all of the stakeholders will perceive who the program is designed to serve.

Interviews

An interview is a chance for you to get to know each applicant better. In the interview, some qualities will come through that were not apparent in the application. Some applicants express themselves better face-to-face than they do in writing. The interview is also a chance for the teen to get a better sense of what the program is about. Interview all of the applicants if possible. When contacting the teen to schedule the interview, be explicit about what to expect (e.g. “The interview will last 30 minutes and we will give you information about the program and ask you questions about why you want to be involved what makes you a good candidate.”; “Dress professionally—no baggy jeans or tee shirts”), how to gain admittance to the museum and where to meet.

Group Interviews: Perhaps one of the most efficient ways to learn how applicants function in a group setting might be to invite all interested applicants to a well-planned orientation meeting. Have one or two group activities that will enable you to evaluate some of the qualities you are looking for. During the activities, keep an eye out for how well each teen works in a group, who is a natural leader, who tends to shy away from the group. Try to make the activities representative of what the teens can expect in the program.

At the end of the session, be very clear about what the next steps are, and when the applicants can expect to hear back from you. Give them your business card so they can contact you if they have any questions.

Teen Involvement: Current program participants are excellent interviewers. Try to have at least one teen on the interview team. Meet with the interview team teen(s) before the interview to walk them through how the interview will proceed and give them a chance to review applications. During the interview, encourage the teen interviewer(s) to talk about their experiences in the program—what was the hardest part about the program, what was
their favorite part and why do they stay involved. Talk with the teens afterwards to get their feedback on how to improve the interview process and evaluate the candidate.

**Individual interviews:** If you have prepared questions, give the applicant a chance to quickly read through them before you begin the interview. This will help him/her relax since she/he will know what questions you will ask.

**TRANSPORTATION**

Since young people will need a safe and reliable way to get to and from the science center, you will have to address the issue of transportation – unless the targeted underserved community is within walking distance of the science center.

If the science center can't provide transportation, find out:

- If any of your community partners have a bus that will transport your kids
- If there is a corporate group that allows their company bus to be used on weekends
- Public transportation routes and fares

If you will be providing transportation, use one session with your young people before the program begins to help establish rules for riding the bus. Think creatively, discuss strategies with your partners and never lose sight of your goals.
ESTABLISHING EXPECTATIONS

CLIMATE BUILDING

Cultivate a climate for thinking and mutual respect from the very first day by modeling the behavior that you expect of the teens. One of the easiest ways to do this is to simply listen to them and hear what they have to say. Establish a policy about put downs, insults and hurtful comments early on. Appreciate their individuality and openness and encourage discussions. Emphasize teamwork and learning. Nurture their confidence and give feedback that will encourage them to try again. Building rapport takes time, but it will be time well spent. State your expectations and elicit theirs.

Some of the young participants may attend large, impersonal schools lacking the resources and time to encourage students’ thinking, creativity and reflection. For some young people experiences in unsupportive educational environments can become roadblocks to learning. You, as director of the program, and other staff may be able to help the student remove, or at least learn to negotiate, these roadblocks. You may be the first adult outside of their family who helps the young person discover that s/he really is smart.

In a professional setting, youth should be expected to maintain a certain standard of decorum, but that standard needs to be consistent with their developmental capabilities. It is important that staff discuss what can be realistically expected of youth and develop policies and guidelines accordingly. To introduce the parameters in which young people have to operate, create a comprehensive training periods.

ORIENTATION PERIOD

Although the initial orientation is finite, the process continues as the program evolves with the growing abilities of the teens and the shifting needs of the science center. Many programs are structured to offer opportunities for promotions as the young people develop skills and demonstrate job competency. Whether or not your museum or science center offers a structured career ladder for young people, during the initial expectations, and procedures of your program; be specific of how your program will help them in the future. This gives them something to look forward to as they mature in the program.

Training is a cyclical process that builds on the knowledge that the young person brings with him or her. Although variety is the spice of life, especially the lives of teens, important information needs to be reiterated periodically. Generally speaking, younger adolescents will need to hear the same information in different ways more often than older teens. Younger teens will also require more support when there are other factors vying for their attention. So, the first few weeks of the program will probably be rife with distractions as the young people become acquainted with each other and their new surroundings.

Try not to introduce complex projects too soon, which for younger teens would be before two or three weeks and at least one or two weeks for older teens. Use this time to build camaraderie, familiarity with the science center environment and a sense of what’s appropriate.
THE PROGRAM HANDBOOK

Don’t assume that the young people coming into your program will know what is and isn’t appropriate work place behavior. Developmentally appropriate guidelines need to be clearly stated at the very beginning of the program and constantly reinforced. For this purpose, a Program Handbook might prove helpful.

Every organization has some sort of manual or handbook that explains the mission, history, rules, expectations, etc. of the organization. A good handbook helps everyone understand what’s expected of them to do their job more easily. This one document can contribute directly to your program’s success. Though your science center’s handbook is probably a little too technical for the young people in the program, you can modify it into a teen-friendly version. If your science center has a human resources office, ask them to peruse your handbook and give you feedback on whether or not it’s complete. Keep the text short and simple. Avoid jargon and technical phrases.

Your handbook should contain the following sections:

Policies
This section of the handbook should explain the science center’s policies in such a way that they make sense to someone who has never had a job before. Include a short explanation as to why each policy is important and, most importantly, a clear explanation of the consequences of not following the policies. Issues you should cover are:

- Punctuality and procedures for notifying staff of future absences
- Procedures for arriving to and departing from the science center, specifically, arriving too early and not being picked up at the end of the day
- Rules about food and drink in the science center, including gum chewing
- What the teens need to do to get their paycheck
- Which sessions are mandatory
- Emergency procedures for the science center
- Equipment use, including appropriate telephone, cell phone, beeper, etc., usage
- Appropriate conduct, including dress code (specifically cite what is and isn’t appropriate, including jewelry), exhibit floor dress code, proper language, rules about smoking and visiting friends and family

Err on the side of redundancy about what is and isn’t appropriate. Emphasize that if they are not sure about what is appropriate, they should ask you. To encourage this level of openness, treat each question as legitimate without being judgmental. It is likely that if one young person has a question, then others will also.

Science Center Information
Although different program’s handbooks detail different information, in general, they all include:

- Science center hours of operation
- A floor plan with brief description of exhibits and location of amenities
- Procedures for helping lost people and helping people find lost things
- Emergency procedures
- An organizational chart that explains who does what and how things are decided
- Some programs give each young person a loose-leaf binder (that stays at the science center) in which to keep important information
FAMILY/PARENT INVOLVEMENT

For its Galaxy Explorers program, the Chabot Space and Science Center in Oakland, CA created a multipurpose form for parents. It includes requests for emergency contact information, participation permission and essential medical information. [http://www.galaxyexplorers.org/download/GEemergencyform.pdf](http://www.galaxyexplorers.org/download/GEemergencyform.pdf)

Another issue to consider is how to welcome the parents of these young people. They will want to know what you have planned for their children. They want to know what the teens will be learning and they want to know that they will be safe. Once a teen has been accepted into your program, you need to provide the following information to the teens’ parents/guardians for their reference. Include:

- How to get in touch with you
- How to reach the teen while he or she is at the science center
- A simplified calendar of when the program meets
- A short welcome letter from the science center’s director
- A brief description of what the teens will be doing in the program and why it’s such a good idea for them to be in the program
- Program policies and grounds for dismissal

Many of the museums in the YouthALIVE! Initiative found that potluck suppers or other food-centered social events are a great way to welcome and inform parents. When planning these festivities include the younger siblings of the youth participants. Many families will not be able to attend unless they can bring the whole family. These occasions are wonderful opportunities to let the families see what your museum has to offer. In the past, program directors have discovered that many of the families had never been inside the museum.

ACKNOWLEDGEMENT OF ACHIEVEMENT

Youth who have excelled in the program should be acknowledged and rewarded by being handed increasing levels of responsibility. Another suggestion to acknowledge achievements is to have an end of the year celebration and give out certificates/awards to highlight each teen’s accomplishment. One program director reported, “We have a large celebration with guest speakers, dinner, etc., this also gives me an opportunity to meet family members and build a stronger connection with teens and their involvement with the science center.”

YOUTH ADVISORY COUNCIL

One fruitful way of acknowledging high achieving youth is through the establishment of a Youth Advisory Council. Several YouthALIVE! programs found Youth Advisory Councils to be quite effective in developing youth leadership skills and youth investment in science center operations. In Ft. Lauderdale’s Museum of Discovery and Science, the Youth Advisory Council plans social and recreational activities for their peers, and helps staff remain cognizant of the needs and challenges of the youth program participants. A Youth Advisory
Council is usually elected by program participants and can provide an “official” vehicle for sharing the ideas and concerns of the young people with the museum leadership. This level of involvement may contribute to interests in a career in the science center or museum. Several alumni of the original Youth Advisory Council at the Miami Science Museum later became full time staff members.

Miami’s current peer-elected Youth Advisory Board (YAB) contributes to the leadership of the Museum’s Upward Bound Program, a federally funded TRIO program which supports high school students in their quest to be the first in their families to graduate from college. Because of the TRIO program, Miami’s YAB members are able to participate in the National Student Leadership Congress which is held annually during the summer in Washington, DC. Current members developed the following mission statement for Miami’s YAB: “YAB’s purpose is to excite, educate and influence our fellow peers to maintain a positive attitude towards the Upward Bound Program. We motivate student involvement and demonstrate leadership. Through our leadership, fieldtrips and fundraising events, we continue the legacy of excellence that lays the foundation of the Upward Bound Program.”

**DOCUMENT, DOCUMENT, DOCUMENT**

You have worked hard to get your program up and running. Documentation can serve as evidence of past and future work. This evidence will probably matter to your museum’s management team, your partners and current and potential funders. You will need to maintain documentation on participants, program activities and program management.

**Participant Documentation**

Collect as much information on each participant as possible, while not overwhelming either the youth or their parent/guardians. Keep forms simple and ask only what you really need to know. Also, access to the information collected from your program participants should be restricted to program staff, unless parental permission has been granted, in writing, for information to be used for other purposes. YouthALIVE! project directors found that having the following information made their jobs a lot easier.

When a teen enters the program, document the following information:

- Parent’s/Guardian’s name, address, phone/pager number
- Emergency contact
- Name, address, phone/pager number of another relative
- Permission slip to participate in the program (every teen’s parent/guardian should sign this form because it gives details about the times, places, expectations, etc. of the program).
- Medications the young person takes regularly; allergies or medical conditions you should know about
- What language(s) (other than English) is spoken at home
- Photo permissions signed by parent
- Name of teen’s school; name of teen’s guidance counselor

Even as you prepare to implement your program, have a plan for evaluation and fund-raising. Concrete strategies for documentation, evaluation and marketing, as the program begins, can support your later efforts to sustain the program.
You should have a file for each student in your program and forms should be filed as they are completed.

During a teen’s participation in the program, you should keep records of:
- Attendance/ sign-in records
- Contact log (a record of calls or other communication with parents, family and/or participant)
- Job assignments and performance reviews
- Copies of report cards (if your program requires them)

**Administrative Documentation**

Your administrative files should include these basic official program records: proposals for funding, blank copies of all forms, attendance records, annual reports to funders, program summaries, program-related correspondence and internal documents like memos, meeting minutes, invoices, purchase orders, budgets, etc.

**Program Documentation**

Your program files should include copies of all program materials: orientation and training materials; curriculum materials; schedules and calendars; materials distributed to participants, parents, advisors, staff; samples of participants’ work; participants’ feedback on the program and materials used to access participants’ progress.

**Media-Related Documentation**

Good press matters! Maintain a file of any media-related materials that feature your program. This includes articles from newspapers and magazines, press releases, program photographs, DVDs, and videos. This file might also include a well-written one page profile of your program. One program maintains a “Frequently Asked Questions” sheet for distribution as needed and well as a program profile document. Media related documentation could also include websites that feature your program.  
http://www.smm.org/ysc/  
http://www.youthexploringscience.com/programs

**Developing an Evaluation Plan**

Module 3: Evaluation offers a comprehensive guide on how to tackle evaluation of your program, including both in-house and outside evaluators. Discuss evaluation of your program early and often. Have your plan for evaluation BEFORE your program begins. Evaluation should coincide with program implementation not follow. Be certain to use what is learned through evaluation to improve your program whenever possible. A successful youth program is always evolving!
MARKETING YOUR PROGRAM

Who should know about your awesome program, besides the participants, their families and your community partner? Your audience for this information may be quite broad, but begin internally.

What vehicles exist for introducing the program to the museum staff and maintaining awareness? Presentations at all-staff meetings? Internal email? Memos or flyers? One-on-one meetings? Special presentations by the teens?

Experience has taught us that, to reduce the likelihood of embarrassing situations as the teens begin coming to the museum, it is important solicit support from important “gatekeepers” like security, admissions and floor staff. Your internal “marketing/informational materials” should provide staff with basic information about your program, including goals, main activities, meeting days and times, number of participants and your contact information.

An effective youth program, particularly one that is designed to creatively meet the needs of the youth and their communities, contributes to the mission and image of your museum. The program can be an asset when your supervisor, the museum’s director, the development director and/or the public relations or marketing director present the museum to the “outside world.” Your external audiences might include your community partner(s); parents; leaders of other youth-serving organizations; local and state policy makers; city agencies; philanthropic organizations; local educators, including principals, guidance counselors and college admissions officers; and local media.

Sometimes you, the program leader, will be the person who can most effectively convey the merits of your program. When appropriate and feasible, seize local and national opportunities to share information about your program and the contributions of your teens. Consider participating in a consortium of professionals who represent local youth-serving agencies. If you are active in any national or international organization that serves science center or museum professionals, find out what support is offered for youth program staff. The Association of Science-Technology Centers (ASTC) maintains a listserv, ISEN, the Informal Science Educators’ Network. This e-mail discussion list links more than 1,200 informal science professionals from around the world and might be a cost effective way of reaching out beyond your community. Others who are doing similar work are likely to respond to your questions.

http://www.astc.org/profdev/listserv.htm

Also, ASTC’s annual conference usually includes sessions relevant to the field’s youth programs staff.

http://www.astc.org/conference/index.htm

If you must prepare your own marketing materials without assistance from the marketing department, be sure your letters, press releases, brochures, announcements, invitations, fliers, videos and websites are accurate, professional, attractive and timely. To the extent possible, style consistent. Find out the policy related to using the official logo of your museum or science center. Having a logo for your program and using it, along with the museum’s name and logo, on all of your materials can help lend consistency to your marketing. It is usually wise to credit the program’s funding sources and your contact information on all marketing materials. Lastly, before launching your marketing materials,
have your supervisor/museum’s director’s stamp of approval, especially when using science center/museum logos and information.

**PROGRAM IMPLEMENTATION RESOURCES**

Americans for The Arts: Youth Arts Toolkit
http://www.americansforthearts.org/youtharts/planning/program.asp

http://www.americansforthearts.org/youtharts/evaluation/

University of Kentucky County Extension Service, Department of Agriculture Program Implementation
http://www.ca.uky.edu/AgPSD/progimp.pdf
## Module 3: MAINTAINING PROGRAM QUALITY: EVALUATION

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INTRODUCTION

This segment of the Guide to Museum-Based Youth Programs offers some support in the area of evaluation and documentation of a museum-based youth program. Evaluation is not an option regarding youth programs, and in fact, it is an essential element of program design and supports on-going fundraising. Ideally, strategies for evaluating the effectiveness of a youth program should be integrated into the initial design, but in reality most of us think about evaluation after our program has begun. In fact, if you created a logic model as discussed in Module 2: Program Design: Part C: Goals and Outcomes, as part of your program planning process, it would be helpful to have it in hand as you think about how your program will be evaluated.

You may know that your program is having a positive impact on its youth participants, but if you cannot prove or document this impact, your program is at an immediate disadvantage. An ongoing structured assessment of your program is critical for you and your museum. It helps you understand what connections are being made, or missed, in your program. In turn it helps you make informed improvements and move closer to obtaining your goals. You need information upon which to base programmatic decisions and to build support for your program inside and outside your institution. Information gained from evaluation enables funders and other community partners to objectively assess the investment of time, people and money given to your program and, ideally, affirm their participation and its value.

In addition, evaluation can be a significant program element that provides youth participants a structured opportunity to reflect upon their experiences, interactions and learning. It can offer them the all-too-rare opportunity to direct and support their education, and most importantly give them a feeling of control and self-esteem by knowing that their opinion is important and valued by adults.

This module offers a brief overview of the key issues related to evaluation. First you must decide who will coordinate the evaluation process. The program staff will always play an essential role in designing the overall evaluation plan, but there needs to be a single entity placed in charged of creating a detailed evaluation plan, designing the measurement tools and gathering the data on which findings and reports will be based. This person can be either inside or outside of your organization. There are both benefits and challenges to either option. To help you, this module lists questions to ask and key factors to look at to decide on whether to select an internal or an external evaluator, largely based on the resources and needs of your institution. If an outside or external evaluator is elected, don’t abdicate all of the responsibilities regarding the program evaluation to them — play an active role from beginning to end.
PART A: TYPES OF EVALUATIONS

No matter who designs and conducts the evaluation, you will have to know what kind of evaluation is most needed at this stage of the program’s development.

PLANNING EVALUATION

Planning evaluation assesses the understanding of program goals, objectives, strategies and timelines. It addresses the following types of questions:

- Why was the program developed? What is the problem or need it is attempting to address?
- Who are the stakeholders? Who are the people involved in the program? Who are the people interested in the program who may not be involved? What do the stakeholders want to know?
- What questions are most important to which stakeholders? What questions are secondary in importance? Where do concerns coincide? Where are they in conflict?
- Who are the participants served? What are the activities and strategies that will involve the participants? What is the intervention? How will participants benefit? What are the expected outcomes?
- Where will the program be located (educational level, geographic area)? How many months of the school year or calendar year will the program be in operation? When will the program begin and end? How much, if anything, does it cost the participants? What is the budget for program? What human, material and institutional resources are needed? How much is needed for evaluation? For dissemination?
- What are measurable outcomes? What is the expected impact of the program in the short run? The long run?
- What arrangements have been made for data collection? What are the understandings regarding record keeping, survey response and test participation?

FORMATIVE EVALUATION

Formative evaluation assesses inputs, implementation and ongoing program activities. It assesses whether the program is being conducted as planned and progress made by the participants toward the program goals. It addresses the following types of questions:

- Were the appropriate participants selected and involved in the planned activities? Do the activities and strategies match those described in the plan? If not, are the changes in activities justified and described? Were activities conducted according to the proposed timeline? By appropriate personnel?
- Were the appropriate staff members hired and trained, and are they working in accordance with the proposed plan? Were the appropriate materials and equipment obtained?
- Was a management plan developed and followed?
- Are the participants moving toward the anticipated goals of the program?
- Which of the activities and strategies are aiding the participants in moving toward program goals?
SUMMATIVE EVALUATION

Summative Evaluation assesses program outputs and program successes—the extent to which the completed program has met its goals. It addresses the following types of questions:

- How many people were served? How much were they involved? What products or programs were created? How extensively were the products shared?
- Was the program successful? What components were the most effective? What were the major challenges and how were they resolved?
- Did the program meet the overall goals?
- Did the participants benefit from the program?
- Were the results worth the program’s cost?
PART B: WHO WILL DO THE WORK?

In recent years, there are more and more informal learning institutions with full or part-time staff focused on programmatic and audience evaluation and research. Most of us, however, are still forced to either conduct evaluations ourselves or hire evaluation consultants.

BENEFITS OF EXTERNAL EVALUATORS

An independent evaluator, paid or unpaid, is better equipped to offer an impartial examination of the program and participants might be more willing to frankly critique aspects of the program to someone on the outside. Also, formal or professional evaluations require an extensive technical and theoretical background that program staff may not have. Even if program staff know how to design and conduct an evaluation, they might be too close to the program to give an unbiased view. Also, program staff has limited time and the evaluation will not get the type of attention it warrants.

On a more altruistic note, there are a number of independent evaluators who are quite experienced in the museum field. Their evaluations of museum-based programs and the lessons learned from them contribute to the museum field’s knowledge base. In fact, evaluators of informal science programs funded by the National Science Foundation are now expected to post their final reports at www.informalscience.org.

It is a good idea to include money for an independent or external evaluator in your program budget and funding proposals, even if it is not a proposal for government funding. Generally, the rule of thumb is to allot approximately 10% of the entire program budget for evaluation, depending on the complexity of the evaluation study. If you do not have funds for an evaluator you might consider looking to colleges and universities in your area to determine whether your program could be the project of a behavioral research or informal education class or internship.

BENEFITS OF IN-HOUSE EVALUATORS

However, if evaluation has to be conducted internally, there can be some positive outcomes. For one, there is no substitute for the insight that in-house staff will bring to the evaluation process. An evaluation instrument may convey statistics (quantitative information), but not the incredible stories (qualitative information) that make the stats relevant. Program staff know the teens and their stories. Also, an in-house evaluation can focus the process, so the results will achieve your ultimate aims: to run a good program and find the resources, political and financial, to keep it going.

KEY FACTORS IN MAKING THE DECISION

To assess whether or not to hire an external evaluator, you should look at four key factors: funder requirements and support, your institutional infrastructure regarding evaluation, your budget and time.

The Funder

Does your funder require you to complete a formal evaluation? Does the funding agency provide an evaluator to all grant recipients or have an evaluator it recommends? What type of data is the funder looking for? Are they interested in statistical, quantitative results or are they looking for more anecdotal, qualitative feedback? Would they be satisfied with simple attendance records, grade reports, samples of students’ journal entries and other
information that you could easily compile throughout the duration of your program? Or do they wish to see the kind of results that require some sort of student testing, interviewing and statistical analysis? Also, does your funder allow you to use any of the award monies for evaluation? Communicate with them about their expectations regarding the evaluation. In the long run, it is in your best interest to avoid any confusion at the outset, rather than submit a report that lacks the key information the funder was interested in learning.

Your Science Center or Museum
Does your institution evaluate programs, events, exhibits, etc. on a regular basis, using in-house staff or outside consultants? Do any staff members have experience with regards to evaluation? Is there an opportunity to offer staff professional development to support an evaluation effort? If funds weren’t allotted in the program budget for evaluation, is your institution willing to support an evaluation of the program, through the general operating budget? Does the museum staff know any reputable evaluators? Does the institution have any partners like a university department or advisor that can offer assistance toward an evaluation?

Your Budget
Will your institution or your program be able to fund the evaluation? How much do you have to spend? Will funds you have for evaluation cover all aspects of it, including the dissemination of the findings? Are there any funds to purchase documentation and evaluation software that will help you chart and report findings?

Time
Is there anyone—volunteers, interns or staff members—who can help conduct the evaluation if you choose to do it on your own? Does program staff have time to conduct the evaluation? Is the youth program the only long-term project you are currently working on? Do you have someone who can devote a set number of hours per week to work on an evaluation? Who will be responsible for analysis and summation of findings?
PART C: FINDING A PROFESSIONAL EVALUATOR

RELIABLE RESOURCES

If you conclude that you need and can afford a professional evaluator, you have several options. You can:

- Ask colleagues at other museums or science centers, youth serving organizations and even your funder(s), for recommendations
- Post a query on ASTC ISEN ([http://www.astc.org/profdev/listserv.htm](http://www.astc.org/profdev/listserv.htm)), an email discussion list linking more than a thousand informal science professionals
- Check the local universities and colleges for graduate students who might be interested in working on an evaluation project for experience
- Consult with local, regional, and professional organizations and journals
- Look at resources available online

Wonderful resources exist online that will lead you directly to lists of qualified evaluators. Here are a few key sites:

Association of Science and Technology Centers (ASTC):
As this handbook attests, ASTC “encourages excellence and innovation in informal science learning by serving and linking its members worldwide and advancing their common goals.” Through a variety of resources, ASTC disseminates best practices in the science center field. Articles by researchers and evaluators can often be found on its website and in its bimonthly news journal. [http://www.astc.org/resource/visitors](http://www.astc.org/resource/visitors)

Informal Science:
The purpose of [www.informalscience.org](http://www.informalscience.org) is to promote and advance the field of informal learning in science and other domains. This site is a place to share knowledge and support a community of learners to inform informal science learning standards and practices. It is being developed by the University of Pittsburgh’s Center for Learning in Out of School Environments (UPCLOSE) at the Learning Research and Development Center.

Committee on Audience Research and Evaluation (CARE)
A standing professional committee of the American Association of Museums, CARE provides a forum for museum professionals who believe that understanding the visitor is an essential part of museum planning and operation and disseminates information about systematic research and evaluation pertaining to museum audiences. It is also a good a source for names of evaluators. [http://www.care-aam.org/Visitor+Studies+101/default.aspx](http://www.care-aam.org/Visitor+Studies+101/default.aspx)

Visitor Studies Association (VSA)
VSA provides a forum for exchange of information in the field of visitor studies, including organizing an annual conference. [http://www.visitorstudies.org/](http://www.visitorstudies.org/)

American Association of Museums’ Marketplace
Museum Marketplace Online™ (MMO) is an online directory of companies, organizations and consultants serving the museum industry. The companies listed represent all areas of the museum industry from exhibit design to educational services and career development. [http://www.museummarketplace.com/](http://www.museummarketplace.com/) (Note: Type “evaluation” in the SEARCH box).
MAKING A SELECTION

What type of evaluation is needed?
Once you have identified potential candidates to coordinate and implement the evaluation, write a brief outline of your evaluation needs based on goals and objectives outlined in the program proposal, your preliminary conversations with the funder and any thoughts you have regarding what might work best. At the very least, you should decide on what type of evaluation you would like done: planning, formative or summative.

Selecting an evaluator
Your evaluation plan may involve one or all three types of evaluation, but it is important to have a sense of the scope of the effort before you begin talking with potential evaluators. Your program’s logic model or a solid, even if brief, outline of your evaluation needs or plans will serve two purposes: to help guide your conversation with potential candidates and act as a rough draft of the contract that you will negotiate with the selected candidate. If you introduce your program’s logic mode in discussions with the candidates, expect the one hired as evaluator to create alignment between the evaluation’s purpose and process and the logic model.

Once you have your outline, arrange interviews with your top candidates. During the interview make certain you discuss the following:

- Formal training and degrees
- Past experience with evaluation in informal learning institutions (particularly museums and science centers) and youth programs
- References you can contact to find out if he or she is easy to work with, punctual when submitting reports and capable of delivering quality work
- Samples of their work—ask for copies of evaluations or reports they have written and/or published

You should try to interview at least three candidates. The most important purpose of the interview is to decide whether or not you feel comfortable asking the candidate questions about his or her role and aspects of the evaluation process. The terminology connected to evaluation can feel foreign at times, so select someone that can make everything easily comprehensible. If you cannot understand what they are saying or you don’t think he or she is listening—keep looking.

Once you select an evaluator, write a contract for their services. According to Davis and Humphreys (1983), ideally, a contract should include:

- Purpose of the evaluation
- Questions to be addressed in the report
- Evaluation plan developed by the evaluator
- Audiences for the report
- Format of the report
- Details on distributing the report
- Comments addressing the authorship issue
- Responsibilities of the client
- Responsibilities of the evaluator
- Timeline (be sure to include regular check-ins with each other)
- Budget
- Specific procedures for resolving grievances
• Decisions about rights and ownership issues with regard to videos, photos, tape recordings, DVDs or web material

Make sure a staff members, advisors or trustees with legal acumen and experience scrutinize your contract before you and the evaluator sign it. Once it is signed by all parties, you are ready to set your evaluation in motion!
PART D: IN-HOUSE EVALUATION - DOING IT YOURSELF

BASELINE DATA

Baseline data are the records, documents and other materials related to your program can be useful sources of information, not only for you and your organization, but also for others who need to understand how your program functions and who you serve. Some of this information may be required by a funder or may help an evaluator determine the impact of your program. There may be times when you will find that your own examination of the data from these records will help build a strong case for seeking modification of the program or the adjustment of resources allocated to it.

Be sure to collect basic information on each participant including: name, age, gender, race, grade, school, address and phone number, an emergency contact person, and several pieces of information that would help you trace a participant after they have left the program (i.e., a guidance counselor, a student identification number, contact information for a community organization or church they attend and an extended family member). This information is not only immediately helpful, but also makes possible a retrospective study or a more detailed evaluation if and when you have the funding. A school identification number may be the most reliable way to find program alumni. Keep accurate program attendance records. Also, keep records of non-participating applicants in case you want to form a control group for a future study.

PROGRAM DOCUMENTATION MATERIALS

Important Note: Access to information collected from your program participants should be restricted to program staff, unless parental permission has been granted, in writing. for other purposes. In working with various data collection strategies, the identity of the respondents must remain confidential.
# Program Documentation Checklist

<table>
<thead>
<tr>
<th>Documentation Includes the Following Types of Materials</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Files</td>
</tr>
<tr>
<td><strong>Official Program Records</strong></td>
<td></td>
</tr>
<tr>
<td>- Initial Proposal for Funding</td>
<td></td>
</tr>
<tr>
<td>- Recruitment/Registration Materials</td>
<td></td>
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<tr>
<td>- Parental Consent &amp; Photo Release Forms</td>
<td></td>
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<tr>
<td>- Participants’ Attendance Records</td>
<td></td>
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<tr>
<td>- Enrollment Patterns</td>
<td></td>
</tr>
<tr>
<td>- Copies of Participants’ Report Cards</td>
<td></td>
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<tr>
<td>- Program-related Correspondence</td>
<td></td>
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<tr>
<td>- Annual Reports to Funders</td>
<td></td>
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<tr>
<td><strong>Program Materials</strong></td>
<td></td>
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<tr>
<td>- Orientation and Training Materials</td>
<td></td>
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<tr>
<td>- Lesson Plans</td>
<td></td>
</tr>
<tr>
<td>- Specific Curriculum or Activity-Related Materials</td>
<td></td>
</tr>
<tr>
<td>- Materials Distributed to Participants, Parents, Advisors, Staff</td>
<td></td>
</tr>
<tr>
<td>- Work Schedules &amp; Materials Used to Access Participants’ Progress</td>
<td></td>
</tr>
<tr>
<td>- Samples of Participants’ Work-Journals, Portfolios, Projects, Etc.</td>
<td></td>
</tr>
<tr>
<td>- Participants’ Feedback on Program</td>
<td></td>
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<tr>
<td>- Parent Feedback</td>
<td></td>
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<tr>
<td><strong>Internal Documents</strong></td>
<td></td>
</tr>
<tr>
<td>- Memos</td>
<td></td>
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<tr>
<td>- Meeting Minutes</td>
<td></td>
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<tr>
<td>- Internal Program Reports</td>
<td></td>
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<tr>
<td>- Bills &amp; Invoices</td>
<td></td>
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<tr>
<td>- Purchase Orders</td>
<td></td>
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<tr>
<td>- Travel Requests</td>
<td></td>
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<tr>
<td><strong>Media-Related Materials</strong></td>
<td></td>
</tr>
<tr>
<td>- Newspaper Articles</td>
<td></td>
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<tr>
<td>- Magazine Articles</td>
<td></td>
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<tr>
<td>- Press Releases</td>
<td></td>
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<tr>
<td>- Photographs</td>
<td></td>
</tr>
<tr>
<td>- Videos, CDs, and DVDs</td>
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</tbody>
</table>
PART E: DEVELOPING YOUR EVALUATION PLAN

After you decide on what type of evaluation best fits your program (planning, formative or summative), begin developing your evaluation plan. Your program’s logic module will be an indispensable tool in understanding how to evaluate and what information you will need. The evaluation plan will consist of five essential steps which are discussed in the following section:

Step 1: Identify Type of Information Needed and Formulate Good Evaluation Questions
Step 2: Identify Participant Sample
Step 3: Decide on Your Tools
Step 4: Collect and Analyze Data
Step 5: Prepare the Report

In the resources listed at the end of this section, you will find several excellent, detailed online resources for Do It Yourself evaluators.

STEP 1: IDENTIFY TYPE OF INFORMATION YOU NEED OR WANT TO COLLECT

Largely, there are two types of data that can be captured through program evaluation: qualitative and quantitative. Qualitative evaluation acquires data through interviews, observations, journals, conversations and focuses on deep description of program efforts and outcomes. It typically generates themes or categories that emerge through data analysis.

Quantitative data looks at measurable program goals through numerical data (i.e., higher science grades in school, number of youth who complete the program and number of hours youth spent in the program). At times qualitative data is coded and turned into quantitative data for analysis. For example, assessments of attitudes and self esteem can be coded as categories and compared before and after a program.

The goals and objectives outlined in your project proposal provide a good starting point for identifying the type of data you need to collect and developing an evaluation plan. Make sure the goals of your program are clearly articulated and that you have measurable objectives. The goal is your ultimate destination and it guides not only what you do in your program, but also visually shows your program results to you and others within a formal document. Objectives (sometimes referred to as outcomes for evaluation purposes) are the means in which you plan to achieve your goals. Setting measurable objectives will help you design a strong program, build support and assess your success.

If your goals and objectives are too vaguely articulated (and somehow, you got funded anyway) it will be hard to decipher what your program, if anything, is accomplishing. It’s important to have a sense of the original goals, but these goals should evolve with the program and its participants over time. Goals and objectives can be created or revised at anytime, but keep in mind the original agreement made with the funder. Most funders expect to be informed of any major changes in the programs that they support. Always look beyond the original goals and objectives to ensure you are able to identify potentially more important aspects of the program as well. If you need help creating goals and objectives, refer to the section: Goals and Outcomes in the Program Design Module 2.
A clear sense of your program’s objectives and expected outcomes will enable you to develop strong evaluation questions. The evaluation questions that you develop will determine what kinds of information you will need to collect.

**Formulate Good Evaluation Questions**

Many believe that evaluation is a process of answering questions. To this end, you will need to develop a comprehensive set of questions, relating to the quality and merits of your program. The following are some of the numerous sources that should consider when developing questions.

- Original Program Proposal: If you haven’t read it, read it thoroughly. The goals and objectives outlined should provide a good starting point for developing questions.
- Program Documentation: Search through your records, training materials, student journal entries, notes from parents, etc.
- Conversations with the intended audience(s) of the completed evaluation: Ask funding representatives what outcomes they are interested in.
- Previous Evaluations: Review any and all evaluations implemented on the program or similar programs at your institution.
- Observations: Take the time to watch what is going on in the program. You don’t necessarily have to identify problems, but look for areas that can be ‘demystified’ through a focused study and description.
- Conversations Among Program Staff: Since these are the people who are on the frontlines, they will have a very useful and insightful perspective on areas in the program that could use some level of examination and/or improvement.
- Remarks Expressed By Youth Participants: Either through formal or informal means, program staff should always be listening to the youth participants in their program.
- Similar programs in the Field or National Initiatives.

When writing evaluation questions, make sure you
- Write questions that will provide useful information about the program
- Write questions that facilitate decision making
- Write questions so that they will reveal immediate outcomes
- Write questions that you, as evaluator, have time to answer
- Write questions that you can afford to answer
- Write questions using specific language, to have a reasonable chance of knowing whether you have answered them. For instance, “Do participants demonstrate an increased understanding of scientific concept?” rather than “Is this an effective program?”

An example of a measurable objective and related evaluation questions might be:

**OUTCOME:** Youth participants identify the science museum’s program with engaging personal experiences and growth.

- Does the program retain the active involvement of its participants beyond their initial year?
- Do the participants find program’s activities to be interesting and engaging?
- Do participants feel that the program makes learning science more fun and exciting?
- Would participants recommend the program to other youth?
- Can the youth participants identify a negative or detractor of the program? Would that detractor prevent them from continuing the program?
• Have participants had any experiences in the program that have later been helpful in school?
• To what extent do participants feel that they have gained new skills while in the program?
• Can participants identify ways in which the program has provided them with opportunities for increased responsibilities?

**STEP 2: IDENTIFY WHICH PARTICIPANTS WILL MAKE UP YOUR SAMPLE.**

Once you have your questions, you must decide on how to use them. Identifying your sample is a key part of this process. The sample is a group of people selected to respond to or participate in the evaluative process. Depending on the information you are seeking, the sample can be randomly selected or chosen by certain characteristics. Either way, at some point in the future, you should plan to describe the selection process for you readers. For your purposes you might want to question all current participants, returning participants, participants in particular grade levels, program drop-outs, parents, community partners or perhaps other museum staff. It all depends on your evaluation questions.

**STEP 3: DECIDE ON YOUR MEASUREMENT TOOLS**

Museum-based youth programs have used a variety of techniques to collect information indicating how well their programs are doing or how effective specific, vital components of their programs are. For those considering program evaluation on a larger or more formal scale, the National Science Foundation has identified sources and techniques for collecting evaluation information as well as the advantages and drawbacks of several data collection evaluation procedures. [http://www.nsf.gov/pubs/2002/nsf02057/n sf02057_1.pdf](http://www.nsf.gov/pubs/2002/nsf02057/nsf02057_1.pdf)

Program components like reflection sessions, daily debriefings, journals, and portfolios have worked well not only for participant feedback, but also as data collecting tools in museum-based-youth programs. Some program leaders have incorporated interview protocols and questionnaires into their evaluation activities.

**Participant Feedback Tools: Reflection Sessions**

Make a conscious effort to establish and maintain a climate of reflection. Encourage participants, staff, your advisory board and others to join with you in observing, reflecting upon and assessing your youth

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<table>
<thead>
<tr>
<th>TIPS For Creating Measurement Tools:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use language that is appropriate to youth.</td>
</tr>
<tr>
<td>• Avoid leading questions and injecting your own bias. Objectivity is sometimes difficult to maintain when you’re deeply involved in the process.</td>
</tr>
<tr>
<td>• Always ask an objective third party to complete the questionnaire or listen to your interview questions before you begin piloting or using them with young people.</td>
</tr>
<tr>
<td>• Make sure questions are sufficiently open-ended, meaning they should require a response.</td>
</tr>
<tr>
<td>• Keep the questions as short as possible. Longer sentences tend to confuse or, even worse, bore the person trying to answer the question.</td>
</tr>
<tr>
<td>• Ask questions that relate to the evaluation question you hope to answer—don’t stray.</td>
</tr>
<tr>
<td>• Use a combination of measurement tools that will allow you to gather enough qualitative and quantitative data to give a well-rounded picture of who are the participants in the program, what they do in the program and what impact the program has had on them.</td>
</tr>
</tbody>
</table>
program on an on-going basis. Participant input throughout the program is more important than you think. When participants are part of the program planning and evaluation process, they take more ownership of the program and their contributions.

Feedback or debriefing is especially important when young people are working for your museum. Set time aside at the end of every day to find out what happened that day, to tie up any loose ends and to offer advice for improving performance. The debriefing period also gives you the opportunity to see if your program goals and objectives are being met. Encourage comments by saying, "Your input is very helpful; this is a new program and we are always looking for ways to make it better; help us do the best possible job; give us your feedback." Record their observations for use in long-term planning as well as in making immediate program decisions.

Use evaluation to bring about closure for each participant’s experience and to help them see what they are learning. What your participants take away from their experiences, either daily or in sum, will be enhanced by helping them to reflect on and articulate what they are learning. In effect, you are teaching young people a critical life skill — how to be reflective — by involving them in evaluating the program.

**Participant Feedback Tools: Comment Cards**

This tool, used in EQUALS workshops at Lawrence Hall of Science, collects immediate feedback from participants. Have 3x5 index cards easily accessible throughout the session. At the beginning of each session, encourage participants to use the cards throughout the session, writing down comments or questions related to any aspect of the day's activities. They do not have to sign their names unless they want you to speak with them privately about the matter. At the end of the session their cards should be deposited in a collection box so that the session leader can review and respond, as appropriate, at the beginning of the group’s next session. This is a flexible method for uncovering any issues among participants.

**Participant Feedback Tools: Questionnaires**

A questionnaire is a set of written questions designed to collect personal data, opinions, reactions to experiences and sometimes recommendations. Questionnaires can be in an open-ended format, giving respondents full control over their responses, or they can be closed-ended, which forces respondents to reply "yes" or "no", or to select from responses that you provide.

**Example of Open-Ended Questions:**
- If we offer this program again, what suggestions would you have for us?
- What skills do you have now that you did not do before you joined this program?
- What has been your greatest challenge in this program?

**Example of Closed-Ended Question:**
- Are you happy you participated in the program?
- Would you encourage other young people to join this program?

**TIP:**
Some programs have used pre- and post-program questionnaires in an attempt to measure changes in attitudes and knowledge of youth program participants.
Example of Multiple Choice Question Format:

Did any of the following make your participation in the program more difficult?

- Registration Process
- Transportation
- Fellow Participants
- Program Staff
- Format of Program
- Room Environment
- Time of Program

If yes, check all that apply. Circle the choice that was the greatest problem for you.

Example of Scale Question Format: (Scale questions can provide insight into participants’ opinions and attitudes)

<table>
<thead>
<tr>
<th>Please check the column that best describes your response to each question</th>
<th>Always 5</th>
<th>Usually 4</th>
<th>Sometimes 3</th>
<th>Rarely 2</th>
<th>Never 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In this museum, I find exhibits and/or activities that really interest me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. This program helps me understand science better.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I am comfortable talking with museum visitors.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. When I need help, someone here at the museum is willing to help me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. The work I do here helps the museum.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I am learning information here that can help me in school.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I am learning skills that can help me in future jobs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Participant Feedback Tools: Interviews
Whether face-to-face or by telephone, and whether with a group or individual, interviews require considerable prior planning. While the interview format can be structured, semi-structured or unstructured, the interviewer must know what information he or she is seeking, have developed questions and must be prepared to probe responses when necessary. Interviews may be a more effective source of information if conducted by a neutral third party rather than by program staff. Regardless of who conducts the interviews, transcribing the information may be a challenge. Remember the rules of confidentiality!

Participant Feedback Tools: Journals
Journals are excellent devices for collecting qualitative information from teens. Journals enable you to assess gradual changes in students' attitudes and skills. Unlike academic writing (such as essays, reports, etc.), journal writing allows the writer to focus almost exclusively on content. In other words, rhetorical devices, punctuation and other elements that render a written piece formal are unimportant. The purpose of a journal is not to improve writing, but rather to give the young person the opportunity to use writing as a reflection and communication device. However, some program leaders who regularly use journal writing, have noticed that their young people's writing skills seem to improve over time. By having students write in journals regularly and frequently, it can provide you with indispensable and highly useful information about your youth program and its participants.

The Miami Museum of Science asked its YouthALIVE! participants to respond to four questions, in addition to any comments they want to supply. What did I learn today? What did I like the most? What did I like the least? How is this new learning useful to me?

Staff looked for changes on several fronts: proficiency in technology use and content knowledge in science, math, social science and/or geography. In addition, participants kept journals in electronic format, to support the program’s goal of increasing technological literacy while encouraging the development of communication skills, particularly writing.

Participant Feedback Tools: Portfolios
While encouraging a young person to be self-reflective, organized and to think critically, portfolios can provide program staff with important information about what aspects of the program are contributing to the young person’s growth, from her or his perspective. Portfolios, through visual images and artifacts, answer the following questions:

- What am I good at?
- What do I like to do?
- What can I use to show others that I have these skills and interests?
- How can I present this information in the most believable way?

Because a portfolio is simply a young person’s collection of samples of his or her accomplishments, the process of assembling and updating a portfolio can be particularly engaging for adolescents. Collecting and organizing representations of accomplishments in a single medium — a book, a file folder, a poster, a box, etc. — is one way of demonstrating what the teens have learned and experienced as a member of the museum’s youth program. Young people should be aware of the different kinds of portfolios and their purposes, particularly the various models for employability or professional portfolios.
STEP 4: COLLECT AND ANALYZE DATA.

Timeline

Set a timeline for your data collection that allows for a pilot test of your instrument and analysis of that data. Though some data may already exist in your files, you may need to organize the information to be easily accessible to all. Think about the program’s yearly calendar, participant recruitment, turnover and attrition when designing your evaluation plan. You may have a great deal of flux among participants, especially those from low-income communities where some families have to move frequently. One science center begins each class by asking whether anyone has moved since the last session, so that addresses are always current. Have a plan that looks at both the overall impact on the participants that stay and captures the reasons that others leave.

Quantitative Data

As discussed earlier, you will be collecting two types of data: numerical information and narrative information. Numerical information results from evaluation questions with quantifiable responses. This will involve calculations of responses and gathering statistical documentation from program files to answer evaluation questions. For example:

Question: Is the program able to sustain participants’ interest and involvement?
Answer: Yes. The average length of participation by 14-year-old youth was 2.6 years. [Data gathered from attendance and participation records.]

Question: Does the participation in the program help young people with their school work?
Answer: Seventy-five percent (75%) of the participants in grades seven and eight indicated that within the past three months at school they had used something that they had learned at the museum. [Surmised from questionnaire questions and possibly report cards.]

Qualitative Data

Narrative data, on the other hand, is not based on numbers, but is richer in details collected from individual interviews, group interviews and focus group sessions, journal entries, and open-ended questionnaires. While statistics are utilized to analyze numerical information, content analysis is the method used to analyze narrative data.
Example of content analysis for narrative analysis

Question: Would you encourage a friend to join this youth program? Why or Why not?

<table>
<thead>
<tr>
<th>Response</th>
<th>Category</th>
<th># of Comments</th>
<th>Sample Quotes (Total # participants = 24; Total # reasons cited = 43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Enjoyment</td>
<td>16</td>
<td>“We have fun helping little kids do science.” “It feels good to be here.” “It’s cool, fun program.”</td>
</tr>
<tr>
<td></td>
<td>The Job</td>
<td>15</td>
<td>“It’s a real job, with pay.” “We get to practice skills that will help us in other jobs.”</td>
</tr>
<tr>
<td></td>
<td>Learning</td>
<td>4</td>
<td>“You learn a lot about science, by doing hands-on science.”</td>
</tr>
<tr>
<td></td>
<td>Relationships</td>
<td>2</td>
<td>“The other kids are cool and we help each other out.” “Our program leader is great!”</td>
</tr>
<tr>
<td>No</td>
<td>Time</td>
<td>2</td>
<td>“We have to be here too early on Saturday mornings.” “You have to sign up for the whole school year.”</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>2</td>
<td>“My friends are more interested in sports.” “Nobody else really wants to spend their free time doing science stuff.”</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>1</td>
<td>“None of my friends live around here.”</td>
</tr>
</tbody>
</table>

With narrative information, you must use your interpretations of the data to surmise meaning. Make note of areas where you see consistency within the data and look for patterns. Equally important is to look for interpretations that appear inconsistent or discrepant (e.g., 90 percent of the 15-year-old participants seem to enjoy the volunteer program, but only 30 percent choose to return for a second year).

Please note that by coding comments into a number, you actually move into the realm of quantitative analysis. This is fine, but it is a shift from a strictly qualitative evaluation. Qualitative data is also the basis for case studies, which provides a deep and insightful description of a program. When possible, plan to incorporate both qualitative and quantitative measurement tools.

**STEP 5: PREPARE THE REPORT**

You have collected all the data for your evaluation, but now what? Before you begin to summarize your findings, think about who will be using the information, internally and externally, and how. There are many entities with interests in your program and those who you will want to share your findings to encourage interest. For instance, the information can be used for:

- Presentations to institutional leadership (the CEO, senior management and Board), for their edification and ongoing support
- Public relations (via press releases, media kits, newspaper, trade magazine and professional journal articles)
- Presentations to the program’s advisory board, the museum or science center staff and volunteers
• Presentations to professional organizations, other educators and colleagues
• Presentations to community partners and other local groups
• Inclusion in funding reports to current funders
• Inclusion in funding proposals for potential funders
• Inclusion in annual reports on the program or museum/science center

Many of these are stakeholders who have supported the program in the past; and you expect them to make decisions about future support and involvement. Even so, they are not your most important audience for your findings. You are actually the most important audience for the information learned. The data collected through the evaluation process will undoubtedly help you improve your program and help program staff that comes after you understand the program’s strengths and challenges. In any case, your report must be easy to read, credible and timely, while painting the overall picture.

An evaluation report, whether it takes the form of a memo to program staff or a formal document for a larger audience, should be organized clearly. It should begin with a brief statement of the purpose of the study. It then should offer some background on the program followed by a description of the evaluation process and findings. Your discussion of the results will be more meaningful if it is directly related to your original evaluation question(s). It is best to organize your findings using the overarching question(s) that you initially sought to answer.

This is the place to fully present the findings and your interpretation of them. Return to each evaluation question and look at the data you collected that corresponds to that evaluation question(s). For instance, if your question was, Is the program able to sustain participants’ interest and involvement? and your measurement tool was a questionnaire, you might have four questions on the questionnaire that relate to this particular evaluation question. Or if you are using journals, your findings would be based journal entries related to participants’ interest and involvement in program. In light of your question, what do the findings mean?

Your writing should be as objective as possible, without emotion or value judgments. Presentation of this information can take many forms including narration, tables, graphs, charts, etc. Photos that reflect one or more of your findings help the reader understand or visualize what you are intending. However, keep the analysis of the information simple. Do not use any statistical information that you don’t fully understand. Samples of the measurement instruments used should also be included in the report. Bring closure to the report with your conclusions and recommendations. Also remember, when introducing the evaluation report orally to the busiest individuals in your targeted audiences, an executive summary, PowerPoint presentation and/or handout will be appreciated.

Finally, remember that your evaluation process should serve as an ongoing source of information about the extent to which the program is doing what it set out to do. It may also enable you to discover any unexpected outcomes; and it can help you determine where you need to make ‘course corrections’. Findings emerging from the evaluation process not only inform your own decisions, as program leader, but also may factor into your museum’s discussions about the program. Evaluation is a critical factor in program sustainability.
RESOURCES

Planning & Evaluation Resource Center (PERC)
PERC is a project of the Innovation Center for Community and Youth Development and the Institute for Applied Research in Youth Development at Tufts University. This website is designed for people who want to do self-evaluations of their youth development programs or who want a better understanding of evaluation.
http://www.evaluationtools.org/

Online Evaluation Resource Library
Comprehensive resource, funded by the National Science Foundation, to assist professionals in designing, conducting or reviewing project/program evaluations.
http://oerl.sri.com

Taking Stock: A Practical Guide to Evaluating Your Own Programs
Horizon Research, Inc.
This is a user-friendly, concise text that walks you through developing an evaluation.

National Science Foundation (NSF)
NSF has many publications that offer insight with regards to evaluation. Some suggested titles include: Footprints: Strategies For Non-Traditional Program Evaluation, User-Friendly Handbook For Mixed Method Evaluations and The 2002 User-Friendly Handbook For Project Evaluation. Via the NSF’s web-site you can access PDF versions of these publications.

American Evaluation Association
Website on evaluation “devoted to the application and exploration of evaluation in all its forms.” Includes links for local organizations.
http://www.eval.org/

Basic Guide to Program Evaluation by Carter McNamara
http://www.managementhelp.org/evaluatn/fnl_eval.htm

Portfolios developed by NCREL
http://www.ncrel.org/sdrs/areas/issues/students/earlycld/ea5I143.htm

Utilizing Student Portfolios as an Assessment Tool by Emma McDonald
TERMS TO KNOW

**Accuracy:** The extent to which an evaluation is truthful or valid in what it says about a program, project or material.

**Achievement:** A manifested performance determined by some type of assessment or testing.

**Affective:** The domain of emotions, feelings and attitudes.

**Assessment:** Often used as a synonym for evaluation. The term is sometimes recommended for restriction to processes that are focused on quantitative and/or testing approaches.

**Attitude:** A person’s mental set toward another person, thing or state.

**Attrition:** The drop out rate. Attrition is an important factor in program development. Low attrition can be a strong indication of program effectiveness.

**Background:** The contextual information that describes the reasons for the project, goals, objectives and stakeholders’ information needs.

**Baseline:** Facts about the condition or performance of subjects prior to treatment or intervention.

**Behavioral objectives:** Specifically stated terms of attainment to be checked by observation or test/measurement.

**Bias:** A consistent alignment with one point of view.

**Case Study:** An intensive, detailed description and analysis of a single project, program or instructional material in the context of its environment.

**Cognitive:** The domain of knowledge.

**Conclusions (of an evaluation):** Final judgments and recommendations.

**Cost-effectiveness:** This analysis determines what a program or procedure costs against what it does (effectiveness). Is this product or program worth its costs?

**Dissemination:** The process of communicating information to specific audiences for the purpose of extending knowledge and, in some cases, with a view to modifying policies and practices.

**Executive summary:** A non-technical summary statement designed to provide a quick overview of the full-length report on which it is based.

**External evaluation:** Evaluation conducted by an evaluator from outside the organization within which the object of the study is housed.

**Evaluation:** A process used to assess the effectiveness of a program by comparing results with program goals.

**External (or Outside) Evaluator:** An evaluation expert or firm, not on the museum staff, hired to conduct the evaluation of a particular project. Outside evaluators are used because they have no vested interest in program outcomes and are therefore neutral and impartial.

**Feasibility:** The extent to which an evaluation is appropriate for implementation in practical settings.

**Focus Group:** An ad-hoc group of people representative of a target audience assembled for a short time period to help an evaluator assess prior knowledge, interest or to get reactions to a projected program.

**Formative Evaluation:** Evaluation designed and used to improve an intervention, especially when it is still being developed. A process used during program development to assess effectiveness and adjust the program/exhibition accordingly. Examples of formative evaluation results are: label copy that is too hard to understand, youth programs that mix incompatible age groups, etc.

**Front-End Evaluation:** A process used early in exhibition and program development to determine what a particular audience thinks, knows and wonders about the subject to be presented. Front-end evaluation helps the program designer select content and approaches for a particular audience.

**Goal:** A desired result or condition for a program. Goals describe major results. Goals are general, long term and usually non-measurable, e.g. nurture and sustain youth's interest in science, assure that adult caretakers and family members of youth participants feel comfortable at the museum and have access to museum resources and museum staff, etc.

**Impact evaluation:** An evaluation focused on outcomes or pay-off.

**Informed consent:** Agreement by the participants in an evaluation of the use of their names and/or confidential information supplied by them in specific ways, for stated purposes and in light of possible consequences prior to the collection and/or release of this information in the evaluation report.

**Instrument:** An assessment device (test, questionnaire, protocol, etc.) adopted, adapted or constructed for the purpose of the evaluation.

**Internal evaluator:** Internal evaluations are those done by project staff, even if they are special evaluation staff, that is, external to the production/writing/teaching/service part of the project.

**Longitudinal study:** An investigation or study in which a particular individual or group of individuals is followed over a substantial period of time to discover changes due to the influence of the treatment, or maturation or environment.

Longitudinal Data: Information collected over a long time period, well beyond participation in a program. Longitudinal data is usually effective impact data because it shows the long-term effects of participation in the program.

Objective: A specific description of an intended outcome.

Observation: The process of direct sensory inspection involving trained observers.

Outcome: Post-treatment or post-intervention effects.

Pilot Projects: Small, shorter versions of a larger program used to test program ideas and procedures.

Planning Evaluation: Evaluation planning is necessary before a program begins, both to get baseline data and to evaluate the program plan, at least for evaluability. Planning avoids designing a program that cannot be evaluated.

Population: All persons in a particular group.

Pre/Post Testing: A quantifiable evaluation technique where participants are tested before and after an experience to determine measurable changes as a result of the experience. For instance, testing science vocabulary before and after a workshop and comparing results.

Program: The general effort that marshals staff and projects toward defined and funded goals.

Qualitative evaluation: The part of the evaluation that is primarily descriptive and interpretative, and may or may not lend itself to quantitative treatment. Evaluation of non-measurable program goals, e.g. attitude, self-esteem and morale.

Quantitative evaluation: An approach involving the use of numerical measurement and data analysis based on statistical methods. Evaluation of measurable program goals, e.g. higher science grades in school, number of youth who complete the program.

Random sampling: Drawing a number of items of any sort from a larger group or population so that every individual item has a specified probability of being chosen.

Recommendations: Suggestions for specific appropriate actions based upon analytic approaches to the program components.

Replication: Repeating an intervention or evaluation with all essentials unchanged. Replications are often difficult to evaluate because of changes in design or execution.

Research: The general field of disciplined investigation.

Self-Administered Instrument: A questionnaire or report completed by a study participant without the assistance of an interviewer.

Self-Report Instrument: A device in which persons make and report judgments about the functioning of their project, program or instructional material.

**Stakeholder:** A program’s stakeholder is one who has credibility, power or other capital invested in the project, and thus can be held to be some degree at risk with it.

**Statistic:** A summary number that is typically used to described a characteristic of a sample.

**Strategy:** A systematic plan of action to research predefined goals.

**Summary:** A short restatement of the main points of a report.

**Summative Evaluation:** Evaluation designed to present conclusions about the merit or worth of an intervention and recommendations about whether it should be retained, altered or eliminated. The final evaluation of a program, after all changes have been made. Summative evaluation is usually a final report assessing program effectiveness in relation to program goals.

**Surveys:** Data collection techniques used by evaluators where a particular group is asked a series of questions designed to elicit pre-determined information. Surveys can be written or oral. For example, written or oral questions for museum visitors to determine where they live, why they came to the museum, their ages, sex, educational level.

**Unanticipated Outcomes:** A result of a program or interview that was unexpected. Often used as a synonym for side effects, but only a loose equivalent.

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This module was developed from a manuscript written for YouthALIVE! initiative by Peggy Ruth Cole, creator of the Science Career Ladder at the New York Hall of Science and former Director of Program Planning and Development.
INTRODUCTION TO THE WORLD OF FUNDRAISING

This chapter is designed to help you raise money for your youth programs from foundations, not from individuals. It assumes you have little to no fundraising experience and that you need a good understanding of the basics in order to work with your development department or to begin fundraising on your own. Fundraising procedures and approaches differ slightly at every institution, and some institutions include program staff in fundraising efforts while others do not.

In small museums, program staff may also raise program funds. Whereas in larger museums, there are usually well-staffed development departments whose job is to identify and cultivate funders, write proposals and secure funding. Youth programs may not be a priority for their efforts. Funding priorities are usually set by the director and senior staff and, in some museums, the trustees also have a say.

Think it is impossible to raise money during severe downturns in the economy? Don’t give up! Consider the advice from Jim Donovan, President/CEO of Donovan Management, Inc. and a blogger on philanthropic issues of non-profit organizations:

“The best time to raise money is when you need it. This isn’t a fundraising issue, it’s a communications challenge. You must convince your constituency that your mission is more relevant NOW than ever before. Remind them of the consequences of not meeting your mission. Who will suffer, go without, be worse off than they are today?

PART A: KEY STAKEHOLDERS IN FUNDRAISING

IN-HOUSE COLLABORATIONS

Regardless of the size of the museum, successful fundraising is the result of the collaborative efforts of key staff members. Since they provide the leadership for establishing and sustaining the program they are, in effect, the leadership team. A typical leadership team would include:

<table>
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<tr>
<th>Role</th>
<th>Function</th>
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<tbody>
<tr>
<td>Museum Director</td>
<td>Speaks for the program with funders, trustees and the general public</td>
</tr>
<tr>
<td>Development Director</td>
<td>Guides the fundraising process</td>
</tr>
<tr>
<td>Public Relations/Marketing Director</td>
<td>Tells the program’s story to the media using publications; arranges program-related press conferences and public events showcasing museum activities</td>
</tr>
<tr>
<td>Youth Program Director</td>
<td>Provides direct access to the program and its young people, knows the participants, program direction and day-to-day progress</td>
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</table>

If your museum has a development office, establish a good working relationship with the development staff. You are the person who best understands your youth program and you will be held accountable if promises are made to a funder which can't be delivered.

Here are some simple strategies for making this relationship work:

- Get to know development staff so you are comfortable with one another. Set up informal lunches periodically. Keep in touch and stop by to say hello.

- Involve development staff with your programs so they feel knowledgeable, connected and committed. Invite them to program planning meetings, program events and request their feedback.

- Make yourself available to development staff and always provide them with information they request as quickly and graciously as possible. Development staff is often under pressure and may need last minute information to meet proposal deadlines.

- Be sure to thank development staff for their help with proposals, whether or not you get funded. A short thank-you note goes a long way toward establishing good will.

TIPS:

Think of creative ways to involve leadership team members with your program. For example:

- Arrange for program participants to interview team members

- Invite your director to give the welcome at parents’ events and/or orientation sessions

- Arrange meetings with your director, team members and youth participants for funders and other interested parties

- Create informal opportunities for program stakeholders (teachers, family members, religious leaders) to get together with participants and team members, e.g. pot luck suppers, behind-the-scenes youth-led tours
ABOUT THE FUNDERS

Fundraising is a process of establishing relationships that benefit the funder and the fundee. Although funders and fundees share the same goals, they are on different sides of the effort. Funders need program investments and fundees need financial support to accomplish shared goals. Funders are accountable to their trustees for the quality of their investments. Fundees are accountable to funders for the use of their funds.

Your role as a fund seeker is to figure out a) if your program goals match the funder's mission, and b) if they do, how to clearly present the match. Think of it this way - You have a terrific youth program that will significantly change the life chances of inner-city youth. A funder has monies earmarked to invest in programs that significantly change the life chances of inner-city youth. You are looking for monies, the funder is looking for programs that will make a difference. A perfect match. Ideally the funder and fundee are a team working to make something they both care about happen.

ACCESS TO NON-TRADITIONAL MUSEUM FUNDING SOURCES

If your program is well designed in addressing one of society's current social or educational priorities, it can give the museum access to previously inaccessible funding sources. Many funders concerned with social change look for unique collaborations among community-based organizations designed to bring the resources of each organization together in the interests of program participants. These collaborations are time-consuming, but they are well worth the staff time required. In Appendix V, you’ll find a list of funders of the earliest local YouthALIVE! programs.

WHO GIVES MONEY?

Charitable Trusts
Community Foundations
Corporate Foundations
Government Foundations
Private Foundations
Individuals

WHY DO PEOPLE GIVE MONEY?

In 2006 the Internal Revenue Service received filings from 79,765 private foundations in the United States; and we can assume that these foundations seek to support worthwhile causes. They have monies that are, by law, earmarked for grants and they are required to give that money away. Wealthy individuals, families and corporations form foundations to give away money for any of the following reasons:

- They care passionately about people
- They want to improve the quality of life locally, regionally, and globally
- They want to solve a social problem
- They receive tax advantages
- They want to be perceived as good citizens

The selection of funding focus reflects the concerns of individuals or families. Large private foundations, e.g., Carnegie, Ford, Wallace, C. S. Mott and Kellogg, develop funding goals by researching areas of concern to their trustees, staff and to society. Foundation funding goals
change as a function of new social issues or concerns of foundation staff. For example, a funder may support AIDS projects for a few years and then shift its focus to teen pregnancy.

**WHO GETS MONEY?**

Organizations that:

- Share the same goals as funders
- Do their homework. Know what other efforts are being made locally, regionally, and nationally
- Present a project that has clear goals, is feasible and has well conceived work plans, adequate staff expertise, resources and organizational infrastructures to carry out their plans
- Develop and maintain relationships with funders
- Have strong track records of past success
- Do what they propose to do
- Develop projects with long range impact that can continue after funding ends
- Present realistic budgets with matches from other funders or collaborators
- Have strong internal project support from trustees and directors
- Are knowledgeable about the funder's interests, policies and guidelines and meet the funder's legal requirement for grantees

In short, funders are looking for projects that match their goals and have strong potential for success. Like any other investor, they want to make good investments that yield a return in the form of successful programs.
PART B: FUNDRAISING – HOW IT’S DONE IN YOUR MUSEUM

Fundraising is a team effort involving many different tasks and procedures. Your institution probably differs somewhat from others in terms of staff and board responsibilities.

All fundraising involves the following procedures in the following order:

- Researching potential funders
- Establishing relationships with potential funders
- Presenting the program to potential funders
- Writing proposals or request letters

These procedures help funders understand your organization and its programs as well as help your organization understand the funder. The goals are to engage funders, show them that you are working effectively in areas of mutual concern and to learn the funding priorities and limitations of the funder.

The worksheet, *Who Does What in Your Museum*, can help you determine the fundraising process in your museum. As project director it is likely that you will have to know, and become involved in, some or all of the tasks listed on the worksheet, Depending on the size of your institution, you may be the driving force behind these efforts. As daunting as this may seem, take comfort in the knowledge that many of YouthALIVE! project directors are quite successful, sometimes with and sometimes without direct assistance. You can always call another youth program leader for support and help.

Complete the following worksheet using either names or placing an x in each box to determine how fundraising works at your museum. A discussion of each procedure follows.

**WHO DOES WHAT IN YOUR MUSEUM**

As you complete this worksheet, you will gain a clearer picture of how fundraising is done in your museum or science center; you will see the key tasks and who carries them out. For museums and science centers that have been successful in sustaining their youth programs, these tasks – or some variation of them – are routinely given serious attention. Depending on your level of responsibility as youth program staff, you will have to know about, or become involved in many of the tasks listed on the next page.

As you place an X or name in each cell on the worksheet, the fundraising process in your organization will become evident.
<table>
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<tr>
<th>Researching Potential Funders</th>
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PART C: FINDING FUNDERS: RESEARCH AND PROSPECTING

Finding potential funders is detective work. You need to use every resource at your disposal to figure out which funders to approach. Resources include colleagues, trustees, print and on-line materials, attribution plaques in museums, newspaper articles, media information and anything else that leads you to a potential funding source. This section outlines the traditional sources for prospecting; you may also find others that work well for you.

INTRODUCTION TO PROSPECTING

Step 1: Collect publications from museums similar to yours and organizations serving youth (brochures, Annual Reports and newsletters). Complete a list of funders who support these organizations and make copies of the lists. You will use these lists for research purposes.

Step 2: List all the possible categories that describe your program: e.g., youth, education, careers, science, community service, families.

Step 3: Check with your museum's development office and/or director to locate in-house fundraising research tools (publications, Annual Reports, Internet access, past funder files).

Step 4: Locate the Foundation Center nearest to your museum or at www.fdncenter.org. Large, medium and small cities usually have centers, which offer a rich library of resources at no cost on-site.

FOUNDATION CENTERS

Foundation centers can provide you with information on funders nearest to your museum. In addition, ask them to send you a kit of materials and membership information.

If your museum is a member of such an organization they can simply add your name to the access list. Larger foundation centers require access codes. Membership costs vary depending on the services offered.

Most Foundation Centers offer the following services:

- Staff to help with research
- Internet access
- Purchasable funder information on CD ROM
- Telephone consultations
- Printouts and photocopies of requested research
- Annual reports and publications
- Sector publications e.g., Religious, Capital, Endowment, Arts
- Foundation directories
- Foundation IRS information
- Fundraising workshops
- Proposal writing workshops
- Fundraising newsletters, publications, and related resources
WHAT IS YOUR RESEARCH GOAL?

Your goal is to develop a working list of potential funders that are a good match with your program goals. This list is used to begin contacting funders. You need to determine if your program is both eligible and if approaching the funder is feasible.

When you do research you are screening for:

- Funder’s missions and programs (to check match with your youth program)
- Size of grants
- Geographic and other limitations
- Types of grants, i.e., project money, endowments, conference money, matching money
- Recent fundees – types of institutions and types of projects
- Names of Trustees and Program Officers
- Application guidelines
- Special requirements (i.e., some funders do not accept unsolicited proposals, others do not accept proposals from museums but will consider museum-school collaborations if the school applies)

TIP: Checking Eligibility and Feasibility

**Geographic Limitations:** Some funders only fund within their home state, whereas others only fund where they have employees working.

**Types of Support:** Some funders only give program support while others only give general operating, capital or endowment support.

**Match with Funders’ Interests:** Make sure your youth program actually falls within the funders’ program interests. For example, some funders are interested in educating inner-city youth of color, but they are only interested in programs on a national policy level while you are focusing on your community.

**Length of Request:** Funders will usually indicate whether they fund single- or multi-year projects. Be sure your funding calendar conforms to theirs.

**IRS Status:** Most funders require proof of 501C3 status which verifies an organization’s non-profit status. If you don’t conform, don’t apply.

**Funding Similar Organizations:** Check a funder’s funding history to see if other museums like yours have received support. If not, your chances can be significantly reduced. In rare cases your program may be so compelling in the way it matches the funders’ mission that it will be considered despite the fact that the funder has not given to museums in the past.
WHERE TO LOOK

Online Resources
Most fundraising databases are available online. Large museums often subscribe to online services providing access to funding databases. You can get the same information in larger public libraries, university libraries and local foundation centers usually at no cost. The advantages of online research are speed, frequent informational updating, sorting, cross references and printouts. CD-ROMS are limited to the information originally inputted; they cannot be updated. Online databases are sorted by program type, geographic area, type of support, grant size and/or many other applicable variables.

Many foundations have websites with complete funding information including Annual Reports, application forms, lists of recent fundees, staff and mission/program descriptions which can be downloaded at low to no cost, depending on the center/library.

There are literally hundreds of fundraising websites. The following are some of the most important ones. Each will lead you to other sites, which could be useful.

www.fdncenter.org
The Foundation Center is a non-profit clearing house of information on grant makers and funding activity. The site provides information about the Foundation Center's programs, publications and the locations of collections and libraries. The site in linked to other fundraising websites including government funding and nonprofit services.

www.nonprofit.gov
The nonprofit Gateway Network is a site created by the White House to help nonprofit organizations access information regarding funding and services provided by federal agencies.

www.afpnet.org
The Association of Fundraising Professionals' website offers a fundraising resource center, professional certification, educational opportunities, directory of consultants and a chapter events listing.

Print Publications
There are literally thousands of print publications related to funding sources. The following list will provide you with basic resources to conduct a prospecting search. You will certainly find others of use as you begin researching.

Annual Reports
Annual Reports can be requested by telephone or by formal business letter. They provide an in-depth picture of a funder's mission, programs, areas of interest and philosophy. They often contain proposal guidelines and related information. Smaller foundations may not issue an Annual Report but they may offer program policy guidelines for potential applicants.
**Chronicle of Philanthropy**

The Chronicle of Philanthropy is a bi-weekly publication for the non-profit world containing articles on fundraising trends, lists of upcoming events, synopses of Annual Reports, listings of new grants and funders and a variety of related information. Print copies are available at every Foundation Center. Subscriptions and print copies are also available at:

The Chronicle of Philanthropy, Suite 700  
1255 Twenty-Third Street, NW  
Washington, D.C. 20037  
(202) 466-1200  
Also accessible online at [http://philanthropy.com/](http://philanthropy.com/)

**Corporate Philanthropy Report**

The Corporate Philanthropy Report is a monthly publication featuring a corporate sector (i.e. papermaking, pharmaceutical, sports products) and profiles of 5-10 corporate funders per issue. It also contains articles about corporate funding trends. Some fundraising libraries have copies available; most will order it if they don't have it already. You can also get copies from:

Corporate Philanthropy Report  
Aspen Publishers, Inc.  
For General Orders:  
Phone: (800) 638-8437  
Fax: (301) 644-3550

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**Fund Raising Mantra #1**

*When in doubt, call, find out!*

Never approach funders unless you are sure your program meets their guidelines.

**Fund Raising Mantra #2**

*No means NO!*

If you are told your project doesn’t match their guidelines, don’t argue. Thank them politely for their time and ask if they can suggest another funder. (You can go back later to see if their funding priorities have changed)
PART D: ESTABLISHING RELATIONSHIPS WITH FUNDERS

Establishing Relationships - Opening Doors
This is the single most important part of fund raising; developing a relationship with a potential funder so the funder knows and understands your organization and you understand the funder’s interests and funding practices. The process takes time and is cumulative; the more contact you have with the funder the stronger your relationship.

Fundraising Mantra #3

*People rarely give money to strangers!*
They give money to people they know.

Ways to establish relationships with funders:
Here’s where a list of foundation trustee/staff can come in handy. If you have a development office this is the time to brainstorm. The following techniques are helpful in opening doors:

- Circulating foundation trustee/staff lists among museum senior staff and trustees to see if there are any contacts. If there are, trustees can arrange introductions. Be sure to get your development director’s approval before contacting trustees. Strategies for establishing relationships with funders can also be appropriate for cultivating allies among the museum’s trustees.
- Writing query letters briefly reviewing your youth program and asking if the program meets the foundation’s funding interests.
- Telephoning the foundation’s program officers to discuss your youth program.

Funding Mantra #4

*Never approach a funder before checking with your director or development department*
It’s possible they already have submitted a funding request or are planning to do so in the future.
PART E: PRESENTING YOUR YOUTH PROGRAM

Program materials introduce your youth program to funders, colleagues, visitors, trustees, and the community. You should have multiple copies on hand to respond to queries rapidly. Program materials are used in proposals, brochures, inserts for press packets, sections of Annual Reports handouts at meetings and conferences or other publications presenting the museum and its services. Materials can be produced at low cost by photocopying and/or they can be done up as sleek brochures. You may use some or all of these materials, depending on whom you are trying to reach.

Creating Materials about Your Program
The following is a list of useful program materials to develop and/or collect for presentation purposes.

Introduction to the Museum
Every museum, large or small, has print material introducing the museum. These materials include Annual Reports, brochures, press releases, newspaper articles and boilerplate texts used in proposals. In mid- to large-size museums, the public relations department assembles a variety of hand-picked materials in a folder created with pockets and a place for a business card.

In selecting introductory materials keep in mind the following information which funders need to know:

- Museum mission
- Museum location
- Museum trustees
- Museum staff
- Budget size
- Number of visitors
- Types of services offered
- Museum funders

Program Goals
Every description of your program must have a clear, short and understandable statement of your program goals. Goal statements identify the purpose of your program and what you plan to accomplish.

Examples of Goal Statements:

- The goal of the XXX youth program is to nourish and sustain interest in science among inner-city, middle-school girls of color.
- The goal of the Science Career Ladder is to provide inner-city youth of color with access to science and science teaching careers.
- The goal of Evenings at the XXX museum is to involve the parents of program participants in their children's education.

Program Descriptions
Program descriptions explain what you will do in order to meet your goals by providing details on all program activities. They include a listing of program activities, a calendar and/or timeline, available resources and project staff.
**Demographic Data**
Demographic data describes the population your program/museum serves. In addition to helping the reader understand the age, education level, ethnic background, languages spoken, family employment and other pertinent information; demographic data shows your awareness and sensitivity to community needs. Large museums have such data available in their development office. Local newspapers, public libraries and municipal governments are usually reliable outside resources for this type of information.

**Impact Data**
Impact data shows that your program works. This data is so important it can make or break your program’s future. If you can prove your program is achieving its goals, you can make a strong case for funders to invest in your efforts. If you have weak or no impact data, it is hard to convince someone that your program is or will be successful.

**Start-up Program Data**
Qualitative data are data from program participants and other stakeholders in the form of statements, impressions and attitudinal surveys. Qualitative data are the only data available for start-up programs, meaning programs that have been operating for less than three years.

Examples of qualitative data:
- A survey of 30 youth participants done by XXX Consulting Associates in 2007 indicated
  - 90% of students felt they had a better understanding of science after working at the museum.
  - 85% of student participants reported that their science grades improved after working at the museum.

Quantitative data presents hard numbers and statistics for programs that are at least 3-years old.

Examples of strong quantitative impact data:
- A survey of 30 program alumni conducted in 2006, by XXX Consulting Associates showed that
  - 85% of participants enrolled in college after graduating from high school
  - 90% of participants became museum Explainers upon completing the pre-Explainer program
  - 78% of participants took elective science courses in high school

**TIP:**
Photographs of participants engaged in program activities bring the program to life and provide important demographic and contextual information. If you have a limited budget, color photocopies can be very effective.

Participants’ bios are short informational pieces about youth participants with photo portraits. They provide strong visual impact and human interest information. Participant bios help the reader identify with youth. Bios tell a little about participants’ families, ethnic identity, school experiences and aspirations. Participating youth can help write their bios and be sure to get parental permission before using these materials to promote your youth program.
Program Staff
A listing of program staff by name and responsibility with short bios shows you have qualified people working with youth. You may want to include photographs to show staff diversity, age and to add a human component to your staff list.

Museum Resources
Present the resources available to youth in your program using lists, photos and texts, e.g., use of 50 acres outdoor environmental center, use of medical school laboratory, use of museum collections. You might want to include photographs.

Partnerships
Collaborations/partnerships are cost-effective ways of sharing resources, expertise and extending program impact. They are often required by funders. Public-private partnerships refer to corporate and non-profit collaborations. Community-based organizations such as local churches, Boys and Girls Clubs, after-school programs and ethnic organizations are important partners for your youth program because they bring expertise about the youth and their cultures.

All partners should be involved in program planning. You will need evidence of true partnerships in the form of program design and letters of commitment.

If your program is a partnership or collaboration among several agencies, e.g. museum and school, museum and church, museum and local youth group, be sure to give each organization equal space and equal treatment in the program description. Background information about each participating organization should include its particular mission, a short history, nature of its involvement in your youth program, resources brought to your program and the participating program staff.

Testimonials
Testimonials are statements by program participants, staff, and parents about their experience with your youth program. They can be collected formally by asking participants for their written impressions of their experiences or informally through observation and recording.

Examples:
"I didn't know what I wanted to do after graduating from high school. Working at the museum helped me decide to become a teacher."
"Since my daughter joined the museum youth program she became a much happier child at home."

TIP:
Start collecting materials for impact data when you begin your program. Keep records of participants’ addresses, phone numbers, schools, majors or courses taken, extra-curricular activities, statements about their experiences in the museum and at school, history of relationship with the museum. You can't collect impact data retroactively!!!!

TIP:
Funders recognize the difference between true collaborations, where each party brings needed expertise and resources that are part of program design, and pro-forma partnerships, created to attract funds.

TIP:
Photographs - Charts
Presenting information through photographs and charts is a powerful way to provide important information about your program. Many museums provide graphics services to program staff for this purpose and some have photo archives.
PART F: WRITING YOUR PROPOSAL

PROPOSAL WRITING MANTRA #1

Follow the Guidelines. Do What You Are Told.

REQUEST LETTERS

Some funders ask for a letter of request rather than a full proposal. A request letter is similar to a proposal. It contains a project description, project goals and objectives, budget information as well as additional information to help the reader understand your project. Request letters are usually 3-5 pages. They are written on museum letterhead in the form of a business letter.

Request letters are generally required by funders who require a short project description before deciding whether or not to consider a full proposal. If you are unsure about how to approach a request letter, check with your development department or ask a colleague at another museum.

PROPOSAL WRITING

This section will walk you through proposal writing. For every potential funder you approach there are many other organizations competing for the same funds. Your presentation must be clear, easy to understand, convincing, error-free and attractive. The funder must conclude that your goals match his/hers and that you have an effective, realistic and well-developed plan for achieving you goals.

Writing a proposal is a straightforward activity - it means doing exactly what you are told. Follow the guidelines religiously. To insure compliance copy the guideline sections in the same order, using the same headings and numbering that appear in the guidelines. Use this as the template for your proposal. If you are unsure about anything in the guidelines, call the funder and ask.

Some funders accept standard application forms, available through a local foundation center or by calling the funder directly or by accessing them from the funder’s website. The sections that follow are based on a standard proposal format. An individual funder may have different requirements but the information in these sections is sure to appear somewhere in the proposal or on the foundation’s application form.

TIP:
Memorize proposal writing mantra #1. Your proposal must comply with the funder's instructions regarding number of pages, font size, margins, line spacing and appendices. It’s wise to use the funder's outline as your proposal outline. Most funders will not read a proposal that doesn't comply with their instructions.
STANDARD PROPOSAL FORMAT

Project Summary
The project summary, a short but detailed project synopsis, is the first thing the reviewer reads; like all first impressions, it is very important! The summary includes goals, objectives, target audience, program activities, project length, evaluation and dissemination plans. If you can't summarize your project in 2-4 paragraphs your project is too vague. Writing a summary helps focus your thinking. The summary orients the reader to the proposal contents.

Need
The need section indicates that your program responds to a real problem and that you are aware of both the problem and other attempted solutions. Strong needs sections must have hard data (statistics) that prove the need exists. If, for example, you are asking for money to support an after-school youth program to provide urban youth with a safe, productive after-school experience, find data showing high crime rates among unsupervised teens during after-school hours. Always cite the source of your data using footnotes, endnotes or citations within the text.

Include a summary of other youth programs addressing the same need and show how your program fits into the bigger picture. Ignorance of similar efforts is a serious flaw in a proposal; most funders are fully aware of other efforts and expect you to be well informed. Funders are usually looking for new investment opportunities unless your project is a replication program.

Youth programs meet the needs of youth and the museum. This important aspect of your youth program should be discussed in the needs section.

Youth programs help museums to:

- Diversify museum audiences
- Provide on-floor interpretation and teaching assistants
- Provide museum education staff with direct, ongoing contact with teen audiences and their needs
- Establish relationships with hard-to-reach communities
- Increase community good will and involvement with the museum
- Bring youth, usually not represented in museums, into these organizations. Additionally some youth programs help museums fulfill their missions.

Target Audience
A strong proposal is clear about the target audience. It includes detailed information about who they are, their relationship to the museum, recruitment plans, admission criteria, which agencies/stakeholders will be involved and why the program fits this audience's developmental level and needs. The better you understand the target audience, the better your program design will be. Your community partner can help you understand and reach your target audience.

Program Goals and Objectives
Make sure your goals match the funder's goals. Goals are the broad program outcomes you hope to achieve - the what. Objectives are the means of achieving those goals - the how.
Examples:
- **Goal:** To involve parents of teen participants with their children's education.
  - **Objective 1:** Host five evening dinner meetings for 20 teen participants and parents to include hands-on science activities, information on math/science high school requirements and math-science careers.
  - **Objective 2:** Provide one-on-one counseling for parents of teen participants on school progress and course selection.

**Museum History and Capacity**
Somewhere in the proposal you must provide evidence that the museum has the infrastructure, administration, finances and resources to support your youth program. If there is not an explicit section for this information, you can work it into other sections of the proposal or include it in the appendix. This section gives the museum's mission, location, size, annual budget, synopsis of its exhibitions and programs, physical and staff size, number of annual visitors and history with youth programs. If there are particular programs, exhibitions or services unique to your museum they should be described here.

**Examples**

Your museum:
- Trains 80% of the science teachers in the surrounding districts
- Provides traveling exhibitions to 10 other museums annually
- Uses a community-advisory committee to plan all exhibitions and programs
- Has delivered youth programs for the past 20 years
- Is located in the inner-city and is heavily used by community groups

**Museum Staff**
Funders want to know that the staff is well qualified for their positions and that there is longevity and stability. Some proposals ask for staff resumes in the appendices, others in the body. Emphasize the qualifications that pertain to your youth program when describing youth program staff e.g., teaching background, work as a camp counselor.

**Project Design**
This section describes all project components in detail. Youth program components include: recruitment plans and procedures, attrition plans, orientation activities, project activities, workshop topics and agendas, youth roles, sequences of roles or activities, collaborating organization roles, resources, calendar, activities for parents and work with schools.

**TIP:**
A museum with youth program staff drawn from the target audience community makes a strong statement about the institution’s awareness of program participants and community needs.

Project calendars can be presented in chart form, on timelines, or by lists. Clearly separate each project year and break down activities by season, month, week or day, as appropriate.
Project Administration
This section outlines staff responsibility for project-related tasks and functions. These include:

- Overall project supervision
- Day-to-day project management
- Project-related correspondence
- Record keeping
- Data collection
- Liaison with advisors, collaborators, evaluators, school personnel, etc.
- Report to funders
- Budget management

Advisory Board
Advisory Boards are essential in order to get input and feedback from experts and stakeholders in areas related to your youth program. Federal funders expect to see nationally recognized advisors. A strong youth Advisory Board includes local or national experts in social, cognitive, emotional and physical development of youth. Youth programming, youth services and community members (i.e., parents, teachers, religious leaders and members of partnering organizations) are people who interact with youth and their families in many different settings.

An Advisory Board might have between 8-12 members. The full Board generally meets a few times annually and meetings with sub-groups or individuals are held as necessary. Advisors are also expected to be available by phone, email or fax. Your program design should include Advisory Board meetings strategically timed to get Board input when you need it. Depending on funding, Advisory Board members may be paid a small honorarium ($200 - $300) and travel expenses. If the funder traditionally has funded projects that are advised by national experts, be sure to include national advisor's travel expenses and refreshments for meetings as you develop your budget. Generally, however, the closer advisors are to your museum geographically, the lower their travel costs will be.

Evaluation (see preceding module)
Evaluation is the process by which you assess how well your youth program is meeting your goals and objectives. Many proposals build in monies for outside evaluators who are more objective than museum staff because they are not vested in program outcomes. Evaluators can perform any of the following services:

- Develop evaluation instruments - surveys, questionnaires and observation guides
- Collect data
- Teach your staff data collection and documentation methodology
- Analyze data
- Write evaluation reports
- Provide ongoing feedback during program development

Strong proposals include the resumes of outside evaluators, goals and objectives that will be evaluated and methods for evaluation. Many designers send program descriptions to outside evaluators who, in turn, provide an evaluation strategy to include with the proposal.

The strength of the evaluation plans can determine the fate of a proposal. Funders take evaluation very seriously.
**Dissemination**

Dissemination is how you get others to know about your youth program. Typical dissemination activities include:

- Presentations of youth programs at professional conferences
- Workshops that show others how to adapt your youth program in their museums
- Articles about your youth program in professional publications
- Online websites for your youth program
- Replication manuals for your youth program
- Videos or DVD’s about your youth program

**QUALITY CONTROL STEPS**

**Internal Consistency**

Internal consistency is a quality check, essential before submitting any proposal to a funder. Make sure your statistics and terminology are consistent throughout the proposal. If you say your museum serves 150,000 annual visitors on page one, make sure you use that same number on page eight. If you call the person who works directly with youth the Youth Coordinator in the proposal text, be sure you use the same title in the budget. Internal consistency makes it easier for the reader to follow your thinking. Some reviewers will reject proposals that don't show internal consistency. Make sure you check your budget against your narrative for internal consistency.

**Proof Reading and Professional Input**

Send a draft of your completed proposal to selected colleagues for their critique, input and edits. Limit your readers to 2-3 colleagues whose experience and eye for detail are exemplary to garner few but quality suggestions. Never submit a proposal before it has been reviewed by at least three experienced colleagues. Check for grammar, spelling, punctuation and conformity to required type size and page layout. Computer spell checks are insufficient. Don't rely on the computer to catch all mistakes.

Keep in mind that once you submit your proposal, the funder will probably ask several experts in the field to review and comment on your proposal. Some reviewers won't read a proposal if they find errors on the first page. If you can't find colleagues to proof your proposal, it's well worth the investment to hire a proofreader.

**Boilerplate**

This term refers to text, usually generated by the development department, which is used over and over again in different proposals. Boilerplate text includes: mission statements, staff bios, institutional descriptions, trustee lists, organizational charts and program descriptions. The more boilerplate text you have the easier your job. When you complete your proposal save the boilerplate text on a disc and file it with the hard copy. You will certainly use sections for other proposals and other staff may need information in your proposal for development or marketing purposes. Large museums are often networked so boilerplate text can be downloaded by any department.

**BUILDING A BUDGET**

Budget building can be a simple or complex task. Simple or complex, your budget must be checked for consistency with the narrative and for mathematical accuracy. The larger the request and the longer the project lasts, the more complex the budget. All budgets are educated estimates of project cost; they are not final commitments. During the course of a
funded project there are opportunities to amend the budget if you find you have over-or underestimated in any category. Some funders allow 10% leeway and require formal requests for larger budget modifications.

In building a program budget for the first time, ask the business office or the museum’s financial officer for assistance. They can supply you with needed financial information and check your final budgets for accuracy. If you can't get help at your museum call an experienced colleague.

In many museums budgets are built by teams composed of program, development and/or business staff. Some museums will not release salary information to program staff. In that case the development office develops the budget with program staff input.

Budgets are usually presented in single-year segments as well as cumulatively. If you have a three-year project your budget will have four pages, year #1, year #2, year #3 and a cumulative budget for year #4 showing the totals for all three years.

Most budgets are presented in two sections - Personnel and Other Than Personnel (OTPS). The funding guidelines will indicate budget format. If they don't, you can use any format that explains your cost projections (see sample budget on page 20-23). If you are building a complex budget, work with the business office or financial officer.

Budgets are generally built on spreadsheets. Check with your business office to see if there is an Excel or Lotus spreadsheet program available. If so, collect the information and work with the business office to enter the figures on spreadsheets. Spreadsheets are very helpful, but not essential, in building and revising budgets. They are well worth the trouble it takes to enter data.

Whether you are building a simple or complex budget the steps are the same. You need to know four things:

1. The pro-rated salaries of project staff (percentage of the annual salary allocated for the project - check with business office or department head)
2. Fringe benefit rate (check with business office)
3. All other project costs
4. Allowable indirect costs (costs of museum overhead not directly related to the project – heat, electricity, etc.) you need to know the indirect percentage rate. Ask the business office or check other proposals.

**SAMPLE BUDGET**

**Budget Scenario:**

This budget is for a year-round youth program for 20 inner-city youth of color, ages 15-17. The program has two components: a six-week summer training experience at the local science-technology center, followed by a 35-week Explainer program in the museum for summer trainees paid with stipends.

Summer training involves learning how the museum works, participating in training workshops, learning to explain ten exhibits to visitors, learning to conduct one hands-on workshop for children ages 5-10, hosting the information desk and assisting in the museum shop. Youth are recruited from members of the local Boys and Girls Clubs and screened by
Boys and Girls Club and museum staff. The staff of both organizations plan and deliver the program.

The program includes an orientation for participants' parents, a presentation at the end of the summer and two evenings for parents during the school-year, one in the fall and another in the spring. The evenings include behind-the-scenes tours led by participants, an informal meal for parents, participants and project staff, and information about college admissions and scholarships.

There are ten advisors drawn from local community-based organizations. All live within commuting distance of the museum. There are two advisory board meetings over the year. The evaluator lives in another city and will attend advisory board meetings, prepare and administer evaluation instruments, analyze data and write the final report.

Museum Staff includes:
- One full-time youth coordinator (museum staff)
- Two part-time museum education staff
- One part-time museum secretary

Two Boys & Girls Clubs staff will work on the project part-time

Consultants include:
- One external evaluator and ten advisors

**Sample Budget Worksheet – Step 1**

Determine all museum staff salaries prorated by the amount of time they will devote to the youth program.

<table>
<thead>
<tr>
<th>Staff Salary Breakdown:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Youth Coordinator:</strong></td>
<td></td>
</tr>
<tr>
<td>Full time @ $28,000 Annual Salary</td>
<td>$28,000</td>
</tr>
<tr>
<td><strong>Education Staff:</strong></td>
<td></td>
</tr>
<tr>
<td>25% Time @ $24,000 Annual Salary</td>
<td>$12,000</td>
</tr>
<tr>
<td><strong>Secretary:</strong></td>
<td></td>
</tr>
<tr>
<td>15% Time @ $24,000 Annual Salary</td>
<td>$3,600</td>
</tr>
<tr>
<td><strong>Graphics Designer:</strong></td>
<td></td>
</tr>
<tr>
<td>4% Time @ $25,000 Annual Salary</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Total Salaries</strong></td>
<td><strong>$44,600</strong></td>
</tr>
</tbody>
</table>

| Calculate Fringe Benefit: |  |
| Fringes @ 20% = Total Salaries x Fringe Rate | $8,920 |
| **Total Salaries + Fringes** | **$53,520** |
### Sample Budget Worksheet–Step 2
Determine all related program costs - Other Than Personnel Expenses (OTPS)

<table>
<thead>
<tr>
<th>Program Costs:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supplies:</strong></td>
<td></td>
</tr>
<tr>
<td>20 Participants x $300 (workshop materials, aprons, badges)</td>
<td>$6,000</td>
</tr>
<tr>
<td><strong>Printing:</strong></td>
<td></td>
</tr>
<tr>
<td>25 Handbooks @ $3.00</td>
<td>$75</td>
</tr>
<tr>
<td>600 Project Description Brochures @ $0.50</td>
<td>$300</td>
</tr>
<tr>
<td><strong>Participant Stipends:</strong></td>
<td></td>
</tr>
<tr>
<td>20 x $1000</td>
<td>$20,000</td>
</tr>
<tr>
<td><strong>Honoraria:</strong></td>
<td></td>
</tr>
<tr>
<td>10 Advisors @ $200</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Boys &amp; Girls Club Contract:</strong></td>
<td></td>
</tr>
<tr>
<td>2 staff @ 20% $26,000 Annual Salary</td>
<td>$10,400</td>
</tr>
<tr>
<td><strong>Travel:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Evaluator:</strong></td>
<td></td>
</tr>
<tr>
<td>5 Trips @ $400 Airfare</td>
<td>$2,000</td>
</tr>
<tr>
<td>10 days @ $250 Per diem (Hotel, Food, Ground Transport)</td>
<td>$2,500</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$350</td>
</tr>
<tr>
<td><strong>Phone, Photocopies, Email, Postage</strong></td>
<td>$700</td>
</tr>
<tr>
<td><strong>Meeting Refreshments/Meals:</strong></td>
<td></td>
</tr>
<tr>
<td>3 x 40 People x $25 Each</td>
<td>$3,000</td>
</tr>
<tr>
<td><strong>Total OTPS</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$52,325</td>
</tr>
</tbody>
</table>

### Sample Budget Worksheet–Step 3
Calculate direct costs

Direct Costs = Salaries + Fringes + OTPS

($53,520 + $52,325) = $105,845
Sample Budget Worksheet–Step 4
Calculate indirect costs

Indirect Costs
Indirect costs refer to museum overhead, the expenses that must be incurred in order to create an organizational infrastructure that can deliver your youth program. Indirect costs include heat, mortgage, electricity, maintenance, photocopy machine maintenance, computer repairs, etc. The business office will tell you your museum's indirect rate.

The indirect rate is a percentage of the direct rate.

Example:

<table>
<thead>
<tr>
<th>Total Direct Costs</th>
<th>$105,845</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% Indirect Rate=10% x 105,845</td>
<td>$10,585</td>
</tr>
<tr>
<td>Total Project Costs = Direct + Indirect</td>
<td>$116,420</td>
</tr>
</tbody>
</table>

Your one-year project will cost almost $116,500. If you are advised to reduce the size of the budget, decide on ways to modify the project without losing its integrity. Perhaps you can eliminate travel expenses for the evaluator by using a local expert; replace advisors’ honoraria with reimbursement for their transportation costs; adjust staff time after the summer session; or even reduce the number of weeks the participants receive a stipend.

Matches
Rarely is a project funded by a single funder. In fact, some funders may even require matching funds to receive a grant. Let’s say your program costs $100,000. Funder A will provide up to 75% ($75,000) of the cost and require a 25% match ($25,000). You need to find a second funder to provide the remaining 25% or you may be permitted to match the money with in-kind contributions (non-cash) made by you or other contributors. Often government funders require a match, possibly a 1-1 match in which you would be expected to raise one dollar for every dollar provided.

Requesting matching money is relatively easy since you already have a proposal and a budget. Review the budget and see if you can break up the project so each funder pays for a part of the whole program. In our sample we are requesting matches for student stipends and Boys & Girls Club staff time. The museum is matching the 10% indirect cost.
## Youth Program Sample Budget

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Request</td>
<td>Match</td>
</tr>
<tr>
<td><strong>Personnel</strong></td>
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<td>Funder A</td>
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</tr>
<tr>
<td>Youth coordinator</td>
<td>28,000</td>
<td>28,000</td>
<td></td>
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<tr>
<td>Education staff</td>
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<td></td>
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<tr>
<td>Secretary</td>
<td>3,600</td>
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<tr>
<td>Graphics designer</td>
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<tr>
<td><strong>Total Salaries</strong></td>
<td><strong>44,600</strong></td>
<td><strong>44,600</strong></td>
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<tr>
<td>Fringes @ 20%</td>
<td>8,920</td>
<td>8,920</td>
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<tr>
<td><strong>Total Salaries + Fringes</strong></td>
<td><strong>53,520</strong></td>
<td><strong>53,520</strong></td>
<td></td>
</tr>
<tr>
<td><strong>OTPS</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Supplies</td>
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</tr>
<tr>
<td>Printing</td>
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<td>375</td>
<td></td>
</tr>
<tr>
<td>Stipends</td>
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<td>20,000</td>
<td></td>
</tr>
<tr>
<td>Honoraria</td>
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<td></td>
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<tr>
<td>Evaluator</td>
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<tr>
<td>Boys &amp; Girls Club Contract</td>
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<tr>
<td>Travel</td>
<td>3,964</td>
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<tr>
<td>Postage, Photocopying, Email</td>
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<tr>
<td>Meetings</td>
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<td>3,000</td>
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<tr>
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<td><strong>21,952</strong></td>
<td><strong>30,400</strong></td>
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<tr>
<td><strong>Total Direct Costs</strong></td>
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<td><strong>75,472</strong></td>
<td></td>
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<tr>
<td><strong>Indirect Costs @ 10%</strong></td>
<td><strong>10,585</strong></td>
<td></td>
<td><strong>10,585</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>75,472</strong></td>
</tr>
<tr>
<td><strong>Total Project Cost</strong></td>
<td><strong>116,420</strong></td>
<td></td>
<td><strong>40,985</strong></td>
</tr>
</tbody>
</table>

Use this format for the entire budget. List the sources of your matches in the proposal text and in the budget narrative.

**Budget Narrative/Detail**
The budget narrative is the section where you describe, for each budget line, the purpose and breakdown of that expenditure. You also list matching fund sources. Budget detail shows the calculations you used to arrive at your figures.

**Examples of Budget Details for Sample Budget:**

- Printing - 100% Request
  - 25 Handbooks @ $3.00
  - 600 Project Description Brochures @ $.50
  - $75
  - $300

- Stipends for 20 Youth, $1,000 each
  - 100% match from Good Folks Foundation
  - $2,000

- 10 Local Advisors’ Honoraria @ $200 per Advisor
  - $2,000
In-Kind Contributions
In-kind contributions are non-monetary means of support. Some funders allow you to count in-kind as matching money. In-kind contributions are: use of space at local school, use of lab equipment at local hospital, donation of equipment or supplies, donation of professional staff time, etc.

Appendices
Appendices are the add-on sections at the end of a proposal that allow you to supply additional information not included in the body of the proposal. Check guidelines carefully. Some funders set the number of allowable appendix pages; others don’t allow any appendices.

Typical appendix sections include:

- Institutional profile and/or history – usually boilerplate available from development or director's office
- List of trustees from development or director's office
- Staff résumés and bios - usually on file with business office, otherwise collect them from relevant staff
- List of advisors, possibly with bios (one to three sentences are sufficient to show expertise and/or community involvement)
- Letters of commitment from advisors, colleagues and partner organizations, ideally from the director. These letters should be provided on professional stationery committing to some project aspect (recruitment, use of space, advertising, outreach, participation in upcoming workshop, etc.)
- Bibliography of studies and publications used to develop the program
- Sample program products—videos, workbooks, newsletters, etc.
- Audited financial statements for the museum

Handling Proposal Rejections and Success!
Everyone gets rejected at some time in their fundraising activities. Rejections can be used to leverage contact with funders and to learn how to strengthen your program and/or proposal. Always respond to a rejection and transform each one into a learning experience by asking the funder for feedback.

In addition, for successful funding presentations, it is essential to ask what won funders over, so you can accentuate that element within future fundraising efforts.

TIP:
Always respond to a rejection. This is one way to stay in contact with a potential funder. Write a thank you letter expressing your appreciation for the time taken to review your proposal.

Call or write, requesting a meeting to discuss how you can strengthen your proposal and reapply at a later date.

File your rejection letter and mark your calendar with the next deadline from that funder. Call or write the funder a few months before the next deadline indicating your interest in reapplying. Request a meeting and/or updated guidelines.
TERMS TO KNOW

Accessibility: Easily approached environments, programs or activities.

Advisory Board: A group of experts in a field assembled periodically to advise on content, methodology and to provide information to program developers. Most funders expect to see Advisory Boards in proposals.

Annual Report: A yearly report issued by organizations outlining their major accomplishments and stating their philosophy, mission, financial status, Board of Directors, staff and trustees. In the case of foundations, annual reports also have a listing of their various programs (types of efforts which receive funding) including grantees, types of projects and amounts awarded. Annual Reports are a research tool for fundraising. Some annual reports contain guidelines for grant applicants.

Attrition: The drop out rate. Attrition is an important factor in program development. Low attrition is a strong indication of program effectiveness.

Audience: The particular group of people for whom a program is designed. Examples are pre-schoolers, inner-city youth, middle-school girls, etc.

Audit: A legally required series of procedures to test fiscal transactions and internal controls used by an organization. An audit is a formal review of an organization's financial status and accounting procedures. The end result of an audit is a professional opinion written by the accounting firm performing the audit.

Benefit: Gain to a particular party. Strong programs provide benefits to both the institution and program participants. Examples are youth programs that expand the science experiences of participants and provide the museum with diverse floor staff.

Bidding: A competitive process where contractors estimate project costs and submit their fees for a particular job. Many museums use bidding to either conform to city government regulations or to determine realistic project costs. Bidding is common for capital projects, exhibition development and other large projects.

Board of Directors: Volunteers who oversee an organization. See trustees.

Bottom Up: Momentum or input that comes from people at the lower end of an organizational hierarchy.

Budget: An itemized listing of estimated income and expenses for a defined time period.

Capital Funds: Monies that are restricted to building projects, e.g., renovation, expansion, new buildings, etc.

Capital Campaign: A publicly announced effort by an institution to raise capital funds. Capital campaigns have time limits and financial goals, i.e., to raise eight million dollars for a new wing on a building over 5 years.

Charitable Trust: An organization that functions as a foundation.
**Collaborations:** Arrangements between two or more organizations to join staff/resources in order to create and deliver a program. Examples are: museums and schools working together on youth programming. The school might assist with recruitment and provide a liaison between the school and museum. The museum would report on the student's progress to the school.

**Community Based Organizations:** Non-profit organizations that exist within a particular community to serve its residents. Examples are churches, libraries, museums, Boys & Girls Clubs, etc.

**Consultant:** An outside expert hired on a temporary basis to provide guidance, resources and expertise to an organization. Some organizations use the term consultant and contractor interchangeably. Examples are: proposal writers, evaluators, graphic designers and exhibit fabricators (see contractors). Organizations often use consultants and contractors because they either lack expertise, need expertise only for a short time on a particular project or because it is cheaper or more efficient to work with outside consultants. Consultants and contractors do not receive fringe benefits and are not considered employees.

**Contract:** An official, signed agreement, between a museum and outside party, outlining the services to be performed, time period, payment schedule and other terms developed by both parties.

**Contractor:** A professional expert, often working for or owning a separate company, engaged on a temporary, contractual basis at a prearranged fee, to deliver needed services to an institution (see consultant).

**Corporate Foundations:** Organizations formed by corporations for the purpose of distributing corporate profit dollars to organizations or individuals that meet their criteria for granting monies. Many corporate foundations restrict their giving to geographic areas where their employees work.

**Cultivation:** The process of developing a relationship between an organization and a potential funder.

**Developmental Level:** Descriptions of the physical, cognitive and emotional characteristics of youth at a particular age. Examples are adolescence, latency, young adulthood, etc.

**Direct Costs:** Costs that are directly related to a particular program and would not exist if a particular program didn't exist. Examples are: program supplies and equipment, program-related travel, program-related evaluation and sometimes the percentage of time a full-time staff member devotes to working on a particular program.

**Diversity:** Variety within a group. In youth programs the term is usually used to describe participants from different ethnic backgrounds.

**Donor:** Someone who gives money to an organization to support its efforts.

**Earned Income:** Income earned by the exchange of museum services for money. Examples are workshop fees, museum shop profits, museum admission fees, etc.
Endowment: Funds donated to an organization for the purpose of providing ongoing income. Endowment monies are invested and the interest usually provides income; individual endowments have different rules as determined by the donor and Board of Directors. The larger the endowment, the more fiscally solvent the organization.

Equipment: Any machinery or apparatus that costs over $500. Different funders have different criteria for equipment cost. Be sure to check the regulations before writing a budget.

Equity: Fairness, equal access; the result of efforts to "level the playing field," thereby providing those traditionally underserved with the opportunities and supported needed for success.

Evaluation: A process used to assess the effectiveness of a program by comparing results with program goals.

Expenses: Program-related costs.

Feasibility: An assessment of how realistic a program or plan is. Feasibility studies are often commissioned by museums before beginning large, expensive programs such as expansions.

Federal Register: A weekly publication of the federal government listing all federal grant opportunities and requirements for funding eligibility, organized by agency.

501C3: An IRS designation for non-profit public organizations. Proof of 501 C3 status is usually required by funders.

Focus Group: An ad-hoc group of people representative of a target audience assembled for a short time period to help an evaluator assess prior knowledge, interest or to get reactions to a projected program or exhibition.

Formative evaluation: A process used during program/exhibition development to assess effectiveness and adjust the program/exhibition accordingly. Examples of formative evaluation results are: label copy that is too hard to understand, youth programs that mix incompatible age groups, etc.

Foundation: Legal entities formed for the purpose of giving money to selected organizations or individuals in order to achieve the foundation mission.

Fringe Benefits: Costs of employee benefits. Examples are: health benefits, employee pension contributions, etc. These are usually calculated as a percentage of employee salaries.

Front-end Evaluation: A process used early in exhibition and program development to determine what a particular audience thinks, knows and wonders about the subject to be presented. Front-end evaluation helps the exhibition/program designer select content and approaches for a particular audience.

Funder: An individual or an organization who gives money to an organization to support its efforts.
**FTE:** Abbreviation for Full Time Equivalent. Used in developing budgets when calculating part time work by comparing the hours to a full-time day or work week. Example: Seven youth work five hours each weekly or a total of 35 hours per week. The science center's full time week is 35 hours. This would be calculated in a budget as one FTE.

**Goal:** A desired result or condition for a program or exhibition. Goals describe major results. Goals are general, long term and usually non-measurable. Examples are: Nurture and sustain youth's interest in science. Assure that adult caretakers and family members of youth participants feel comfortable at the museum and have access to museum resources and museum staff.

**GOS:** Abbreviation for General Operating Support. GOS is unrestricted money; it is much more difficult to raise than program-related support and much more flexible.

**Grant:** Monies awarded an organization to carry out a particular project.

**Honoraria:** Monies included in budgets to acknowledge contributions of guest speakers, advisors and others who are basically volunteering their time. This is a small thank you token, far below the true cost of the service.

**Impact Data:** Data collected and arranged to show the long-term impact of a program or exhibition. For instance, survey results of youth program participants over a five-year period showing an increase in their selection of science courses.

**Independent Foundation:** An IRS status designated to a foundation that is neither corporate, public nor private.

**Indirect Costs:** Costs that are related to the infrastructure of an organization and are therefore necessary for that organization to function. Examples are: heat, light, cleaning, employee health benefits, pension plans, audits, etc. Larger organizations that receive significant federal support have negotiated federal indirect rates.

**In-Kind Contribution:** A non-cash contribution to an organization or program. Examples include space, use of equipment, loan of personnel, etc.

**In-the-black:** Functioning with a profit.

**In-the-red:** Functioning with a loss.

**Leveraging Grants:** The process of finding interested new funders in supporting a project because other funders have already joined the effort. Lists of existing funders are often included in a proposal to show that other funders think the project is important enough to support. The better known the committed funder, the better the leverage opportunity.

**Longitudinal Data:** Information collected over a long time period, well beyond participation in a program. Longitudinal data are usually effective impact data because it shows the long-term effects of participation in the program.
**Matching Money:** Money raised in proportion to pledged funds. Matching monies are a form of leveraging. A funder agrees to grant an organization a certain sum if they raise a match. Matches can be 1:1, 2:1, etc. An example would be that a funder agrees to grant $100,000 to an organization if they can show a 1-1 match; the organization must raise an additional $100,000 from other sources to get the first grant.

**Mission Statement:** A succinct statement of the reason an organization exists, usually developed by trustees and staff and approved by the Board of Directors. The mission statement is the official presentation of the organization's purpose to the outside world. For example: to promote public understanding and appreciation of natural science through exhibitions and programs.

**Nonprofit/not-for-profit:** An organization that exists in order to deliver a public service and reinvests its profits, if there are any, in order to expand or enhance its services. Non-profit organizations do not have shareholders and must have 501C3 status.

**OTPS:** Abbreviation used in budget development for Other Than Personnel Services. These are all services not related to permanent staff costs, e.g., supplies, materials, travel and equipment. Outside consultants are included in the OTPS section of a budget.

**Objective:** A specific, measurable and achievable short-term result consistent with a goal. Objectives are similar to goals in that they describe future results. Objectives are specific (who does what), measurable (what specific outcomes are expected), time-bound (when) and achievable. Examples are: Retain 80% of youth participants in youth program over three years; 75% of youth caretakers and families will attend two museum-hosted events over a one-year period.

**Off-site:** Services offered in the community rather than in the museum. For example: workshops at libraries and churches given by museum staff.

**On-site:** Services offered at the museum.

**Outcomes:** Results of a particular program or experience.

**Outreach:** Programs or services offered outside the museum (see off-site). For example: science lessons offered by museum staff in schools.

**Outside evaluator:** An evaluation expert or firm, not on the museum staff, hired to conduct the evaluation of a particular project. Outside evaluators are used because they have no vested interest in program outcomes and are therefore neutral and impartial.

**Overhead:** The built-in costs that are essential in order for an organization to do business (See indirect costs). Examples are heat, light, furniture, maintenance, etc.

**Partnerships:** Another term for collaborations. Partnerships and collaborations are often preferred to single institutional programs because they are cost effective and expand program impact.

**Part-Time Employment:** An ongoing relationship with an employee based on services delivered for less than the full-time weekly equivalent. Salary is pro-rated. Most organizations have an hourly minimum required for eligibility for fringe benefits.
**Philanthropist:** An individual who makes donations to organizations or individuals in order to improve an aspect of the quality of life. Examples are Doris Duke, Bill Gates, Bill Cosby, the Rockefellers, etc.

**Philanthropy:** The effort to improve the status of mankind through charitable donations.

**Pre-post Testing:** A quantifiable evaluation technique where participants are tested before and after an experience to determine measurable changes as a result of the experience. For example: testing science vocabulary before and after a workshop and comparing results.

**Pilot Projects:** Small, shorter versions of a larger program used to test program ideas and procedures.

**Planning Grants:** Grants to support the development of a project infrastructure a project in order to prepare a full proposal. Planning grants are awarded for complex projects involving many collaborators. They typically pay for research, meetings, and ongoing communication among project participants.

**Private Foundations:** Non-government foundations that operate under specific regulations which include having an IRS-approved grants program that distributes monies to individuals or organizations for charitable purposes.

**Private Sector Funding:** Organizations or individuals that operate for-profit organizations and choose to give monies according to their own criterion, e.g., corporate foundations.

**Program Development:** The creation of a series of activities designed to accomplish a particular goal or set of goals over a pre-designated time period for a particular audience.

**Program Director:** The person who has full responsibility for a program within an organization.

**Program Manager:** The staff member with day-to-day responsibility for program implementation. Program Managers oversee program staff.

**Program Officer:** A staff member of a foundation who has responsibility for a particular area of giving. The program officer meets with potential and current grantees, provides information and support, helps determine giving guidelines and procedures and has responsibility for either reading proposals directly or working with a panel of readers. The program officer oversees current grantees, often making site visits to determine how a project is going. The grantee works with the program officer throughout the life of the grant.

**Proposal:** A realistic, detailed projection of what your program plans. A proposal usually includes a description of the organization, staff, capacity to deliver the program, program goals, a calendar of activities, methods for achieving the program goals, methods for assessing if the goals have been met, along with a program budget and supporting materials.

**Prospecting:** Researching potential funders.
Public Foundations: Foundations with an IRS status based on their funding sources. A percentage of their operating funds must come from public sources to qualify for public foundation status.

Public/Private Partnerships: Partnerships between non-profit and for-profit organizations. Examples are museum training programs in technology for corporate staff or internships for museum youth program participants in a corporation.

Public Sector Funding: Tax money distributed through grants programs designed to enhance the quality of life for the general public. Public sector funding priorities are set by Congress at the national level or by state or local government officials.

Qualitative evaluation: Evaluation of non-measurable program goals. Examples are attitude, self-esteem, and morale.

Quantitative evaluation: Evaluation of measurable program goals. Examples are: higher science grades in school, number of youth who drop out of a program, etc.

Recruitment: The process of identifying and attracting program participants according to some predetermined criterion. For example: finding inner-city youth between the ages of 14 - 19 to work as museum guides.

Restricted Funds: Monies granted for a specific purpose, which cannot be spent on any other effort. For example: capital monies, which can only be spent on bricks and mortar.

RFP: Abbreviation for Request for Proposals. RFP's are issued by funders or by museums looking for bidders.

Salary: A prearranged annual rate paid by an employer to an employee in exchange for the employee's services to the organization. The rate is based on the number of hours considered full time work equivalent, e.g., 35 hours, 40 hours.

Seed Money: Funds for start-up programs, often for small pilot efforts.

Stakeholder: Any person or group of people affected by the programs or resources of an institution. Examples of museum stakeholders are trustees, staff, museum visitors, local schools, the surrounding community, etc.

Strategic Planning: Process by which an organization articulates what it hopes to accomplish in the future, what needs it will meet and how it plans to accomplish its future goals.

Strategies: A series of activities designed to achieve a particular goal.

Stipends: Monies given to program participants to assist with expenses, e.g., travel, food. Stipends are not salaries. Some funders will give stipends but not hourly wages or salaries to program participants.

Supplies: Material needed to run a program that costs under $500. Examples are: paper, paint, laboratory apparatus.
**Summative evaluation:** The final evaluation of a program/exhibition, after all changes have been made. Summative evaluation is usually a final report assessing program effectiveness in relation to program goals. Summative evaluation data are often used in proposals and final reports to funders.

**Surveys:** Data collection techniques used by evaluators where a particular group is asked a series of questions designed to elicit pre-determined information. Surveys can be written or oral. Examples are written or oral questions for museum visitors to determine where they live, why they came to the museum, their ages, sex, educational level.

**Target Audience:** A predetermined group for whom a program or exhibition is designed. For example: inner-city girls, ages 5-9 for a workshop designed to interest middle-school girls in science.

**Time-line:** A calendar of events and activities that describe a program over a predetermined time period.

**Top Down:** Decision making that begins at the top of the organizational hierarchy, usually with the Board of Trustees or the Director.

**Trustees:** Volunteers who donate their time to the oversight of organizations. Trustees create organizational policy, have the power to hire and fire the organization's director, and work for the good of the organization. Trustees have limited terms of office and during their tenure they are expected to provide expertise, connections, and donate money to the organization. Trustees have legal and fiscal responsibility for the organization.

**Unrestricted funds:** Monies that can be used for any purpose. Unrestricted funds are also called General Operating Support.
CINCINNATI MUSEUM CENTER YOUTH PROGRAM
General Application

Return To:
Kristen Kloth
Director, Youth Program
RE: Youth Program Application
Cincinnati Museum Center
1301 Western Ave.
Cincinnati, Ohio 45203

Please Print or Type

NAME: _______________________________________________________________________
    Last          First          MI          Nickname

ADDRESS: ______________________________________________________________________
    Street Address          City          State          Zip

   ________________________________   ________________________________
Home Phone #          Cell Phone #          Email Address

THIS PROGRAM REQUIRES THE YOUTH TO BE BETWEEN THE AGES OF 13-18. DO YOU FALL INTO THIS RANGE? (Check one)  _____YES  _____NO
Date of Birth ___________ (Month/Day Only)

SCHOOL: _______________________________________________________________________
    Name          Street Address          City, State, Zip

   ________________________________
Grade          Counselor

Name of Parent(s)/Guardian(s)          Work Phone Number          Home Phone

   ________________________________
   ________________________________
   ________________________________

Official Use Only
Date Received__________________
Family Information

The following information is requested to help Cincinnati Museum Center document eligibility for funding of its youth programs. This information is confidential and will be used only for grant purposes. Your response will help us fund these important programs. If you have any questions please feel free to call the Youth Program Director at (513) 345-2643. Thank you for your help.

1. Number of People in your household: _________________________

2. Taxable Income Level (Not Gross) Please check one:
   (Do Not count income that is NOT taxable) $ 0-17,224
   $ 17,225-20,535
   $ 20,536-25,755
   $ 25,756-30,975
   $ 30,976-36,195
   $ 36,196-41,415
   $ 41,416-46,635
   $ 46,636-51,855
   $ OVER 51,856

3. Does your family qualify to receive assistance from any of the following (please check all that apply)?
   Free or reduced lunch at school
   Temporary Aid to Needy Families
   Medicaid
   Food Stamps

4. What is the highest level of education completed by your mother?
   (Circle one): 1 2 3 4 5 6 7 8 9 10 11 12
   College degree earned if any? Associate (2 year) Bachelor Masters Doctorate

5. What is the highest level of education completed by your father?
   (Circle one): 1 2 3 4 5 6 7 8 9 10 11 12
   College degree earned if any? Associate (2 year) Bachelor Masters Doctorate
REPORT CARD – Please submit a copy of your most recent report card

ESSAYS - Please submit a short essay (at least 1/2 page, typed, for each) on the following:

1) My favorite subjects in school are... and why?
2) My education and career goals are… and why?
3) Why are you interested in joining the Youth Program at Cincinnati Museum Center, and what do you hope to gain from the experience?
4) Tell us about a time when you have taken a risk and tried something new. How did you feel about it before, during and after the experience?
5) When have you felt the most successful? What was your goal and what challenges did you have to overcome to reach this goal?

REFERENCES:

Please list three persons not related to you, whom you have known at least one year.
Name       Relationship       Address & Phone       Years Known
_________________________________________________________________________________
_________________________________________________________________________________

APPLYING STUDENT AND PARENT AGREEMENT

I________________________ if accepted into the program, agree to spend a minimum of 250 volunteer hours in service on the floor of Cincinnati Museum Center for one year. I will complete all training, attend all mandatory meetings, and arrive for shifts on time.

I certify that the information given herein is true, correct and complete. I authorize verification of all statements contained in this application. I authorize former employers and/or educational institutions to provide information concerning me, and I release them from liability for providing any such information to the Cincinnati Museum Center.

I understand and acknowledge that any volunteer/employment relationship with this organization is of an "at will" nature, which means that the Volunteer/Employee may resign at any time and the Employer may discharge Volunteer/Employee at any time with or without cause. It is further understood that this "at will" volunteer/employment relationship may not be changed by any written document or by conduct unless such change is specifically acknowledged in writing by an authorized executive of this organization.

Our signatures indicate that to the best of our knowledge, the information given on this application is true, complete, and accurate.

As a parent or guardian signing this form, I give permission for my child to participate in all program-sponsored activities which may include but are not limited to; field trips, overnights, small group discussions, skating, caving, and camping. I also give permission for the use of my (my child’s) name and/or photograph for editorial, promotional, recruitment or educational purposes.

Signature of Student __________________________ Date __________________________

Signature of Parent/Guardian __________________________ Date __________________________
RECOMMENDATION
Please have this completed by an adult you interact with other than your family. Youth group leaders, pastors, former teachers, etc. are all acceptable.

Name of person making recommendation: ______________________________________________ Phone Number
Business Name & Address _______________________________________________________________________
Daily School Hours ___________________________________________________________________________

I recommend that _________________________ participate in the youth program at Cincinnati Museum Center.

Please discuss how you know the student, the length of time, and important attributes of the young person (please use an extra sheet of paper if necessary) Thank you for your time.
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Signature__________________________________________ Date
Youth Program Training Dates

Part of the commitment to the Cincinnati Museum Center Youth Program is attendance at All of the trainings outlined below.

Orientation, Program guidelines, and Customer Service Training  
Saturday May 24th  
Sunday June 1st and Saturday June 7th  
All 12:00-5:00

June 9th – June 14th, 12:00 – 5:00pm

Shadowing  
(Will be determined by student’s availability)  
More information will be provided once the student is accepted into the program  
June 16th – July 6th (No shadowing will take place June 21-25)

Placement Training  
July 7th 12:00-5:00

*If you are unable to attend any of these trainings please notify a Youth Program coordinator as soon as possible.

Other Important Dates:

Awards Banquet – June 12, 2008

Museum Choice Essay help – June 26th and June 29th 1:00-3:00  
Museum Choice Essay DUE – July 8th

Hocking Hills Camp Out July 23-July 25  
Summer Day Trips July 17th and August 19th  
(Not required, but recommended)

Summer Break – All students off  
July 30-August 4, 2007
January 1, 2008

Dear Interested Youth and Families,

Thank you for your interest in the Cincinnati Museum Center Youth Program. Cincinnati Museum Center offers many exciting opportunities for you as a volunteer to explore science, child development, & history. You will also have the opportunity to meet new people, prepare for college, and explore unique career opportunities. We as a program have been hard at work putting together a fun and exciting summer. We are looking for hard working, fun loving, and dedicated youth willing to put forth extra effort to make the Museum Center even better. An application and essay questions are included with this letter, please complete and return to us by April 25, 2008. After we receive your completed paperwork we will call and arrange a tour and an interview. In the last couple of years our program has grown to include over 140 youth. Due to the staff to volunteer ratio we can only take a certain number of new youth. So, please return your information as quickly as possible.

Our youth volunteer in the Museum of Natural History & Science, The Duke Energy Children’s Museum, and the Cincinnati History Museum. As a youth program member you are expected to interact with visitors of all ages, interpret the exhibits, facilitate demonstrations, and make the museum an enjoyable interactive experience. You will have the opportunity to attend special seminars and field experiences to explore careers, develop job skills, build communication skills, and increase community awareness. Some of these activities have included digging for dinosaur bones in Montana and summer trips to the Everglades and Key West Florida to supplement our museums demonstrations and explore other cultural centers. Within our program we practice résumé writing, coordinate college visits, and lend a helping hand to various activities at Cincinnati Museum Center such as Asian Culture Fest and the Annual Snowball event.

As a youth volunteer you are expected to attend and complete the new youth orientation and training sessions, these dates are enclosed with your application. You must also volunteer 5-15 hours a month during the school year, 5 -15 hours a week during the summer, and attend a monthly youth meeting on the third Wednesday of each month from 4:00–6:00 p.m. After one year of volunteering, accumulating 250 hours of participation, and meeting certain attendance percentages, you will be eligible to apply for various paid positions, which will be posted as they become available.

Cincinnati Museum Center is dedicated to providing educational and enjoyable opportunities for youth. If you have any questions please contact us. We look forward to receiving your application and discussing the opportunities open to you.

Sincerely,

Kristen Kloth
Director, Youth Programs
Phone: (513) 345-2643
Email: youthprograms@cincymuseum.org
What is the CAUSE Program?

The Community and Urban Science Enrichment Program (CAUSE) is a program for high school youth that attend high schools in and around Camden City. It is a work experience (job) designed to provide meaningful experiences in science and education, to promote science literacy and to provide educational and/or employment opportunities to Camden City’s youth. (visit: http://www.njaas.org/Community/CAUSE.html) for more information.

How do I become a part of the CAUSE program?

You must be in high school, grades 9-12, and attend one of the following schools.

- Camden High School
- Camden Academy Charter High School
- Charles E. Brimm Medical Arts High School
- Camden County Tech Vocational School (Pennsauken only)
- Creative Arts High School
- L.E.A.P. Academy University High School
- Met East High School
- Pennsauken High School
- Woodrow Wilson High School

I attend one of the specified high schools, how do I apply?

1. You can attend on of our information sessions held at your school in Late September or October for the CAUSE Staff Program or late January for the Apprentice Program (see profile). Listen for announcements. During the session, you will be given a brochure and application. Once your application is complete you can return it to your school or mail it to us. Mail completed applications to attn: CAUSE Program, New Jersey Academy for Aquatic Sciences, 1 Riverside Drive, Camden, NJ 08103.

2. You can also download and print an application and recommendation form from our website, complete and mail it in above address.

3. You can complete and submit an application online. Recommendation forms can be printed out and mailed in by you or your teacher. A recommendation form MUST be received to consider application complete. Use above address to mail forms.

Is there an interview process?

Yes. Once CAUSE Staff receives your application, it will be reviewed. Based on your application, we may call you to set up an interview. All program participants are required to bring in a parent or guardian during the interview.

I’ve been accepted into the program, what happens now?

Congratulations, you have been accepted. All accepted participants must attend and complete a 15-20 week training course on oceanography, animal classification, marine biology, and public presentation and customer service skills. Training will consist of session lectures, weekly quizzes, quarterly tests, a final exam, and an oral practical. All participants must receive a 75% or more final average to pass the training portion of the program.

In addition to science training, all participants are required to attend mandatory weekly professional and personal life skills meetings/workshops and trips. Workshop topics can include teambuilding, communication skills, diversity, inquiry-based learning and college preparation. Weekend work is required.
What happens after training?

1st year program participants will continue their life skills training, be introduced to level one animal handling, and participate in community service projects, write for the newsletter, and research, develop and facilitate a summer science camp curricula for the CAUSE Summer Camp.

2nd, 3rd, and 4th year participants will gain more responsibilities as they progress through the program’s career ladder. Other work includes but not limited to community service projects, teaching Aquatic Science Club, writing for the newsletter and yearbook, facilitating weekly meetings, workshops, rap sessions and assisting other full-time Education Staff with their programming such as deep sleeps, and in house and outreach programming. Staff will work up to level 2, 3, or 4 animal handling.

All program participants are required to attend mandatory weekly meetings/workshops for the duration of the program.

Do CAUSE participants travel?

Yes. CAUSE participants take trips throughout the year. We may visit other aquariums, zoos, science museums and colleges.

Each year, program participants will take a field excursion outside of the state for hands-on field work and techniques training. Visit (http://www.njaas.org/Community/CAUSE.html) to see a slide of show of this past year’s field excursion.

How much time would I need to commit to the program?

The CAUSE Staff Program begins each November and ends in August of the following year. The Apprentice Program begins each March and ends in August of that year. You will work approximately 9-20 hours per week during the school year and approximately 28-32 hours during July and August.

You may participate in the program each year you are in high school. Returning program participants are required to go through a re-interview each year they wish to participate in the program.

Can I participate in the CAUSE Program after I graduate high school?

Yes. There are opportunities for graduates of the program. Graduates may interview for a Senior Counselor position and assist current participants with their summer camp curriculum development. Senior Counselors also assist with after-school programming and training during the school year.

Will I be paid?

Program participants are paid minimum wage.

Will I receive school credit for participating in this program?

Camden City School participants will receive credit each year they are in the program. It is not currently offered for charter school participants.

Recruitment

We will begin recruitment in late September and early October for CAUSE Staff Program and late January for the Apprentice Program. Listen for announcements at your school to attend our information sessions.

I have more questions!

If you have more questions, please contact the CAUSE Program Team at 856.361.1022 or email: cause@njaas.org
I, _______________________________________________  ,  hereby give permission for (parent, guardian) my son/daughter/ward/self, ______________________________________________________, (full name) to participate in the Galaxy Explorers program. I understand that this project will take place during afterschool hours, school holidays, and weekends at Chabot Space & Science Center and various schools, community organizations and also will include science and technology related field trips. I understand that participation in this program is purely voluntary. I hereby give permission to Chabot Space & Science Center to display, license, sell, publish, etc. the images taken of me/my child at various dates for all purposes, including those of advertising.

I release the Chabot Space & Science Center from liability for property damage, theft or personal injury to my child/ward/self during or by reason of these activities. I authorize those in charge to furnish reasonable emergency treatment during this project for my child.

I request that my son/daughter ___________________ be allowed to attend any field trip sponsored by the Chabot Space and Science Center as part of the Galaxy Explorers’ program between September 1, 2007 and August 31, 2008. I understand that the method of transportation for field trips will be chartered buses, Chabot van or private cars driven by the instructors.

In the event my son/daughter, a minor, becomes ill or sustains an injury while in the care or under supervision of the directors, counselors or instructors of the Chabot Space & Science Center, any of its professional staff is given permission to administer First Aid for his/her relief. If it is not practical to return him/her to us or to receive our instructions for his/her care, I, __________________________ parent/legal guardian, do hereby authorize Chabot Space & Science Center as agents for the undersigned to consent to any X-ray examination, anesthetic, medical or surgical diagnosis or treatment, and hospital care which is deemed advisable by and is to be rendered under the provisions of the Medicine Practice Act on the medical staff of a licensed hospital whether such diagnosis or treatment is rendered at the office of said physician or at said hospital.

I understand that this authorization is given in advance of any specific diagnosis, treatment, or hospital care being required. This authorization is given pursuant to Section 25.8 of the Civil Code of California and remains effective only for the events and dates listed above. Parents will be contacted immediately if possible, should any illness or accident occur to their son/daughter on the trip.

I will not hold liable the Chabot Space & Science Center or its directors, agents, professional staff or community partners for medical aid rendered and will reimburse the Chabot Space & Science Center or its directors, agents, professional staff or community partners for any medical or other expenses incurred in the care of my son/daughter.
1) Parent/Guardian Name (please print) Signature of Parent/Guardian Date

Parent/Guardian Phone Numbers First emergency contact number Second emergency contact number

2) Parent/Guardian Name (please print) Signature of Parent/Guardian Date

Parent/Guardian Phone Numbers First emergency contact number Second emergency contact number

Person to Notify in case of emergency (if parent or guardian cannot be contacted)

_______________________________         _____________________________________      ____________
Name/Relationship Phone Number

MEDICAL INFORMATION

Family Doctor__________________________________________________________
Address______________________________________________________________
Doctor’s Phone________________________________________________________
Hospital______________________________________________________________
Group Health Insurance_______________________________Number_______________________

CHILD’S GENERAL HEALTH INFORMATION

Allegies_______________________________________________________________
Medications (list all medications) __________________________________________
________________________________________________________________________
Special Needs/Conditions _________________________________________________

TRANSPORTATION

What arrangements you have made for your child to get to and from the center? (See GE manual for insurance requirements for carpooling.)

☐ Pickup ☐ Participant will drive him/herself ☐ Occasional Assistance is needed
High school students participate in the Career Ladder first as volunteers, then as Explainer Interns, where they learn to interact with the public and assist with special events and other public programs. After fifty hours of work they may move into Explainer positions, based on performance and availability, partnering with college level explainers to learn how to conduct demonstrations, interpret exhibits, assist with workshops and hands-on activities, orient school groups, and work with the After-School and Weekend Science Clubs.

Requirements
Applicants must be 14 years or older and enrolled in high school. Working Papers Photo I.D. Social Security Card
Be able to provide service for two consecutive semesters.

General Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
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<tr>
<td>Address</td>
<td>Apt.</td>
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<td>City</td>
<td>State</td>
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<tr>
<td>Home Phone</td>
<td>Cell Phone</td>
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School Information

<table>
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<tr>
<th>Name</th>
<th>Grade</th>
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<tbody>
<tr>
<td>Address</td>
<td>School Phone</td>
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<tr>
<td>City</td>
<td>State</td>
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Is volunteering a school or community requirement? Yes No
If Yes, please list contact person and phone number

Additional Information

Do you speak an additional language other than English? 

Were you a member of the New York Hall of Science’s Science Club or Hayden at the Hall? Yes No

How did you learn about the Science Career Ladder?
Describe any visitor/customer experience


Why do you want to work at the New York Hall of Science?


The New York Hall of Science considers applicants for all positions without regard to race, color, religion, creed, gender, national origin, age, disability, sexual orientation, marital or veteran status, or any other legally protected status.

I certify that answers given herein are true and complete.

I authorize investigation of all statements contained in this application for employment as may be necessary in arriving at an employment decision.

Signature of Applicant         Date

Please mail this form to: Public Programs Director, New York Hall of Science, 47-01 111th Street, Queens, NY 11368
Or fax to: 718.699.1341. For more information: www.nyscience.org

Office Use Only                  Date Enrolled ____________________________     Employment Status _______ Paid _______ Volunteer
I am applying for: (mark 1-5)
- Zoo Crew Explorers
- Middleton W.A.V.E. Project
- Youth Connection
- Media Arts
- Recycle & Reuse

**Name:**

**Address:**

**City:**

**State:**

**Zip:**

**Date of Birth:**

**Home Phone:**

**Cell Phone:**

**E-mail/Myspace:**

**Other Phone:**

**Mother's Name:**

**Work Phone:**

**Father's Name:**

<table>
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<tr>
<th><em>For Informational Use Only</em></th>
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<tr>
<td><em>All Teen Programs Require A Minimum of 6 Hours A Week</em></td>
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<table>
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<tr>
<th>Do you have transportation to and from the Zoo, and if so what?</th>
<th>Shirt Size</th>
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<tbody>
<tr>
<td>Do you know any languages other than English? If so, what languages?</td>
<td>S M L XL 2XL 3XL</td>
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<tr>
<td>Where was the most exciting place you've ever traveled?</td>
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<tr>
<th>School currently enrolled:</th>
<th>Grade:</th>
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<tbody>
<tr>
<td>Circle one:</td>
<td>Public School</td>
</tr>
<tr>
<td>Do you have a computer</td>
<td>Yes</td>
</tr>
<tr>
<td>Are you currently enrolled in the free or reduced lunch program at your school?</td>
<td>FREE</td>
</tr>
<tr>
<td>Favorite school subject:</td>
<td>Least favorite school subject:</td>
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<tr>
<td>Extracurricular activities:</td>
<td></td>
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<tr>
<td>Have you been taught:(circle all that apply)</td>
<td>How to get into College / Resume Writing / Career Planning / Finance</td>
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**Previous Work/Volunteer History**

<table>
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<tr>
<th>Prior employer:</th>
<th># of hrs weekly:</th>
<th>Wage:</th>
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<tr>
<td>Supervisor name:</td>
<td>Phone #</td>
<td>Start/End date:</td>
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<td>Position/Duties:</td>
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<tr>
<td>Position/Duties:</td>
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**Emergency Contact Information** (Other than parents)

**Name:**

**Relationship:**

**Phone:**

**Name:**

**Relationship:**

**Phone:**

**Brief Medical History** (Information has no bearing on hiring process)

**Name of Physician/Clinic:**

**Phone:**

**Address:**

**Allergies (food, drugs, insects, etc.):**

**Any known medical conditions:**

<table>
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<tr>
<th>Have you taken a TB Test?</th>
<th>YES</th>
<th>NO</th>
<th>When?</th>
<th>Result:</th>
</tr>
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| Medications and reasons for taking: |

I have filled this application out to the best of my knowledge and understand that the application will be considered incomplete until the 2 letters of recommendation and essay from me describing why I want to be part of the program are submitted. I also understand the level of commitment needed from me and agree to adhere to this level.

**Parent Signature:**

**Date:**

**Applicant Signature:**

**Date:**
Tampa’s Lowry Park Zoo Teen Programs
Parent/Guardian Consent, Medical & Publicity Release Form

I, ___________________________________________ (printed name), the undersigned parent or guardian of ___________________________________________ (child’s printed name), DOB _____________ age ____________ understand and agree to all the terms below as pertains to the Tampa’s Lowry Park Zoo’s (TLPZ) Teen Programs that we are participating in:

1. I agree to allow my child to participate in all TLPZ’s Teen Program activities. Participation in said activities is purely voluntary, and if at any time we feel uncomfortable with the activities we may notify the instructor-in-charge that we do not wish to participate and accommodations will be made for us to either observe or not be involved in the activity.
2. I understand that we choose to engage in hands-on tasks as a part of this program.
3. I understand that a TLPZ employee/volunteer will explain any safety rules before participating. I agree that we have a responsibility to ask questions, clarify any rules, regulations or instructions that we do not understand or have any doubt about.
4. I understand that this program may involve riding in an electric-powered cart, train or horse ride wagon as a part of any tour associated with the program.
5. I agree that we have a responsibility to ensure our child’s full participation in TLPZ’s Teen Programs and will support that by checking on progress and offering any assistance as needed.
6. I understand that transportation to and from Tampa’s Lowry Park Zoo is the responsibility of the child and parent/guardian. If lack of transportation plays a factor in my child’s participation, I will contact TLPZ’s Teen Program administrators and attempt to arrange alternative methods of transportation.
7. I understand that TLPZ staff has the right and responsibility to dismiss any participant for disruptive behavior. No drugs, alcohol, stealing, smoking, or fighting will be allowed. In the event my child violates these rules or any other policies set by TLPZ, I understand I will be called to pick them up immediately, regardless of time.
8. I am aware that there are certain risks and dangers in any activity especially with those involving wild animals and/or endangered animals and their habitats and in consideration of participating, hereby waive, release, and hold harmless the Tampa’s Lowry Park Zoo, Lowry Park Zoological Society of Tampa, Inc. and the City of Tampa and their respective associated agencies for any liabilities, claims, demands, or cause of action that arise from our own negligence.

Medical Release
The law requires that parental permission be obtained for medical procedures on minors (under 18 years of age). The following consent form should be signed by a parent and/or legal guardian so that such procedures can be promptly carried out. We will make a genuine attempt to notify you in case of a serious emergency.

I, ___________________________________________ understand that, in case of medical emergency, every effort will be made to contact me or the persons named in the “Emergency Contact Information” section on my child’s application. If I cannot be reached, I hereby give permission to the physician selected by TLPZ to hospitalize, anesthetize, and secure proper treatment for my child as named above. I also hereby grant permission to the staff of TLPZ to dispense non-prescription medication including, but not limited to, Tylenol and Advil, to my child unless otherwise specified.

Film and Photographic Publicity Release:
Yes ( ) No ( ) I hereby authorize TLPZ and its representatives to use, without obligation to me, any photographs and motion pictures taken of us as individual subjects for any and all publicity and advertising purposes they may designate in promotion of their not-for-profit mission.

Yes ( ) No ( ) We would like to participate in the group photographs for keepsake purposes and understand that these group photographs may be posted on TLPZs website.

<table>
<thead>
<tr>
<th>Parent/Guardian Name</th>
<th>Signature</th>
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<table>
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<tr>
<th>Participant Name</th>
<th>Signature</th>
<th>Date</th>
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Questions for New Youth Interviews

1. Excitement/enthusiasm/desire to be here:
   1. What gets you enthused? What are you excited about? What of your interests are you most excited about? Hobbies, sports, etc.
   2. What about these topics (that you are excited about) make you want to spend your time at Cincinnati Museum Center.
   3. How did you learn about the Youth Program?
      1-5 _________

2. Open to new things/opportunities/diversity
   1. What are some things that you have done recently that you had never done before? How did you come across them?
   2. Within the next two years what are some new things that you hope to do/accomplish? EX Friends, trips, etc.
   3. Have you ever worked/been a part a group that you had not met or knew anything about? How did that go? EX: School group, boy/girl scouts
      1-5 _________

3. Leadership
   1. How do you handle conflict/confrontation? What do you do? Does it work for you?
   2. When you are in a group, what role do you take? Do you take charge? Stand back? Wait for direction?
   3. Describe a time that you were a leader.
      1-5 _________

4. Desire to teach/work with people
   1. What here at Cincinnati Museum Center are you excited about teaching/working our many visitors?
2. The Museum Center works with many people on a daily basis, why are you interested in joining a program that works so closely with people?

3. What is the first thing you would do to greet a visitor?

1-5 _________

5. Parental Support
   1. What are your thoughts on this opportunity for your child to join this program?
   2. Do you have any questions about the hours, times or year-round commitment?
   3. How do you see your child progressing and what do you hope they gain over their time here?

1-5 _________

6. Commitment/ability to do schedule
   1. What other commitments do you have or are planning to have over the summer/school year?
   2. Are there any conflicts that will prevent you from participating year round for multiple years?

1-5 _________

7. What do they bring to the program /Opportunity for growth?
   1. What will you bring to this program? Energy, fun, jokes etc.
   2. Through your time here, how or in what ways do you hope to grow from this program?
   3. Of all places that you could volunteer or work this summer, why here at Cincinnati Museum Center?

1-5 _________

3 Strengths ____________________________
_____________________________________
_____________________________________

3 Challenges ___________________________________________
_____________________________________________________
_____________________________________________________
Welcome to Discovery Corps!
Class XV

Dear,

We are very excited to announce that you have been selected for Discovery Corps at Pacific Science Center! We have selected you as a participant because we feel you will be a positive addition to our team of staff and volunteers. Please note the following information regarding your upcoming training session.

- Your training begins **Monday, August 18 from 9am to 5:30pm** and continues on **Tuesday, August 19 from 9am – 5:30pm**, with our last day being **Wednesday, August 20 from 9am to 5:30pm**.

- Please note that attendance for all training sessions is mandatory and will be taken very seriously. However, advance notice on a day in which you will not be in attendance will be considered an excused absence and we will work directly with you to determine the best way to make up the time and content missed. If you are ill or have an emergency on one of the training dates, please contact a Discovery Corps Coordinator immediately. A complete attendance policy will be reviewed on your first day of Discovery Corps. We plan to start on time every day and will have very full days, so please allow extra time for travel so you can be ready to begin on time.

- There are two forms enclosed that both you and your parent/guardian need to review and sign. **Please bring the two completed forms with you to the first day of training**.

- After you have completed training there will be a graduation, so tell family members to save the date: **5pm to 7pm, Thursday August 21, 2008** for the ceremony and festivities.

**First Day: Monday, August 18th:**

- A Discovery Corps staff person will meet you at reception (located through the blue door on 2nd Avenue North and John Street) and escort you to our meeting location. You will meet the team and learn more about the program.

- Beverages and light snacks will be provided. Bring your own sack lunch or plan to buy a lunch nearby.

- On your first day, we will conduct a pre-evaluation. This evaluation is not a test, but it is required to assess the effectiveness of our program.

- Please wear clothing without written messages and comfortable shoes with closed toes. Athletic pants such as sweatpants are not considered professional attire at PSC. Nametags and PSC uniforms will be provided for you and are required when working and volunteering in the museum. Because we will keep a schedule, bring a watch. A cell phone may be used to keep time, but must be left on silent mode.

- If there is any reason why you will not be able to attend Monday, August 18, or if conflicts with any other training dates arise, please contact a Discovery Corps Coordinator immediately.

On behalf of Pacific Science Center, congratulations, and thank you for your interest in this program. We look forward to a fun and rewarding experience with you.

Sincerely,

Brigid Slinger
Discovery Corps Coordinator
(206)443-2884
brigid_slinger@pacsci.org

Brooke Rivera
Discovery Corps Coordinator
(206)443-6605
brooke_rivera@pacsci.org
June 17 2008

Dear Parent or Guardian of Name:

We are very excited to inform you that Name has been accepted into the Class XIV of the Discovery Corps Program! We would like to congratulate her and give you some further information about this opportunity for her to further excel in school, career, and life.

Discovery Corps is a program developed to help youth gain experience in a professional environment, learn job skills, and expand their knowledge about science education. This will all be done in a fun, hands-on environment with valuable education tools they can take home, to school, and into their upcoming careers.

The Discovery Corps Program will begin with a series of trainings in customer service and science education. The first training session begins Monday, June 30 from 9am until 5:30pm, following sessions will take place on Tuesday, July 1 from 9am until 5:30pm, and Wednesday, July 2 from 9am until 5:30pm. Your youth will be expected to establish good attendance at these training sessions. Graduation from the training sessions will include a showcase of what the group has learned and will occur on Thursday, July 3 from 5pm until 7pm, and families and friends are welcomed and encouraged to attend.

Name will be receiving a packet of information about Discovery Corps including forms for parents and students to review and sign together. Please review this packet and feel free to contact a Discovery Corps Coordinator or Sarah Huschle, Discovery Corps Manager, at (206)269-2143 with any questions or feedback that you might have.

After completing the program, Name will not only receive a certificate of recognition, a great resume builder, and the opportunity for further internships and jobs at the Pacific Science Center, but she will have lasting memories and skills to support her in her future endeavors in life. We would like to thank you very much for the time and effort you continue to put forth in helping Name to enrich the environment of the Pacific Science Center and to participate as an active member of the larger community.

Sincerely,

Brigid Slinger  
Discovery Corps Coordinator  
(206)443-2884  
brigid_slinger@pacsci.org

Brooke Rivera  
Discovery Corps Coordinator  
(206)443-6605  
brooke_rivera@pacsci.org
Introduction
- Welcome
- Mission Statement
- 9 Key words

Duties and Responsibilities
- Expectations
- Attendance
- Shifts
- Breaks
- Uniform
- Electronic Devises
- Helpful Hints
- Hands Off Policy
- Trips and Events

Guidelines and Policies
- Discipline
- Reporting Concerns

Emergency Situations
- Injured Visitors
- Emergency Evacuation
- Lost Children and Adults

Museum Information
- Operating Hours
- Institutions at Museum Center
- Map of Museum Center
- Facts and Information about
- Union Terminal

Benefits and Perks

Frequently Asked Questions

“A day in the life”
Cincinnati Museum Center Youth Program 9 key words for Youth Development

1. Friendship:

The state of being a friend; association as friends: to value a person’s friendship

Make friends Form a friendship, foster cordial feelings

*I hope Brian will make friends at Museum Center.*

2. Unity:

The state of being one; oneness, united or in agreement, constancy of purpose or action

*We show unity through our participation in Youth Program activities.*

3. Education:

The act of process of imparting or acquiring general knowledge, developing the powers of reasoning and judgment, and generally of preparing oneself or others intellectually for a mature life

A degree, level, or kind of schooling: a university education

*His lack of education prevented him from getting a good job.*

4. Opportunity:

An appropriate or favorable time or occasion: Their meeting with Dr. Fleming afforded an opportunity to exchange information.

A good position, chance, or prospect, as for advancement or success

*If you are active in the program you will be able to take advantage of the opportunity of numerous cultural and educational experiences.*
5. **Diversity:**

The state or fact of being diverse; difference; variety

*Diversity is what makes our program unique and what provides opportunities to grow.*

6. **Career:**

An occupation of profession, especially one requiring special training; a person’s progress or general course of action through life

*He followed the AVP of history to gain exposure in the career of historical research.*

7. **Leadership:**

The position or function of a leader: ability to lead: an act or instinct of leading; guidance

*The paid youth interpreter position requires a person who combines leadership and energy; He’s got leadership potential; Does he has leadership qualities?*

8. **Volunteerism:**

The policy or practice of volunteering one’s time or talents for charitable, educational, or other worthwhile activities, especially one’s community or workplace

*Volunteerism is highly regarded on a college application.*

9. **Customer Service:**

Assistance and other resources that a company provides to the people who buy or use its products or services

*Exceptional customer service is what brings many visitors back to Museum Center.*
I Introduction

Welcome to Cincinnati Museum Center’s Youth Program! We hope you use this handbook as a tool to help you build an exciting and unique experience while in the program. If you have additional questions about the program, rules, or Museum Center policy, please feel free to ask an adult supervisor who will be happy to help!

We ask all our Museum Center Youth Volunteers to show enthusiasm through their work, share their ideas and insights, demonstrate maturity, and respect & honor all visitors and staff at Museum Center. The Youth Program at Cincinnati Museum center is a developmental program that promotes growth and professional development. In order to achieve this goal the Museum must be a safe environment for all participants. Negative comments including capping, gossip, and other actions that alienate or offend other Youth and/or Museum staff will not be tolerated and guilty parties will be terminated from Youth Program involvement.

MISSION STATEMENT

The mission of Cincinnati Museum Center is to inspire all people to understand and appreciate natural history, science, and regional history; and to support the development of children. We collect and preserve; we advance and share knowledge. We stimulate curiosity and promote enjoyment of learning.
II Duties and Responsibilities

Expectation of Youth Volunteers:

- Youth volunteers must complete exhibit training and work a minimum of 250 hours or one year. Youth volunteers must also attend monthly meetings and ongoing training sessions. Specifically, all youth must attend the Omni meeting, held on the THIRD WEDNESDAY of EACH month from 4:00-6:00pm. Students are also required to attend the quarterly Supplemental Trainings.

Attendance and Scheduling:

Youth volunteers plan their work schedule every month. Adult supervisors keep attendance records to track the amount of volunteer hours, and to help evaluate youth volunteer's performance.

1. Schedules are due on the 15th of each month
   a. If a youth volunteer’s schedule is turned in late (without prior approval by youth staff) the youth will not be placed on the schedule. No exceptions
   b. If a paid youth’s schedule is turned in late they will be placed on the schedule by a youth staff member. The student is responsible for following this schedule.
   c. If a student misses a scheduled shift without informing youth staff prior to the shift they will be marked as a No Show. Three No Shows for a paid youth will result in termination and three for a volunteer will make them ineligible to apply for future paid positions.
   d. If you are not on the schedule you may not show up to be ‘added’ to work. If you believe your student is not on the schedule by mistake please contact a youth program coordinator.

If you are unable to work or are experiencing a delay, notify the Youth Program Coordinator in advance (at least 24 hours for shift changes or as soon as possible). Excessive tardiness, absences or schedule violations may result in a "warning" (see section III) Youth Program Attendance Hotline numbers are located in the back of this handbook.
Reporting for your shift:

Pre-shift meetings **Begin again May 5th and runs until September 1st**. All students must be here a half an hour before their scheduled shift. Your student must be in youthville on time, if they are late they will not be paid. If the student misses three pre-shifts it will result in a write up.

- e. 11:00-4:00 students should be here at 10:30
- f. 12:00-5:00 students should be here at 11:30
- g. 1:00-6:00 students should be here at 12:30

**If a paid youth is not present and on time for this meeting they will not receive payment for that time.**

Youth volunteers must report for scheduled work shifts and meetings **ON TIME** and follow their assigned schedule throughout the day. All youth must stay in their scheduled spot.

If a student needs to leave the museum early they must provide Youth Program staff with written or verbal parental notification.

**Breaks:**

Youth volunteers receive a 30-minute break period for each shift. If a student is tardy returning from break they will be marked as such. Three tardies will result in a warning.

**Students must remain on Museum Center Grounds during their break time.** Youthville, the rotunda, and the fountain are all wonderful places to enjoy your break with other volunteers and staff of CMC. When in public areas, remember to represent the CMC youth program with enthusiasm and pride.

It is **prohibited** to visit other museums while on break. While we encourage you to make friends, it is important that all youth are able to concentrate on the visitors while they are on duty.

Use the phone/go to the restroom **before or after your shift** or during your break time. If you find yourself needing relief while on the museum floor please inform an adult staff member who is on the floor or through the radio.
**Uniform:**

Youth volunteers must report to work in uniform. While on Museum Center property students must be in complete uniform, this includes the fountain, the rotunda, and any other area of Museum Center. Complete uniform is defined as:

i. The denim blue shirt issued by Youth Programs – clean and unwrinkled
ii. A blue or white shirt underneath (no other colors)
iii. Navy, khaki or black pants/shorts/skirts. The top of the pants must be at the students waist – please encourage them to wear a belt if their pants are too big. **No Jeans are permitted.**
iv. Closed toe shoes (no sandals)
v. Office appropriate jewelry (no large earrings or necklaces)
vi. **A watch** Cell phones are not allowed on the floors!
vii. **The Museum Center issued badge**

- All articles of clothing should be clean, wrinkle and stain free, and **fit properly.** Excessively large shirts, pants, or shorts are not appropriate.

- The CMC-issued blue shirt should be worn:
  o Buttoned (top two buttons are optional).
  o Tucked in. If worn un-tucked, it is to be hemmed straight across the bottom so as to look more like a jacket.
  o **Only** White or navy T-shirts may be worn under the uniform shirt.

- Hair:
  o Hair should be well groomed
  o Long hair should be worn back or otherwise controlled
  o Hair should not be an unnatural color
  o No hats, sweatbands, do-rags or bandanas.

- Tattoos and piercing must be concealed.

**Cell Phones and other electronic devices:**

Cell phones and MP3 players are not permitted on the museum floors or in Youth Program meetings. **No exceptions.**

We highly discourage the students from bringing any valuable items to Museum Center. However, if your child decides to bring these items on CMC’s property
please note that Museum Center is **not responsible** for them. The students may leave their valuables in the Youthville Offices or in the lockers located in the hall of Youthville. However, the **students must provide locks** for the lockers. Again, Cincinnati Museum Center is not responsible for items left in the offices.

If your student brings any valuables with them to work, please reinforce to them that they must lock them up.

If a student is found to have an electronic device on the museum floor it will be confiscated. If it happens a second time the item will be collected and held in youthville until a **guardian** is able collect it.

**Don't forget to bring a positive attitude and smile 😊**

*Very Helpful Tips to remember while at Cincinnati Museum Center:*

- Shorts and skirts must be within 5“ inches of the knee.

- When wearing your CMC uniform, upon entering the building you must abide by the uniform policies and remove hats, do-rags, and other unauthorized items.

- Remember that **you are on duty while in uniform** (even during your break and after your shift). Help to present a positive image of the youth program and Museum Center at all times.

- **Pants, shorts, and skirts must be worn at the waist supported by a belt. “Drooping” pants and exposed mid-rifts are not acceptable as part of the Cincinnati Museum Center uniform.**

- Wear pants, shorts, or skirts with pockets for your personal items. Backpacks and purses are **not to be** carried on the museum floor during work hours.

- Report to work early to check your mailbox for announcements, and obtain a daily schedule all located in Youthville.

- **No food, candy, gum, or drinks** are permitted on exhibit floor areas where our focus is the visitor experience.

- Homework and personal reading material is **not allowed** on the museum floor. Your priority during your shift is the visitor experience. During slow times ask an adult staff member who is on the floor or through the radio if there are other tasks to be completed or you may check out museum related material from the various libraries.

- Do not to bring your friends or family to the Museum during your scheduled time to work. We encourage you to come with your friends as visitors during your time off.
**Hands off Policy:**
The youth program follows a hands-off/no contact policy. Refrain from using physical contact (embraces, patting etc.) or terms of endearment when interacting with visitors or staff. Any violation of this rule will result in a disciplinary action.

**Trips and Events**
Cincinnati Museum Center’s Youth Programs travels and holds events several times throughout the year. While on these trips and at the events the students are held to the same standards as if they were at Museum Center. Students are responsible for upholding the values and portraying the program in the most positive light. This include, but is not limited to, cell phone/mp3s usage, hands off policy, uniform policy (when appropriate), Negative comments including capping, gossip, and other actions that alienate or offend other Youth and/or Museum staff and disregard for any other rules set forth.

If a student violates any of these policies s/he may be sent home at their guardians expense and possible dismissal from the Youth Program.

**III Guidelines and Policies**

**Discipline**
Our discipline policy follows a progressive disciplinary system. Behaviors that may result in a warning are those not in compliance with your duties and responsibilities as a youth volunteer (see section II)

**Verbal Warning** is a verbal warning given by adult supervisors as needed. Documentation of Strike One will be recorded in the youth volunteer’s file.

**Written Warning** is a formal verbal warning given by an adult supervisor and the Youth Program Coordinator. Documentation of Strike Two will be recorded in the youth volunteer's file and parents/guardians may be notified about the youth volunteer’s conduct.
**Final Written Warning** is a final written warning which merits a meeting with the Youth Program Coordinator and Director, and parents/guardians will be notified. Documentation of Strike Three will be recorded in the youth volunteer’s file.

Example:

3 verbal warnings = 1 written warning  
6 warnings total = Probation  
9 warnings total = suspension and possible dismissal

- We will make every attempt to help youth volunteers operate within the guidelines at Museum Center, including seeking assistance from youth’s parents/guardians. However, the next step in the disciplinary process may include participation in the “In House Suspension” program and/or dismissal from the program.

**Sample Behaviors that will result in receiving a ‘warning’:**

- Repeated No Call/No Shows
- Repeated failure to turn in your schedule request
- Uniform Violations (including loss of badges)
- Use of cell phones/Ipods/PDAs on the museum floor
- Violation of the Hands Off policy
- Disrespectful actions/words towards fellow youth or staff
- Violation of other assignments allocated by youth staff
- Use of tobacco products while at work or on a Youth Program field experience.

The above-mentioned progressive disciplinary system will operate on a six-month rotation. At the end of six months all records will be cleared and the youth will start at zero warnings.

**Behaviors that may result in Immediate Dismissal:**

- Foul or threatening language (cursing, malicious insults or rumors)
- Violence or physical endangerment (fighting, horseplay, or inappropriate touching)
- Theft (stealing or borrowing without permission)
- Damaging Property or Vandalism
- Drug use/abuse (working under the influence of drugs, alcohol, or other controlled substance)
- Harassment (discriminatory or sexual behavior that is unwanted, repeated, and interferes with one’s ability to work)

Cincinnati Museum Center Youth Programs reserves the right to search youth participants for illegal contraband in a situation when staff has reasonable doubt that a youth is following the above-mentioned rules. EX: If a student returns from their lunch break smelling of smoke staff reserves the right to search for tobacco products. Staff will contact guardians as soon as possible in this situation.

**Reporting Concerns:**

If you have a personal or professional concern while at the Museum you should notify your adult supervisor immediately. If you are unable to talk to your adult supervisor, notify the Youth Program Director/Coordinator or your parent/guardian. *Please, if something is not right, TELL SOMEONE;* because the only way we can correct a situation is when we know what's going on. Concerns can be reported to the youth program coordinators or the youth director.

**EMERGENCY SITUATIONS**

**Hurt or Injured Visitors:**
In case of any accident, use a radio to contact Security and an adult supervisor immediately. Give your exact location and the severity of the problem. **Do not attempt first aid.**

**Emergency Evacuation:**
*It is not your responsibility to evacuate the building.* Do not feel the need to try and clear the area. There are appointed Museum staff that will direct visitors in case of an emergency. Try not to panic, and walk to the nearest exit. Your primary concern is your own personal safety.

**Lost Children or Adults:**
On occasion you will encounter a child or adult who has been separated from his/her group.
**Lost child:** Utilize a radio to report that you have a **CODE 3**. DO NOT say the child’s name over the radio. Give a description of the missing child but again, do not say their name.

**Lost Adult:** Radio that you have a missing adult. Try to help the child feel secure by speaking calmly and lowering yourself to eye level. DO NOT TOUCH or pick up the child at any time! Remain with the child where he/she was found (have the parents come to you, don't roam around with the child),

Use a radio to alert adult supervisors and other exhibit areas (more details on how to handle lost visitors during training)

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**IV MUSEUM INFORMATION**

*Cincinnati Museum Center at Union Terminal*

1301 Western Avenue  
Cincinnati, OH 45203  
(513) 287-7000  
(800) 733-2077 (toll free)  
TTY: (800)-750-0750

*Museum Operating Hours:*
Monday-Saturday, 10 a.m.-5 p.m.  
Sunday, 11 a.m.-6 p.m.  
*Closed Thanksgiving and Christmas days.*

Institutions at Museum Center:

- **Amtrak Passenger** Train Station located next to the OMNIMAX Theater on the right side. Open Monday through Friday 10 a.m.-3 p.m. only.
- **Duke Energy Children’s Museum.** Explore a Woods adventure area, build sailboats in our Water Works exhibit. Test scientific principles for yourself in Energy Zone and meet children from around the world in our new Museum!
Cincinnati Historical Society Library. Free and open to the public, this outstanding regional research library includes books, periodicals, manuscripts, maps and newspapers dating back to the 1750s, plus thousands of 19th and 20th century photographs and rare publications.

Cincinnati History Museum. Detailed recreations of historic settings show the story of Cincinnati’s growth from the frontier to a bustling river town. Step aboard a 94-foot sidewheel steamboat docked at Cincinnati's Public Landing of the 1850's. Take a walk along a cobblestone street into an authentic, thriving 19th century Cincinnati.

Museum of Natural History & Science. Walk through a glacier and step back 19,000 years into the Ice Age Ohio Valley. Explore a recreated Kentucky limestone cave, complete with underground waterfalls, streams, fossils and a live bat colony.

Robert D. Lindner Family OMNIMAX Theater. Take a seat where films tower over and wrap around you. In the five-story domed OMNIMAX Theater, surrounded by 44 speakers, you are inside sights and sounds you can only experience in the largest motion-picture format in the world.

the Arts Consortium: African American Museum, a historic Rookwood tiled cafe, a food court, the Scripps-Howard Newsreel Theater for special film showings, and gift shops.

Single Attraction Admission Price:

(includes any one museum or the OMNIMAX)
$7.25 for adults
$5.25 for children (ages 3-12)
$6.25 for seniors (60+)

Toddler Pass is $4.25 and admits a 1 or 2-year-old to all attractions and to OMNIMAX for free when sitting in a caregiver's lap. Infants under 1-year-old are free. We also offer combination discounts when visiting two or more attractions.
Adult Combination prices:

2 attractions: $10.25
3 attractions: $13.25

Child Combination prices:

2 attractions: $7.25
3 attractions: $9.25

FACTS AND INFORMATION ABOUT UNION TERMINAL

Union Terminal was the last of the great municipal train stations to be built in the United States. Although Planning for the station began in the early 1900s, it did not open until 1933, more than a decade after the peak of passenger railroad travel.

With a price tag of $41 million, Union Terminal and its related construction projects constituted the most expensive train station ever built. Union Terminal was originally designed to accommodate 17,000 people and 216 trains per day.

Union Terminal is crowned by a 106-foot-high reinforced concrete half-dome. It is the highest freestanding half-dome in the Western Hemisphere, tall enough for a ten-story building to fit inside.

The facade of the terminal, a 120-foot-high semi-circle, is sometimes known as "the whispering arc." The acoustics will clearly carry the sound of a whispered voice from one corner of the building to the other, hundreds of feet away.

When it opened in 1933, Union Terminal housed the largest collection of secular mosaics in the United States. In 1973, when the terminal was scheduled for demolition, several of the famous mosaics, which were located in the concourse area, were moved to the
Cincinnati/Northern Kentucky International Airport. However, Union Terminal’s rotunda remains the home of the most dramatic mosaics, created by German-born artist, Winold Reiss.

The two 105-foot-long murals in the rotunda, which trace the sweep of American history and the settlement of Cincinnati, are among the most sizable artworks in the nation.

After train service ended in 1972, Union Terminal stood vacant for eight years. In 1980, it was reopened as a shopping center with more than 30 stores lining the rotunda and ramps.

In 1990, Union Terminal was renovated to become the new home of the Cincinnati History Museum, Museum of Natural History & Science, the Robert D. Lindner Family OMNIMAX Theater, and the new Cinergy Children’s Museum.

V Benefits and Perks

✓ Real work/professional experience
✓ Enhance communication skills
✓ Increase content specific knowledge
✓ Build self-esteem and confidence
✓ Educational field trips
✓ Special seminars and workshops
✓ Access to Museum information resources
✓ Recreational trips and overnight activities
✓ Complimentary tickets
✓ Gift shop discounts and Much more!
Museum Center Youth Programs are some of the most unique and comprehensive informal educational opportunities in the entire country! Come with us and explore a new, exciting world; meet new people and discover wonderful career, educational, and personal experiences!

FAQ

Here are some of the most commonly asked questions!

Schedules:

1. When is my schedule due?
   All schedules are due on the 15th of the preceding month. For Example: May’s schedule request is due April 15th.

   * If your schedule request is turned in after the 15th, you will not be added to the next month’s schedule. You may however, turn it in late if you have prior approval from a Youth Program Coordinator.

2. How do I fill out my schedule?
   Blank Schedules for the following month are sent out in your monthly mailings. Circle the days and time that you would like to work (remember 15-20hrs a week during the summer and 15-20hrs a month during school). Then you may turn the schedule in the “Schedule Request” mailbox in Youthville, E-mail the days and times to YouthPrograms@cincymuseum.org or call the Youth Program Hotline at 287-7050. Remember to leave your name!

Example:

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<th>July 2007</th>
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<td>10:30-4</td>
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<td>11:30-5</td>
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<td>11:30-5</td>
</tr>
</tbody>
</table>

This student has signed up for July 2 & 8 11:30-5:00 And July 4, 6& 10 10:30-4:00
3. What do I do if I do not know my schedule?
   If you lost your schedule or forgot when you are on the schedule ask a Youth Program Coordinator or look in Youthville. Current schedules will be posted on the bulletin board. If you need another copy of your schedule ask a Youth Program coordinator.

4. I had something come up and I cannot come in – what do I do?
   We all know things come up. If this happens, call the Youth Program Hotline ASAP. 24 hours notice is appreciated.

5. How do I change my schedule?
   Speak with a Youth Program Coordinator about changing your schedule. You can call a Youth Program Coordinator directly or call the Youth Program Hotline at 287-7050.

6. I thought I was scheduled for 10:30-4:00 but the schedule says 11:30-5:00 – what do I do?
   You should always follow the schedule that the Youth Program sends you. If there is a discrepancy, call a Youth Program Coordinator.

7. How do I report my volunteer Hours?
   You must record your hours on your timesheet each time you report to a scheduled shift. Timesheets are split up into the individual museums and placed in the corresponding binder in Youthville. Record the hours that you worked each day on your timesheet.

Visitation:

8. Can my friend/family member come to work with me?
   Friends and family are not permitted to come to work with you. We encourage you to visit with your family and friends when you are not scheduled in the museums.

9. Can I visit my friend while on my lunch break?
   Youth Program Volunteers and paid youth are not permitted to visit other museums while on break. You are encouraged to visit the museums when you are not scheduled to work. Youth are asked to stay in the Rotunda, at the Fountain or in Youthville during their breaks.
   Example: You work in CHM; you may not visit friends in MNH&S while on break.
10. How do I get Complimentary Tickets?
As a youth volunteer you are able to request complimentary ("comp") tickets to any of the museums and/or Omnimax films for yourself and your family. To request these tickets ask a Youth Program Coordinator for a request form. The tickets will be available to be picked up at Will Call (the Kiosk) on the day of your visit.

11. I lost my badge, Now What?
You receive one complimentary badge. Do not lose this! It is your ticket into the Museum Center. Your badge must be visible at all times while you are in the Museum Center. If you lose your badge, report to the Public Safety office to receive a new one. Be advised: They may charge you $5.00 for a new one. If public safety will not issue a new badge without payment and you do not have the money, you will be sent home for the day.

12. I lost my uniform shirt/need a new one! What do I do?
Report this to the Youth Program Staff immediately. We will try to get you a new shirt. Please note: we do not have an endless supply of shirts. You receive one when you enter the program and an additional one each year you are here. Please keep them clean and in good shape.

Miscellaneous:

13. What meetings am I required to attend?
All youth are required to go to the monthly All Youth Omni Meeting. This meeting is always held on the third Wednesday of the month from 4:00-6:00 (unless otherwise stated). This is where you will learn demonstrations and new information. It is important that you are there. If you must miss it, please call the hotline and let us know.

You are also required to attend supplemental trainings throughout the year. Information about these trainings will be distributed in advance. If you miss a training you will have to make up the covered material.

You are also always welcome at the Youth Advisory Council meeting held on the first Wednesday of each month 4:00-6:00 and
the Youth Alive! Meeting held every second Wednesday of the month 4:00-6:00.

14. **How do I get a letter of Reference?**
Ask your Youth Program Coordinator to write one for you! Be sure to give them the details that need to be included in the letter.

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**CINCINNATI MUSEUM CENTER AT UNION TERMINAL**

**A Day in the Life of Youth Program Volunteer, Joe Bob!**

Joe Bob is scheduled for 11:30-5:00 on every Saturday of the Month. Here is a glimpse of his schedule for the day (Yours will be like this, too!)

**11:15** Joe Bob arrives for his shift at the Cincinnati Museum Center
- Joe Bob tucks his uniform shirt in, removes his headphones, and turns off his cell phone before he enters Union Terminal.

**11:20** Joe Bob enters Youthville and looks for his daily schedule
- Joe Bob finds his daily schedule in front of the mailboxes or on the front table and puts it in his pocket.
- He has his schedule request for the next month so he places that in the “schedule request” mailbox
- He places his personal belongings, including his hat, MP3 player and backpack in the locker and locks it with the lock he brought from home.
- Joe Bob also checks his mailbox for any news or flyers from the youth program

**11:30** Joe Bob meets up with the other youth and listens to the Youth Program staff announce what is happening in the museums for the day

**11:50** All youth go to the Museum Floor and get ready for another fun day in their Museums.
- Upon arrival, Joe Bob radios staff to let them know that he is on the floor.

**12:00-2:00** Joe Bob follows his schedule doing demos and helping visitors in the museum.

**2:00** Joe Bob buys his lunch at Pizza Hut and takes it up to Youthville.
• He enjoys his lunch with other youth
• Joe Bob leaves Youthville to make it back to the museum on time

**2:30-5:00** Joe Bob continues to follow his schedule and help visitors  
**5:00** Joe Bob ends his day at the Museum Center by recording the hours he worked for the day on his timesheet in Youthville.

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**Important Phone Numbers and Email Addresses**

**Youth Program Hotline:**  
513-287-7050

**Youth Program E-Mail**  
youthprograms@cincymuseum.org

**Kristen Nay,** Youth Program Director  
513-345-2643  
knay@cincymuseum.org

**Mr. Calvin Harper,** Senior Youth Program Coordinator  
513-287-7000 EXT. 7217  
charper@cincymuseum.org

**Mr. Jeff Davis,** Youth Program Coordinator  
513-287-7000 EXT. 7250  
jdavis@cincymuseum.org

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Here are three easy ways to turn your schedule requests in on time!  
Remember, they are due on the **15th** of each month!
Place them in the “Schedule Request” mailbox in Youthville

Call the hotline
287-7050

E-mail them to youthprograms@cincymuseum.org
Notes:
PLEASE COMPLETE THIS FORM AND RETURN IT TO THE YOUTH PROGRAM COORDINATORS/DIRECTOR IMMEDIATELY!

I ______________________________
   Youth Volunteer

And ______________________________
   Parent/Guardian

Have read the entire Cincinnati Museum Center Youth Program handbook and fully understand all of the guidelines and policies therein.

I agree to abide by the guidelines and policies of Cincinnati Museum Center Youth Program.

Signature: ______________________________
   Youth Volunteer

Date: ___________

Signature: ______________________________
   Parent/Guardian

Date: ___________
TITLE: Teen Apprentice for CAUSE Program

DEPARTMENT: Education

DESCRIPTION: Under the supervision of the Director of Community Initiatives, the CAUSE Apprentice will be responsible for assisting current CAUSE Program teens in planning and implementing a summer science program for children grades K-8 in the city of Camden.

MAJOR DUTIES AND RESPONSIBILITIES:

- Complete training in public speaking, workplace etiquette, level on animal training, and classroom and behavioral management.
- Develop a personal portfolio
- Assist current CAUSE program teens in the design and facilitation of science curriculum for a 5-week camp program for children grades K-8.
- Assist current CAUSE program teens with supervising and leading trips and activities during camp for a classroom of children grades K-8.
- Keep a journal.
- Weekend work required.
- Other duties as assigned by the supervisor.

SKILLS AND ABILITIES REQUIRED:

- Biology or related high school courses.
- Enthusiasm and boundless energy.
- Ability to troubleshoot or solve problems quickly.
- Creativity and imagination.
- Patience with difficult situations.
- Genuinely interested in working with kids and science.
- Responsible, dependable, and flexible.
- Ability to speak Spanish a plus.

ELIGIBILITY REQUIREMENTS:

- All eligible applicants must attend high school in Camden City and be between the ages of 14-18.

WORK SCHEDULE:

- Apprentice employment will begin in March and end August of the same year.

PAY RATE: Minimum Wage

Equal Opportunity Employer
Preparation:

Eight weeks before training starts
Recruit teens
Brainstorm activities

Six weeks before training starts
Test out activities
Start scheduling interviews
Start conducting interviews
As applications arrive, enter applicant info in database
Respond to applicants as applications come in
Order materials for activities
Create training schedule
  Include activities such as: exhibit exploration, alumni shadow, alumni review presentations, alumni host game testing knowledge of exhibit locations, practice presentation skills
Create volunteer description/Send volunteer description to interested alumni and adult volunteers

Five weeks before training starts
Schedule Volunteer Orientation
Schedule Guest Services shadow
Recruit and schedule guest speakers
Schedule and reserve field trip

Four weeks before training starts
Finalize activities
Update handbook
Application deadline
Continue to schedule and conduct interviews
Purchase binders, dividers, notebooks, pens
Place alumni, adult volunteers
Create exhibit exploration guide
Assess snack needs

Two weeks before training starts
Make copies of handbook
Send information about first meeting to accepted teens
Assemble needed materials
Schedule time to get badges
Buy snack

One week before training starts
Email Protective Services, Guest Services
Make a name badge for each teen.
Request registration table from Service Desk.

Training Session One:

Training Objectives:
The teens will understand that the Science Minors program has a climate of mutual respect and support for everyone involved.
The teens will start to get to know each other and the staff.
The teens will start to explore the Museum exhibits.
The teens will set expectations for themselves and communicate these expectations through their journals.

Materials: (one per teen) name badge, agenda, "Getting to Know You" activity, Scavenger Hunt activity, binder, notebook, handbook, set of four dividers, label, pen, Museum map, clipboard.
(for entire class) sign in sheet, 4 digital cameras, markers, example binder with dividers labeled “Agendas,” “Science,” “Presentation Skills” and "People," snacks and drinks.

Lesson Plan: Introduction to Program

Half an hour before teens are scheduled to arrive
Staff Meeting
Meet with volunteers; review agenda; assign roles. Have a volunteer act as photographer, download images off of digital camera (30 minutes)

Fifteen minutes before teens arrive
Go to Great Hall to meet teens.
As teens arrive, introduce yourself, have them sign in and give them their badges. Let them know that we will wait for others to arrive before going to the classroom. (25 minutes)

Ten minutes after program is scheduled to start
Lead teens to classroom. Challenge the group to find their way there (they all were in the NASA ERC for their interview.) Outside the door to NASA, tell them that you will give them the password to enter, but they need to pay attention since you will not repeat the password again. Tell them the password (4-3-2-1) have one of the teens enter the password and open the door. Once in the classroom, distribute the agendas. Tell them that they will get an agenda every week outlining what the day’s activities will be and that the
The program will end on time at 4 pm each week. Ask for a volunteer to read the agenda out loud for everyone to hear. (5 minutes)

**Introductions**
Have each staff person introduce him/herself and say something about their hopes for the group. Then have the teens each say their name and what school they go to. Finally, have any Science Minors alumni say their names and how long they have been with the program. (five minutes)

**Icebreaker**
Have one of the Alumni staff to lead the icebreaker. Have the volunteers hand out the "Getting to Know You" activity sheets and one pen per person. Read the instructions as a group, make sure everyone understands what they have to do and encourage the teens to get up and meet each other. Everyone in the room except the activity leader should participate. The activity leader should encourage shy teens to approach others and keep an eye on the clock. Other adult staff and volunteers should also help teens. At the end of the activity, the activity leader asks one teen to read the first statement and name the teen who fits that description. That teen then reads the next statement and the teen who fits that description, and so on. If any teen does not have an answer for any particular description, then ask for suggestions from the group. Try to make sure that each teen gets a chance to talk to the whole group. To conclude the activity, say something along the lines of how everyone in the group has something unique to contribute and that we hope they will get to know each other better as the weeks go by. (25 minutes)

**Distribute materials**
During the icebreaker activity, the facilitator will place the binders, notebooks, labels, dividers and handbooks around the NASA ERC. In the process of finding the materials they need, the teens will explore the space and see where the restroom, computers for Science Minors use, water fountain and staff cubicles are. To start the activity, the facilitator will list on the white board the items they need to find along with a list of locations where these items may be. Once they have found everything they need, the teens will return to the work tables and assemble the materials according to the example available at the front of the room. They can use markers to write their names on the labels. The teens should place the day's agenda and "Getting to Know You" worksheet in the appropriate section of their binder. (15 minutes)

**Review program, expectations**
The coordinator will have the teens read the entire handbook aloud, illustrating confusing sections with examples as needed. The coordinator will tell the teens to bring the handbook home and return the last page signed by themselves and a parent the following week. (20 minutes)

**Scavenger Hunt: Electricity**
Hand out "Scavenger Hunt" worksheets and clipboards. Have large group define electricity. An easy definition is "Electrons that move to give something power." Once the entire group comes up with a definition for electricity that everyone agrees with and understands, have...
the teens write this definition on their worksheets. Split the group into three teams. Each team needs an adult who is in charge of the team digital camera. The teams need to use the maps to identify exhibit areas in the Museum featuring electricity. The teams need to take pictures of those exhibits in the Museum, write down the location and what the electricity application is (what aspect of electricity is featured.) When time is up, all teams need to return to the Reusable City Lab to see which team found the most examples. Have teens place worksheets and maps into their binders. (45 minutes)

While teens are doing scavenger hunt, have one or two volunteers set up snacks. Teens can enjoy these refreshments when the return from the scavenger hunt.

**Journals**
Explain to the teens that we will be using “dialogue journals” in this program. That means that each week, they will write about a particular topic in their journal and the following week a staff person will respond to what they wrote. Have the teens take out their notebooks, write their names on the outside of the notebook and write a entry about the topic on the agenda. Have a volunteer read the topic out loud so everyone can hear it. Ask the teens to be quiet during journal writing time. Go around and encourage teens to write in their journals. When it seems like most teens have finished writing, then give the entire group a "one minute warning" so that those still writing have a chance to finish their thoughts. (15 minutes)

**Small Group Discussions**
Split the group into two groups. The facilitator and coordinator will each lead a small group discussion about the journal topic. Program staff should emphasize that this discussion time is a chance for the teens to talk about what is important to them. (15 minutes)

Thank the teens for coming and remind them about the following week's start time and meeting place.

**Clean Up and Staff Debriefing**
All volunteers and staff help put materials away. Designate one person (usually a Science Minor alumnus) to take notes of discussion. Have everyone sit down as a group and review the day's events in an effort to determine what worked well, what needs to be changed, what upcoming training topics would best benefit this particular group of teens, any potentially problematic dynamics in the group, etc. (30 minutes)
# Science Minors Winter Training

**Agenda**

**January 20, 2007**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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| 1:30 pm | Meet teens at bottom of Great Hall escalators  
Have teens make name badges |
| 1:45 pm | Walk to Reusable City Lab                                                |
| 1:50 pm | Introductions  
Icebreaker                                                     |
| 2:20 pm | Distribute materials  
Review program, expectations |
| 2:50 pm | Split into three groups  
Scavenger Hunt                                                   |
| 3:45 pm | Return to classroom; Scavenger Hunt results                             |
| 4:00 pm | Journals—What are your expectations for the program?  
What do you want to learn from this program?                       |
| 4:15 pm | Small Group Discussions                                                  |
| 4:30 pm | Dismissed                                                                |
Getting to Know You

**Directions:** Talk to the other Science Minors and find out who fits the following descriptions. Have them write their name next to the description that fits them. Each person can only write their name twice on your sheet!

1. Someone who sings in a choir. ______________________
2. Someone who can describe what an electron is. ______________________
3. Someone who can sing a popular song. (They must sing part of it for you before signing their name) ______________________
4. Someone who plays a musical instrument. ______________________
5. Someone who has acted in a play. ______________________
6. Someone who has read the same book that you have read. ______________________
7. Someone who has a pet. ______________________
8. Someone who likes Chinese food. ______________________
9. Someone who was born in the same month as you. ______________________
10. Someone who likes to read. ______________________
11. Someone who plays on a sports team. ______________________
12. Someone who likes working with younger children. ______________________
13. Someone who has been to a foreign country. ______________________
14. Someone who was born outside of this state. ______________________
15. Someone who won their school science fair. ______________________
16. Someone who speaks a language other than English. ______________________
17. Someone who has visited the Museum of Science & Industry in the past year. ______________________
### Scavenger Hunt: Electricity in MSI

**Materials**
- digital camera (one per team)
- maps of MSI (one per person)

**Procedure**
Have large group define electricity. Once the entire group comes up with a definition for electricity that everyone agrees with and understands, split the group into three teams. Each team needs an adult who is in charge of the team digital camera. The teams need to use the maps to identify exhibit areas in the Museum featuring electricity. The teams need to take pictures of those exhibits in the Museum, write down the location and what the electricity application is (what aspect of electricity is featured.) When time is up, all teams need to return to the Reusable City Lab to see which team found the most examples.
**Scavenger Hunt: Electricity in MSI**

*The class definition for electricity is*

---

**The electricity exhibits our groups found are**

<table>
<thead>
<tr>
<th>Location</th>
<th>Name of Exhibit</th>
<th>How does this relate to electricity?</th>
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<td>Location</td>
<td>Name of Exhibit</td>
<td>How does this relate to electricity?</td>
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Winter 2007 Handbook
Containing Rules, Regulations and Contract
CONGRATULATIONS

Congratulations on being chosen as one of the Museum of Science and Industry’s Science Minors!

SCIENCE MINORS MISSION

The Core Ideology of the Museum of Science and Industry, Chicago is to inspire the inventive genius in everyone by presenting captivating and compelling experiences which are real and educational. To do this, we must be fun, inclusive, provocative and spectacular.

The Museum’s mission for the Science Minors program is to empower teens using science as a catalyst in order to bridge the gap between school and work through active and informal exploration in a diverse and safe community.

PROGRAM OVERVIEW

Science Minors are a group of teen volunteers at the Museum of Science and Industry. Science Minors work together to present activities and share information about Museum exhibits with guests and the community. The focus of Science Minors training is to prepare volunteers to present science activities to Museum visitors. We will accomplish this through doing hands-on science activities, meeting professionals in science, medical and technology careers, and learning presentation skills. Part of this training involves learning the rules of the program, which are included in this handbook. Please review the following information, sign the agreement at the end of the handbook, and return the agreement to the Science Minors staff. If you have any questions, do not hesitate to contact any member of the Science Minors staff.

We are so excited that you are part of this team!
GENERAL MUSEUM INFORMATION

Exhibit Halls Hours:

The Museum of Science and Industry is open every day of the year, except for December 25.

Regular Museum Hours

Monday – Saturday: 9:30 a.m. to 4 p.m.
Sunday: 11 a.m. to 4 p.m.

Open every day except Christmas Day.
Museum general admission is free on Thanksgiving and Christmas Eve.

Holiday Hours

The Museum offers extended holiday hours—until 5:30 p.m.—on:
• November 17, 18, 19, 24, 25 and 26.
• Saturdays and Sundays from December 1 through December 17
• Every Day from December 18 though December 23
• Every Day from December 26 through January 1

*The Museum will close at 4 p.m. on Sunday, December 24*

<table>
<thead>
<tr>
<th>Item</th>
<th>Visitor</th>
<th>Residents Outside City of Chicago</th>
<th>Chicago City Residents</th>
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<tbody>
<tr>
<td><strong>Museum Admission</strong></td>
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<tr>
<td>The Museum's free days have changed. Thursdays will no longer be free. Additional free day information and dates.</td>
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<td>Adult</td>
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<td>Child (3-11)</td>
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<td>$6.25</td>
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<td>Senior (65+)</td>
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<td>$8.75</td>
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<td>Member Voucher</td>
<td>Voucher</td>
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**The U-505 Submarine Optional On-Board Tour**
(Requires general admission, not included.)

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<tr>
<th>Item</th>
<th>Visitor</th>
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<tbody>
<tr>
<td>General Public</td>
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<tr>
<td>Members</td>
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<tr>
<td>Item</td>
<td>Visitor</td>
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<tr>
<td>Museum and Omnimax Admission</td>
<td>Adult</td>
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<td>Child (3-11)</td>
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<td>Senior (65+)</td>
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<td>Member</td>
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<tr>
<th>Item</th>
<th>Visitor</th>
<th>Upgrade</th>
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<td>Second Omnimax</td>
<td>Adult</td>
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<td>Child (3-11)</td>
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<tr>
<td></td>
<td>Senior (65+)</td>
<td>+$4.00</td>
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<td>Member</td>
<td>Voucher</td>
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</tbody>
</table>

**New Free Day Schedule**
The Museum has replaced its Thursday free day schedule with the following schedule for 2007:

General admission will be free on the following dates:

January 3, 9, 10, 16, 17, 23, 24, 30 and 31.
February 1, 2, 3, 4, 5, 6, 7, 13, 14, 20, 21, 27 and 28
June 4, 5, 6, 7, 8 and 9
September 11, 12, 18, 19, 25 and 26
October 2, 3, 9, 10, 16, 17, 23, 24, 30 and 31
November 6, 7, 13, 14, 20, 21 and 23
December 24

Free admission is also available through the [Chicago Public Library Check-Us-Out Card](#)!
Important Telephone Numbers

General Science Minors Number:  (773) 753-6855*

Science Minors staff:

Nina         (773) 947-4160*
Karen        (773) 753-7028*
Alex         (773) 753-7029

*Just dial the extension (numbers in bold) when inside the museum.

- You can call anytime to leave a voicemail message.
- Personal beepers or cellular phones are not allowed on the job and should be put away (not just turned off) while working. Making or receiving personal phone calls without permission is not acceptable behavior. If someone needs to get in touch with you, they can call the Science Minors staff number and we will let you know that you have received a call.

SCHEDULE

<table>
<thead>
<tr>
<th>Winter Training — all meetings are Saturdays from 1:30 pm - 4:30 pm, except for our Field Trip Day (TBD) when we will meet from 9 am - 4 pm</th>
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<tbody>
<tr>
<td>January 20</td>
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<td>January 27</td>
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<td>February 3</td>
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<td>February 10</td>
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<td>February 17</td>
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Attendance

Attendance will be monitored by the Science Minors staff with appropriate follow-up. Science Minors volunteers are required to sign in and out when they arrive at the Museum. This enables the Science Minors staff to know who is in the building and keep track of service learning hours.

Part of our job is to ensure that you learn good working skills while you are at the Museum. Good working skills include punctuality and dependability. The following rules help ensure that you realize the consequences for lateness and unreliability.

**DO NOT BE LATE! DO NOT MISS TRAINING!**

But if it is absolutely unavoidable,

**CALL! CALL! CALL!**

Call 773-753-6855 (Science Minors General Number) and give a reason for your absence in advance. Preferably at least the day before, but **no later than 1:30 pm.** You do not have to speak to anyone directly. Just leave a message with the person who answers the phone or on the voice mail. Make it a complete message:

“This is [Your Name]. Today is [Monday, etc.]. I won’t be in today because [reason].”

You will not receive credit for any time you did not show up.

**CONSEQUENCES FOR LATENESS AND UNEXCUSED ABSENCE**

Whenever you are late or absent you will have to sign an acknowledgment that states that you were late and/or absent. This acknowledgment will be kept in your file. Since the training only lasts 10 weeks, consequences are as follows:

Volunteers will be considered **unexcused late** if they show up more than 10 minutes after training has started without having notified Science Minors staff before 1:30PM of that day.
Volunteers will be considered **unexcused absent** if they do not report to training and don’t notify Science Minors staff before 1:30PM of that day.

- After **each** unexcused lateness, you will be issued **one late warning**.
- Two unexcused **late warnings** equal **one unexcused absence**.
- After the **first unexcused absence**, you will be issued a **termination warning**.
- After **two unexcused absences**, you will have to leave the program.

If you leave the program before completing the training, you will not receive credit for hours you have accumulated up to that point. There may be an opportunity to participate in a subsequent training series. Program staff will discuss this option with you.

**Check with Science Minors staff if you can make up any time you missed.** But remember, you cannot show up at the Museum and expect to get credit for that time if you haven’t scheduled it beforehand. Managers schedule their workers based on how much there is to do each day and they cannot be expected to create work for someone who shows up unannounced.

**PROFESSIONAL BEHAVIOR**

**Dress Code**
You represent the Museum to our visitors. A neat and professional appearance shows our visitors that you take pride in your work and are ready to serve them.

1. You must wear your ID badge at all times while on the job. Your ID must be clearly identifiable by visitors.
2. You must be personally clean and neat.
3. Clothing, including shoes, must be in good condition; not torn, stained, or rumpled.
4. Hats, T-shirts, torn jeans and shorts are not acceptable attire.
5. Personal cell phones and beepers are not allowed—put them away while working (not just turned off). If someone needs to give you a message, have him or her call the Science Minors staff phone number, and they will pass on the message to you.
6. When you are out on the floor, you must wear neat black or khaki colored pants.

On training days, the Science Minors t-shirt is acceptable attire. You should dress comfortably on these days since we will be doing a lot of activities.

If you report to the Museum inappropriately dressed, you will be sent home to change. You will not receive credit for any time you are not appropriately dressed.
**Drugs and Alcohol**

Volunteers coming to the museum possessing or under the influence of alcohol or illegal drugs will not be tolerated. They will not be permitted to remain at the Museum and will not receive credit for that day. Disciplinary actions will be taken, possibly resulting in termination.

The uses of profanity, gang signs or other expressions of gang affiliation are not permitted.

**Sexual Harassment**

The Museum prohibits sexual harassment of any employee—male or female.

Sexual harassment may involve sexual conduct that interferes with another person’s work performance or creates an intimidating, hostile, or offensive work environment or statements or actions that expressly or implicitly indicate that an employee’s submission to or rejection of sexual advances is a condition of employment or will affect employment decisions.

It may include:

- unwelcome sexual advances
- sexually explicit language or gestures
- requests for sexual favors
- an offensive overall environment, including the use of vulgar language, the presence of sexually explicit photographs or other materials and the telling of sexual stories.

An employee who believes that he/she has been subjected to harassment of any type—whether by a co-worker, officer, vendor or agent of the Museum—should bring the matter to the attention of his or her supervisor or the Human Resources division.

An investigation of any complaint will be undertaken immediately. Disciplinary action up to and including termination will be taken promptly against any offending employee, supervisor or otherwise. An employee who reports a complaint will not be subject to retaliation or penalty. To the extent reasonably possible, confidentiality with respect to reports and related investigations will be maintained.
**Disciplinary Action**
Failure to adhere to the Professional Behavior described above or otherwise treating everyone with respect will result in disciplinary action as follows:

**Step 1. Verbal warning.** Science Minors staff will talk with the teen about the incident. Staff will make note of the conversation in the program contact log.

**Step 2. Written warning.** Science Minors staff will create a written document detailing the incident which will be signed by both the staff and teen. A copy of the document will be given to the teen and the original will be kept in the teen’s file. Staff will make note of the warning in the program contact log.

**Step 3. Suspension.** Science Minors staff will suspend the teen for four weeks and confiscate his/her badge. During this time, the teen will not be permitted to participate in any Museum-related activities. At the conclusion of the four weeks, the teen will schedule a time to meet with Science Minor staff to discuss re-instatement into the program. Staff will make note of the suspension in the program contact log.

Science Minors staff can exercise their discretion to follow the above steps or accelerate the process based on the severity of the incident.

Science Minors understand that this is a volunteer program and that the success of the program depends on each individual taking responsibility to perform to the highest standards of behavior. Disrespectful behavior by any individual degrades the program and cannot be tolerated. Teens that are unable to live up to these expectations will be asked to leave the program.

**BENEFITS**
Museum volunteers enjoy many benefits.

1) Free parking in the Museum parking lot
2) 20% Food Discount
3) 20% Discount in The Big Idea
4) Free admission to exhibits, non-sold-out Omnimax Shows
5) Free or discounted admission to many Chicago area museums. *
6) Free or discounted admission to ASTC member institutions. *

*For more details, contact Penny Aulston, Volunteer Services Manager (773) 753-2595.
**Evaluations**
Periodically throughout your involvement in the program, you will have the chance to meet with Science Minors staff and discuss your performance. This will help us make sure that you are well-prepared to represent the Museum and interact with Museum visitors. You will also evaluate your own performance through your journal and in other ways. Your evaluations become crucial information. They give us a good idea of how you felt about the Science Minors program and enable us to improve the experience in the future. We also refer to them should you ask us to act as a reference in the future for college.

**Science Minors staff agrees to:**

1. Provide orientation, training, and written materials appropriate to Science Minors volunteers throughout the program.

2. Remain accessible for consultation, problem solving and guidance as related to Museum procedures and expectations.

3. Provide working space, equipment, and supplies needed for Science Minors volunteer to experience the hands-on philosophy of learning at the highest level possible.

4. Maintain a personnel file for each volunteer, which includes a record of accrued hours and outstanding contributions.

5. Provide written evaluation of Science Minor volunteer performance, which can be used as a job reference, and offer constructive feedback to each participant.

6. Offer the following benefits:
   a. letters of reference for school
   b. discounts
   c. free parking
   d. uniform t-shirts

7. Make a commitment to assist Science Minors volunteer in expanding professional skills, enhancing knowledge of science and accelerating personal growth.
**Photo Release**

Museum of Science and Industry staff and affiliates may take photographs of Science Minors to use in promotional materials, grant reports and other Museum-related materials. Participants in this program and their families grant permission to the Museum of Science and Industry to take photographs/films/video footage of the Science Minor and also give the Museum of Science and Industry permission to put the finished photographs/films/video footage to any uses which it may deem proper.

Science Minors and their families waive any right to inspect and approve the finished product or copy that may be used or the use to which it may be applied.

Science Minors and their families agree that the Museum of Science and Industry is the sole owner of all rights in the negatives, photographs, videotape recordings, prints, and all other items bearing the Science Minor’s photograph, name likeness or performance, including full domestic and foreign copyrights therein, and shall have the exclusive right to make such use of these reproductions as it wishes.

Science Minors and their families release, discharge and agree to save harmless the Museum of Science and Industry, its affiliates, employees, sponsors, agents and the officers, directors, employees, licensees, successors, and assigns of the foregoing, from any liability in connection with the aforementioned use of the Science Minor’s photograph, name likeness or performance, including but not limited to any claim they have or might have for invasion of privacy, misappropriation and/or defamation.

This Consent and Release is intended to be of perpetual duration.
**Science Minors Volunteer Agreement**

The Winter 2007 Science Minors training takes place Saturdays from 1:30 pm to 4:30 pm from January 20 to March 17. There will be a field trip—on that day we will meet from 9 am to 4 pm.

**Purpose:** In order to assure a positive learning experience for the Science Minors volunteer and maintain a clearly defined, efficient program; the following terms are hereby agreed upon:

**The Science Minors volunteer agrees to:**
1. Report to training as scheduled.
2. Be prompt and reliable in reporting for training.
3. Maintain ongoing communication with Science Minors staff by:
   a. notifying the office ahead of time if unable to work scheduled hours for any reason.
   b. keeping the office informed of any schedule changes.
4. Keep an accurate record of hours worked.
5. Behave in a professional manner, i.e. treating visitors as top priority and adhering to museum dress code at all times.
6. Refrain from using personal beepers or cellular phones; only make or receive personal phone calls with permission from a staff person.
7. Refrain from use of alcohol, drugs or profanity while on Museum grounds.
8. Respect confidentiality of staff, volunteers, and Museum visitors.
9. Accept the Museum's right to counsel or dismiss the volunteer due to poor performance or attendance.
10. Interact with staff, volunteers and guests with respect.
11. Use computer equipment and other Museum property solely for business purposes.

I have read and understand the expectations of this program.

____________________________________  __________________________________
Signature of Science Minors Volunteer                  Date

____________________________________  __________________________________
Printed Name of Science Minors Volunteer                     ___

I am the parent or legal guardian of the above-named minor and grant permission to the Museum of Science and Industry to take photographs/ films/ video footage of my child. I also give the Museum of Science and Industry permission to put the finished photographs/films/video footage to any uses which it may deem proper.

____________________________________  __________________________________
Parent or Guardian Signature                      Date
Science Minors

Winter 2007 Training Schedule

January 20, 2007—need alumni
   Introductions
   Review program, expectations
   Small group scavenger hunt

January 27, 2007—need alumni
   Icebreaker
   Electric Circuits
   MSI knowledge (quizzes, tours)

February 3, 2007—need alumni
   Icebreaker
   IDs
   Working with the public (role playing)
   Electrical kits

February 10, 2007—need alumni
   Mars 3D/Omnimax
   Shadow alumni
   Guest speaker

February 17, 2007
   Volunteer Orientation

February 24, 2007
   Field Trip to Underwriter Labs

March 3, 2007—need alumni
   Electrical Kits

March 10, 2007—need alumni
   MSI Amazing Race
   Family Day prep
   Practice w/alumni

March 17, 2007—need alumni
   Family Day
   Practice
   Guest Speaker
2006-2007 Schedule

**Fall Training**—Topic: Industrial Design
all meetings are Saturdays from 9:30 am to 12:30 pm except for the Field Trip day (date to be determined, schedule will be 9 am-4 pm)
October 7
October 14
October 21
October 28
November 4
November 11—Field Trip

November 18 (no meeting November 25—Thanksgiving)

December 2
December 9
December 16—Family Day

**Winter Training**—Topic: Electricity
all meetings are Saturdays from 1 pm - 4 pm except for the Field Trip day (date to be determined, schedule will be 9 am-4 pm)
January 20
January 27
February 3
February 10
February 17

February 24
March 3
March 10
March 17—Family Day

**Spring Training**—Topic: CSI—Crime Scene Investigation (tentative)
all meetings are Saturdays from 9:30 am to 12:30 pm except for the Field Trip day (date to be determined, schedule will be 9 am-4 pm)
March 31
April 14
April 21
April 28

May 5
May 12
May 19
May 26
June 2
June 9—Family Day

Participants in the Science Minors program must commit to one of the above trainings (ten meetings). After successfully completing training, participants must sign up for at least two days/month to present science activities to Museum visitors.
<table>
<thead>
<tr>
<th>Job</th>
<th>From</th>
<th>To</th>
<th>Volunteer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astro Diapers</td>
<td>10:00 am</td>
<td>12:00 pm</td>
<td>Sophia Aguilera</td>
</tr>
<tr>
<td>Astro Diapers</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Stanley Cheng</td>
</tr>
<tr>
<td>Astro Diapers</td>
<td>12:00 pm</td>
<td>2:00 pm</td>
<td>Sam Martin</td>
</tr>
<tr>
<td>Cladistics</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Ashwin Ramesh</td>
</tr>
<tr>
<td>Cladistics</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Christopher Tong</td>
</tr>
<tr>
<td>Dinos Alive</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Viviana Almandsmith</td>
</tr>
<tr>
<td>Dinos Alive</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Frederick Edwards</td>
</tr>
<tr>
<td>Dinos Alive</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Brandon Hargrave</td>
</tr>
<tr>
<td>Dinos Alive</td>
<td>2:00 pm</td>
<td>6:00 pm</td>
<td>Alex Joseph</td>
</tr>
<tr>
<td>Discovery Lab (3)</td>
<td>10:45 am</td>
<td>4:30 pm</td>
<td>Alicia Fong</td>
</tr>
<tr>
<td>Discovery Lab (3)</td>
<td>11:00 am</td>
<td>4:30 pm</td>
<td>Alicia Cooper</td>
</tr>
<tr>
<td>Dry Ice Comets</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Sean Curran</td>
</tr>
<tr>
<td>Enviro Team</td>
<td>11:00 am</td>
<td>4:00 pm</td>
<td>Cindy Disante</td>
</tr>
<tr>
<td>Exhibit Explorer (1)</td>
<td>9:30 am</td>
<td>1:30 pm</td>
<td>Richard Smith</td>
</tr>
<tr>
<td>Exhibit Explorer (1)</td>
<td>10:30 am</td>
<td>2:30 pm</td>
<td>Stewart Chalem</td>
</tr>
<tr>
<td>Exhibit Explorer (1)</td>
<td>12:30 pm</td>
<td>4:30 pm</td>
<td>Ryan James</td>
</tr>
<tr>
<td>Exhibit Explorer (1)</td>
<td>1:00 pm</td>
<td>5:00 pm</td>
<td>Cristina Deptula</td>
</tr>
<tr>
<td>Exhibit Explorer (1)</td>
<td>2:00 pm</td>
<td>6:00 pm</td>
<td>Kevin Varela</td>
</tr>
<tr>
<td>Geology – Minerals</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Gina Geiselman</td>
</tr>
<tr>
<td>Geology - What Rock Is It?</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Christopher Diaz</td>
</tr>
<tr>
<td>Geology - What Rock Is It?</td>
<td>2:00 pm</td>
<td>6:00 pm</td>
<td>Sophie Lee</td>
</tr>
<tr>
<td>Geology - What Rock Is It?</td>
<td>2:00 pm</td>
<td>6:00 pm</td>
<td>Jonathan Wong</td>
</tr>
<tr>
<td>H-racer</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Karen Cham</td>
</tr>
<tr>
<td>Kids Go Green</td>
<td>10:00 am</td>
<td>4:00 pm</td>
<td>Jasmine Edelstein</td>
</tr>
<tr>
<td>Kids Go Green</td>
<td>10:00 am</td>
<td>4:00 pm</td>
<td>Jenny Luong</td>
</tr>
<tr>
<td>Kids Go Green</td>
<td>10:00 am</td>
<td>4:00 pm</td>
<td>Gabriel Navarette</td>
</tr>
<tr>
<td>Kids Go Green</td>
<td>10:00 am</td>
<td>4:00 pm</td>
<td>Connie Phu</td>
</tr>
<tr>
<td>Kids Go Green</td>
<td>10:00 am</td>
<td>4:00 pm</td>
<td>Tiffany Phu</td>
</tr>
<tr>
<td>Kids Go Green</td>
<td>10:00 am</td>
<td>4:00 pm</td>
<td>Meisze Phung</td>
</tr>
<tr>
<td>Solar Cars</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Jason Cham</td>
</tr>
<tr>
<td>Solar Cars</td>
<td>10:00 am</td>
<td>12:00 pm</td>
<td>Marco Lau</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>12:00 pm</td>
<td>4:00 pm</td>
<td>Robert MacConnell</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>1:00 pm</td>
<td>5:00 pm</td>
<td>David Owen</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>1:00 pm</td>
<td>5:00 pm</td>
<td>Mig Ponce</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>1:00 pm</td>
<td>5:00 pm</td>
<td>Travis Turner</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>4:00 pm</td>
<td>10:00 pm</td>
<td>Alan Fisher</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>6:00 pm</td>
<td>10:00 pm</td>
<td>Margaret Chobanian</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>7:00 pm</td>
<td>10:00 pm</td>
<td>Inge Fine</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>7:30 pm</td>
<td>10:30 pm</td>
<td>Debbie Dyke</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>7:30 pm</td>
<td>10:30 pm</td>
<td>Gerald McKeegan</td>
</tr>
<tr>
<td>Telescopes (6)</td>
<td>7:30 pm</td>
<td>10:30 pm</td>
<td>Don Saito</td>
</tr>
<tr>
<td>UV Light</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Sam Burress</td>
</tr>
<tr>
<td>UV Light</td>
<td>10:00 am</td>
<td>2:00 pm</td>
<td>Victor Chen</td>
</tr>
<tr>
<td>UV Light</td>
<td>2:00 pm</td>
<td>6:00 pm</td>
<td>Gina Geiselman</td>
</tr>
</tbody>
</table>
Name_________________________________  Birthday: _____/_____/_____ 
Address:___________________________________  City:_______________________ 
State:_____  Zip Code________________
Email:___________________________________
Home Phone: (_____)______________________  Cell Phone: (_____)______________________
How would you like to be contacted?_____________________________________________
Who do you live with?_____________________________________________________________________
What are your parents'/guardians’ names?_____________________________________________________
What language(s) do you speak at home?_____________________________________________________
What form(s) of transportation do you use to get here?____________________________________________
School:____________________  Grade:___________  Class of:_______________
What science topics are you most interested in?_____________________________________________________
What other subjects do you like to study?_____________________________________________________
What activities are you involved in at school or out of school?____________________________________
What do you like best about these activities?_______________________________________
Do you have any other hobbies?_____________________________________________________________
What are your favorite foods?_____________________________________________________________
What are your favorite kinds of pizza?_____________________________________________________
What are your favorite snack foods?_____________________________________________________
What fruits and vegetables do you like?_____________________________________________________
What are your favorite beverages?____________________________________________________________
What foods do you dislike?_____________________________________________________
Do you have special dietary needs?___________________________________________________________
Do you have allergies to food or other things?_____________________________________________________
Is there any other medical information we should know?_____________________________________
If you had one super-power (scientific or otherwise), what would it be and what would you do with it?______
When signing up to volunteer, please sign up for one of the following shift times. These are the only time frames in which you can schedule yourself so make sure you can volunteer for the full shift you have signed up for.

**Monday-Friday:**
- Half AM Shift: 9am – 2pm
- Half PM Shift: 1:30pm – 5pm
- Full Shift: 9am – 5pm

**Weekend:**
- Half AM Shift: 9am – 2pm
- Half PM Shift: 1:30pm – 6pm
- Full Shift: 9am – 6pm

To schedule for **September 1 – January 5:**

1. Email us at discovery_corps@pacsci.org with the days and times you would like.
2. Complete the attached form and place it in the Discovery Corps Scheduling folder in the VS office.
3. Send the attached form by postal service (snail mail) to:
   Discovery Corps Coordinator
   200 Second Ave NE
   Seattle, WA 98109.

For the summer, we would like you to commit to volunteering **at least 2 half-shifts per month**, on a regular schedule.

You **MUST** send in your preferences for September 1-January 5 **by August 21 AT THE LATEST** to be considered for your first-choice shifts. If we receive your scheduling requests after August 21, many shifts may be filled for the season, and we may not be able to give you your first preferences! We will then reply to you with your volunteer schedule by August 26.

If you are scheduled for a particular volunteer shift but know that you will be out of town on that date due to family, school, or other obligations, just notify us, and you won’t be put on the schedule for that particular day. As always, if you must make a change to your schedule, please notify us at least **four** days in advance. If you wake up and are feeling ill or if you have an emergency on the day of your shift, you **MUST** call the Ops Leads at 206-443-2872 and DC Coordinator at 206-443-2884 to let them know that you will not be in.

As always, it is important that you do not just show up on a day that you are not scheduled! If this occurs, you will be asked to go home. This is not because we don’t value your time and effort (In fact, we love having you here!), but it is because we may already have the number of volunteers that we can support for the day. Likewise, it is very important that you are here when you have committed to working a shift!
Fall 2008 Discovery Corps
Scheduling:
Name: __________________________________________

How many hours would you ideally like to work per month? ________ hours per month

To schedule your regular shifts, please rank each of the following options with the appropriate code:
P = Preferred. I really want to volunteer for this shift. It’s my first choice, so please sign me up!
Y = Yes. I am available to volunteer during this shift, and it will be no problem to get there.
L = Least desirable. This shift is not convenient for me, but if it is the only choice, I will do it.
N = No. It is not possible for me to volunteer for this shift. Please do not schedule me for this!

_____ First Saturday of each month; AM
_____ First Saturday of each month; PM
_____ First Sunday of each month; AM
_____ First Sunday of each month; PM
_____ Second Saturday of each month; AM
_____ Second Saturday of each month; PM
_____ Second Sunday of each month; AM
_____ Second Sunday of each month; PM
_____ Third Saturday of each month; AM
_____ Third Saturday of each month; PM
_____ Third Sunday of each month; AM
_____ Third Sunday of each month; PM
_____ Fourth Saturday of each month; AM
_____ Fourth Saturday of each month; PM
_____ Fourth Sunday of each month; AM
_____ Fourth Sunday of each month; PM

OR (If you are able to volunteer during the week without compromising your school schedule)
I prefer to volunteer these regular weekday shifts (Please code according to the above key):
________________________________________________________
________________________________________________________

To schedule individual shifts over school holidays and breaks, rank each of the following options (These dates will not be considered a part of your regular schedule, so you will be scheduled for the single shift listed only.):

_____ Friday, October 10 (Teacher Work Day); AM
_____ Friday, October 10; PM
_____ Tuesday, November 11 (Veteran’s Day); AM
_____ Tuesday, November 11; PM
_____ Friday, November 28 (Day After Thanksgiving); AM
_____ Friday, November 28; PM
****WINTER BREAK:
_____ Monday, December 22 (Winter Break); AM
_____ Monday, December 22; PM
_____ Tuesday, December 23 (Winter Break); AM
_____ Tuesday, December 23; PM
_____ Wednesday, December 24 (Christmas Eve); 9am-3pm
_____ Friday, December 26 (Winter Break); AM
_____ Friday, December 26; PM
_____ Monday, December 29 (Winter Break); AM
_____ Monday, December 29; PM
_____ Tuesday, December 30 (Winter Break); AM
_____ Tuesday, December 30; PM
_____ Wednesday, December 31 (New Year’s Eve); AM
_____ Thursday, January 1; PM
_____ Thursday, January 1 (New Year’s Day); AM
_____ Friday, January 2 (Winter Break); AM
_____ Friday, January 2; PM

January 6 is the first day back to school in the Seattle Public School District!

Is there anything else you’d like us to know about your scheduling requests?
________________________________________________________
________________________________________________________
Don’t let high school happen to you...

MAKE A PLAN!

College admission officers are on the lookout for students who will succeed in college (i.e. finish and earn a degree). Research shows that students who take hard classes in high school - like honors and AP courses - are more likely to graduate from college. SAT scores are the second most important piece of your college application packet. It makes sense that taking rigorous classes will result in better SAT scores. Below are the College Board recommendations for the courses you should take in high school so you can both be competitive for admission and prepared to succeed in college.

<table>
<thead>
<tr>
<th>Language Arts</th>
<th>Science</th>
<th>Math</th>
<th>Social Studies</th>
<th>Foreign Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Semesters</td>
<td>6 Semesters</td>
<td>Alg I, Alg II &amp; Geometry Minimum</td>
<td>6 Semesters</td>
<td>4 Semesters</td>
</tr>
<tr>
<td>English, literature, writing</td>
<td>2 semesters biology, 2 semesters chemistry</td>
<td>Trigonometry, pre-calculus, calculus</td>
<td>U.S. History, 1 semester of U.S. Gov’t, 1</td>
<td>Minimum</td>
</tr>
<tr>
<td>composition, speech</td>
<td>&amp;/or physics, 2 semesters earth/space sciences, advanced biology, advanced chemistry, or physics</td>
<td></td>
<td>semester in economics, 1 semester world</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>history or geography</td>
<td></td>
</tr>
</tbody>
</table>

|                     |                               |                                               |                                           |                   |
|                     |                               |                                               |                                           |                   |
|                     |                               |                                               |                                           |                   |
| 1st Semester        | Grade                         | Grade                                        | Grade                                     | Grade             |
| Freshman            | 2nd Semester                  |                                               |                                           |                   |
| Sophomore           | Grade                         | Grade                                        | Grade                                     | Grade             |
| 1st Semester        | 2nd Semester                  |                                               |                                           |                   |
| Junior              | Grade                         | Grade                                        | Grade                                     | Grade             |
| 1st Semester        | 2nd Semester                  |                                               |                                           |                   |
| Senior              | Grade                         | Grade                                        | Grade                                     | Grade             |
| 1st Semester        | 2nd Semester                  |                                               |                                           |                   |

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The SAT is given 7 times every academic year. The College Board recommends taking it once in the spring of your junior year & again in the fall of your senior year (depending on 1st score).

### SAT Test

<table>
<thead>
<tr>
<th>SAT Test #1</th>
<th>SAT Test #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reg. Deadline</td>
<td>Test Date</td>
</tr>
<tr>
<td>SAT Scores (Scale = 200-800)</td>
<td>Writing</td>
</tr>
</tbody>
</table>

### Activities & Organizations

List any extracurricular activities or organizations (i.e. outside of normal classes) you have been involved with. Examples include summer camp, science fair, performances, sports, band, clubs, cheerleading, 4H, FFA, internships and volunteering.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 

### School References

List the names & contact info of any teachers or school administrators from whom you would feel comfortable asking for a letter of recommendation or reference for college and/or a job. College admissions officials recommend getting to know teachers from your core classes (i.e. non-elective courses).

1. 
2. 
3. 

### Skills

#### Communication Skills
- Written Communication
  - Research papers, lab projects, citations & bibliographies
- Oral Communication
  - Teaching, speech, debate, meeting
- Presentation
  - Poster, exhibit, demonstration

#### Interpersonal Skills
- Group Work/Collaboration
  - Projects, committees, organizations
- Leadership
  - Events, projects, committees, meetings, organizations
- Network Building
  - Fundraising, event/program coordination
- Mentoring
  - Tutoring, teaching

#### Computer & Info Management Skills
- Computer Software Skills
  - Word processing (Word, WordPerfect), spreadsheet (Excel, QuattroPro), presentation (PowerPoint, Freelance), graphic design/layout (Photoshop, InDesign), HTML / Web Design (Dreamweaver), other (Acrobat, Endnote)
- Computer Operating Systems
  - Apple Macintosh, IBM PC, Unix, Linux
- Information Research
  - Projects, training

#### Research Skills
- Laboratory Skills
  - Equipment use, techniques, observation, safety
- Field Research Skills
  - Equipment use, techniques, observation, safety
- Data Management
  - Spreadsheets, graphing, statistical
- Scientific Method & Problem Solving
  - Science fair; experimental design, hypothesis formulation & testing, sampling, defining variables, qualitative/quantitative techniques

#### Business Skills
- Money Management
  - Budgeting, tracking
- Business Hardware
  - Copy machine, FAX, business phone, postage

#### Personal Skills
- Effective time management, responsible, dependable, self starter, work independently, friendly, well organized, quick learner, good judgment, positive attitude, creative, analytical, flexible, goal-oriented
Yale Peabody Museum of Natural History

Evolutions After School Program

Grading Rubric

<table>
<thead>
<tr>
<th></th>
<th><strong>PERCENT OF GRADE</strong></th>
<th><strong>“A” QUALITY WORK</strong></th>
<th><strong>“B” QUALITY WORK</strong></th>
<th><strong>“C” QUALITY WORK</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATTENDANCE</strong></td>
<td>10%</td>
<td>Present for ≥90% of regular program meetings.</td>
<td>Present for ≥80% to &lt;90% of regular program meetings.</td>
<td>Present for ≥70% to &lt;80% of regular program meetings.</td>
</tr>
<tr>
<td><strong>WORK</strong></td>
<td>30%</td>
<td>Work assignments are graded based on the amount of effort put into them &amp; whether or not the quality of the work reflects the abilities of the student. All work will be given a due date &amp; 50% of the total work grade will be based on whether work is turned in on time. This includes work not turned in due to absence unless absence is excused through prior arrangement or with a note from a parent/guardian.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **PERSONAL RESPONSIBILITY** (grade given by peers) | 30% | • Follows all program policies & procedures;  
  • Recognizes when staff or peers need help & does so without being asked (e.g. assists in clean-up, willingly gives up computer to those doing homework, stops working on computer when asked). | • Follows most program policies & procedures;  
  • Recognizes when staff or peers need help only when asked. | • Has trouble following program policies & procedures;  
  • May or may not help staff or peers when asked. |
| **TEAMWORK** (grade given by peers) | 30% | • Always exhibits patience & flexibility when working in a group setting;  
  • Always contributes appropriately & positively to group projects & encourages others to contribute as well;  
  • Consistently actively engaged, respectful & attentive in all classroom activities including discussions, presentations & field trips;  
  • Consistently assumes leadership &/or extra responsibilities. | • Sometimes patient & flexible when working in a group setting;  
  • Sometimes contributes appropriately to group projects;  
  • Sometimes engaged, respectful & attentive in classroom activities;  
  • Sometimes volunteers to assume leadership &/or extra responsibilities. | • Reluctant to be respectful or patient when working in a group setting;  
  • Rarely contributes actively or appropriately to group projects;  
  • Cannot be counted on to volunteer or be respectful during classroom activities. |

**IMPORTANT:** Beginning after report cards are distributed at the end of the first marking period (week of 20 November 2006), students wishing to use Evolutions computers for recreational purposes will be required to submit a copy of their most recent report cards to staff. Students with a grade of D or F in any class will be required to complete homework in these or related courses prior to recreational computer use. Student report cards will be re-evaluated at the end of each marking period.
EVOLUTIONS After School Program
Career Exploration Guidelines

What in the world does a coprologist or speleologist do?

The following activity is meant to help you start thinking about your future and what you might want to do as a career. It was developed because:

- There are literally hundreds, if not thousands, of careers you have never heard of;
- Over the course of your life, you will spend roughly 86,000 hours working. You have the next 5-8 years to figure out what you’re going to spend these hours doing and get the training you’ll need so you can be successful. It’s worth spending a little time thinking about it.
- If you are lucky enough to love your job, you’ll never work a day in your life!

By the way, a coprologist studies feces and can also be called a scatologist. Speleologists study caves. Now you know.

GUIDELINES

For this activity you will be exploring two [2] science careers that interest you, and generating a short fact sheet for each. These fact sheets will be compiled and posted on our website as a resource for teachers and other students. In a separate activity, you will turn one of these fact sheets into a museum panel that will be displayed in the Peabody Museum.

Getting Started:
- For this activity, chose two [2] careers to explore:
  - They do not have to come from the provided list;
  - They do need to be science-related (if you’re unsure whether a career qualifies, please ask):
    - One (1) of them must be a geoscience (see the sample list of geoscience careers).
  - If you choose a career that you already know well, you won’t get much out of this activity.
  - If you are a program veteran, you may not choose a career you’ve previously explored though you may explore a closely related career.

Note: Though your career choice should reflect your interests, challenge yourself to find out more about a career that you know little or nothing about - try to think a little “outside the box”. If you already have a strong interest in a specific career path, consider doing some research to identify a specialty, branch or sub-discipline. Examples: If you are interested in illustration, consider exploring how digital special effects artists spend their day. If you are interested in physics, consider researching astro- or particle physics.

The Fact Sheets:

Page setup:
- Font: Times New Roman: 12pt maximum, 11pt minimum
- Page margins: 1.0” maximum, 0.8” minimum
- Line spacing: single spaced paragraphs with a double space between sections
- No longer than 4 pages

Grading:
- 33%: Formatting & layout (how well did you follow these guidelines)
- 33%: Content [quality of your research, information and writing]
- 33%: Interview [did you do it]

- You will get extra credit [and extra knowledge!] for extra effort! Examples include interviewing additional people, researching additional careers, utilizing additional information sources, etc...
- All assignments must be emailed to jamie.alonzo@evoasp.org as a .doc or .rtf file by the deadline.

THE SECTIONS:

For your fact sheet, use the following section headings in the same order they appear below. Each section should include the answers to the questions asked but do not need to include the questions themselves. Your answers should be complete sentences though you may also use bullets if appropriate. All of your answers should come from a reliable source – no improvisation! [with the exception of the “Interest” section]

- Place your name, school and grade in the top right corner of the front page;
- Pick an appropriate title and center it under your name, school and grade [12pt minimum, 18pt maximum].
Occupation Description:
• Provide a detailed [200 words or more] description of what people in this occupation do.

Required Education:
• What level of education or training is suggested for this occupation (e.g. license, certification, Associate’s degree, Bachelor’s degree, Master’s degree, PhD)?

Geographical Requirements:
• Do you need to live in a specific location or environment to do this type of work? Why or why not?

Interest:
• What do you like about this career?
• Why do you think you would be good at this occupation?

Interview
• For this section you will conduct a phone interview with a professor whose research is related to the major/career you have chosen;
• Choose one [1] of the universities from the “Required Coursework” section below and identify a professor who works in the department offering the major you are interested in;
• Start this section by listing the interviewee’s name, title, university, department and research specialty. Also include the date the interview was conducted;
• The rest of this section should include answers to following interview questions:
  o What skills do you need to succeed in this career?
  o What high school classes are particularly important in preparation for pursuing a college major in this occupation?”
  o Is there anything else [courses, extracurricular activities, volunteer positions, other experiences] that a student could do while in high school that might help in preparation for pursuing a college major in this occupation?”
• You will be talking to an expert – this is a great opportunity to get any questions you might have answered;
• Do the interview section last so you can use it to fill-in any information you weren’t able to find;
• IMPORTANT: Do not conduct the interview until you’ve completed the interview workshop in class and be sure to have your interview cheat sheet in-hand when conducting the interview;

Related Occupations:
• List at least 3 other careers that are related to this one and give 1-2 sentence description for each.

References:
• List 3 references [books, publications, magazines, computerized information, websites, etc...] used for this research. Refer to http://www.easybib.com/ for information related to formatting your citations.
• Your interviewee should be included as one of your references.

Required Coursework:
• This section will be pages 3 & 4 of your fact sheet;
• At the top of page 3 repeat your name, school, grade and the title;
• Find two [2] colleges or universities that you might be interested in attending that offer a major leading to the career you chose;
• For each university, list its name, location [city & state], the major and all of the classes you are required to take at this college/university to receive the major related to your career. One university course list should be on page 3 and the other on page 4;
• Cutting and pasting the list of courses off of a university website is OK but beware that the list may need to be re-formatted.

Online resources to help you with your research:
• http://www.bls.gov/k12/  
• http://science.education.nih.gov/LifeWorks.nsf/CareerFinder.htm  
• http://www.bls.gov/oco/home.htm  
• http://www.careerinfonet.org/select_occupation.asp?next=occ_rep&level=&optstatus=1111111111&idd=1&nodeid=2&soccodde=&stfips=&jobfam=  
• http://www.acrnetwork.org/decision.htm  
• http://www.earthscienceworld.org/careers/brochure.html [list of geoscience careers]
C.A.U.S.E. Program Profile

The New Jersey Academy for Aquatic Sciences initiated the Camden Aquarium Urban Science Enrichment (C.A.U.S.E.) Program in 1993 through initial funding from the Howard Hughes Medical Institute. The project has four tiers consisting of the CAUSE Staff Program, an after-school Ecology Club/Aquatic Science Club, a summer Science Camp and a parent’s initiative. The Program is designed to provide meaningful experiences in science and education, to promote science literacy and to provide educational and/or employment opportunities to Camden City’s students. Visit [http://www.njaas.org/Community/CAUSE.html](http://www.njaas.org/Community/CAUSE.html) for more information.

The **CAUSE Staff Program** is a personal and professional life skills program that trains high school students interested in science and education to work as public program explainers for the spring and as summer camp counselors for the summer camp in the months of July and August. Second, third, and fourth year Junior Staffers also help teach the after-school ecology club sessions for elementary and middle school students. CAUSE staff participate in many activities such as community service projects, in house and out house programming such as outreachs, birthday parties and overnight programs.

The CAUSE Program runs from November until the end of August. Training begins in November with a 15-20 week course in basic oceanography marine biology and animal classification. Sessions on public speaking and informal education are included. Junior Staff attend weekly workshops on teambuilding, communication skills, diversity, inquiry-based learning/teaching, job readiness, college preparation, interviewing, and resume writing skills.

C.A.U.S.E. has expanded into a regional collaborative with other area museums’ youth programs. Now, youth from the Academy of Natural Sciences, Franklin Institute, Philadelphia Zoo, and the Please Touch Museum all participate in skill-building workshops, lectures and work exchanges to foster networking opportunities and peer mentoring.

The Aquarium partners with four area elementary/middle schools and other community partners such as the Camden Red Cross and local churches in delivering the Ecology Club, Aquatic Science Club and Summer Science Camp Programs. The school partners are: Coopers’ Poynt Family School, Riletta Twyne Cream Family School, LEAP Academy Charter School, and Camden’s Promise. Many children walk to school therefore, these programs are offered on-site for the convenience of the children and their parents. Family schools also serve as community/parent resource centers for their neighborhoods. Our other community partners recruit students directly from their programming and hold summer camp at their site.

The Ecology Club/Aquatic Science Club Ecology Club is an after-school program offered 5 consecutive weeks and is open to all elementary/middle school students in our partner schools. The program focuses on local and global conservation issues in a hands-on, interactive style. One purpose of the club is to keep the younger students tied to the C.A.U.S.E. program throughout the year. Club participants are usually the same students who attend the Summer Science Camp. This program is frequently the only after-school activity available to students during those years when budget cuts eliminate after-school programming. Aquatic Science Club is an on/off-site after school program offered to community partners, schools, and families.

The **C.A.U.S.E. Summer Camp** is a five-week science enrichment day camp. Each year camp has a different “theme” and may focus on aquatic and terrestrial organisms, habitats, conservation issues and locales of historical significance. Students go on field trips each week to a natural area, which coincides with the curriculum topic for that week. The camp is offered to any k-8th grade student that attends our partner schools but is primarily for students that attend the morning Basic Skills Improvement Program (BSIP). The camp is held in the afternoons to extend the day for the students and also so working parents are comforted knowing where their child is all day. Camp is held at Coopers’ Poynt and Riletta Cream Schools in July and at LEAP Academy and at one of our other community partners in August.

The **Parents Initiative** involves parents and their children’s science learning to help them overcome their own personal inhibitions against science. Once these inhibitions are identified and overcome through family science activities, parents can utilize the skills learned to support their children in their science aspirations and to affirm their scientific interests. The Parents/Guardians of the Junior Staff are invited to the Aquarium twice a year to take part in Family Night. Family Night activities include Family Science, tours, presentations, and games- all led by the CAUSE Staff. This allows parents to see their child “in action” and understand what their child is learning in the program. Parents/Guardians of the K-8 campers are invited to participate in Parent’s Go to Camp Day. They have the opportunity to attend one of our trips and/or attend a camp session. Parents are also invited to see the projects created by the students at the end of camp.
Tampa's Lowry Park Zoo's Department of Youth Development
Tampa's Lowry Park Zoo
Department of Youth Development

The Department of Youth Development at Tampa's Lowry Park Zoo is committed to the positive personal and professional development of youth between the ages of 13 & 19. We carry out this commitment by providing programs that emphasize our mission, “to connect people with the living Earth” (LPZ Strategic Plan 2004). Although we receive and accept applications from all areas of our community, we actively recruit students from the only three Title 1 high schools (63% or more of the students receive free or reduced lunch) in Hillsborough County. This allows Tampa's Lowry Park Zoo to play a critical role in providing opportunities to teens with limited resources. We are also located adjacent to three of the lowest income areas in Hillsborough County thus allowing for an even greater community impact through educational programming and outreach.

The following is a list of our teen program initiatives. Each program focuses on a specific subject with subsequent programming and curriculum to support that focus.

**Zoo Crew Explorers (ZCE) Program**, a 3-year structured work-based learning program that provides participants with hands on work experience in various departments throughout the Zoo including Animal Care, Education, Administration, and Operations. The ZCE works as a career ladder program, with more seasoned participants serving in leadership roles and taking on greater responsibilities based on experience and performance. After successful completion of training and their individual volunteer commitment, participants are able to apply for paid employment throughout the summer or can be hired on as temporary Tampa's Lowry Park Zoo staff.

**Middleton W.A.V.E. (Working Advocates for Vanishing Ecosystems) Project**, an environmental research program that trains local participants to identify variances in ecosystem continuity located in and around the Hillsborough River through environmental research testing. A joint effort with a local Title 1 high school, participants attempt to address alternative solutions to account for these variances and present their findings to visitors at Tampa's Lowry Park Zoo, University of South Florida, environmental agencies and other community-based organizations.

**R & R (Recycle & Reuse) Program**, a program that educates participants on various recycling initiatives and their overall environmental significance. After thorough training from Tampa's Lowry Park Zoo staff, each teen will work with a partnering community based organization to help them develop and implement their own recycling initiative, beginning with research, then planning, development and finally, implementation & evaluation.

**Youth Connection**, a work-based delinquency prevention program for middle school students provides teens requiring additional motivation and mentoring an opportunity to work in a Zoo department based on interest. Participants work two hours a day, 4 days a week throughout the school year while receiving bi-weekly performance-based stipends.

**Media Arts Program**, a volunteer-based program for teens that gives hands on training and experience in media production. In conjunction with Tampa's Lowry Park Zoo Marketing department, participants will learn various marketing strategies and then apply them to the current teen programming initiatives. Skills learned will include web design, photography, article writing, publication layout, interviewing, videography & linear editing. Teens will eventually produce a quarterly program on City of Tampa Cable Access Television.

Each program is conducted on site with education and outreach components taking place throughout the community. All programs adhere to a comprehensive evaluation strategy to assess program performance, community impact and participant engagement. Evaluation methods include: parent surveys; school progress reports; community, staff and visitor evaluations; and self assessments. Program sustainability is dependant upon the generous contributions of private donors, foundations, and local, state and federal granting authorities.
In addition to the individual programs’ focus, every program places an emphasis on **Seven Major Principles**. These principles serve as the guiding developmental structure by which all of our programs are implemented. The following is a list of our Seven Major Principles followed by examples of how each is applied:

- **Financial Literacy** – To include activities such as the Florida Stock Market Challenge, Checkbook Accountability Project, financial planning sessions, workshops on credit, debt and money management, and a trip to the Stavros Center and local bank to open a savings account.

- **Personal Empowerment** – To include activities such as self expression techniques, journal writing, personal assessment activities, and self mastery training.

- **Professional Development** – To include activities such as workshops on career planning, resume writing, and interviewing skills, department experience, scheduling success activities, SCANS competencies, and documentation development.

- **Educational Achievement** – To include activities such as after-school tutoring, Princeton Review’s SAT/ACT preparation course, state college tour for high school juniors and seniors, school progress reports submitted quarterly, and college preparation workshops.

- **Animal & Environmental Stewardship** – To include activities such as a coastal/river cleanup, ecosystem research project, onsite environment & conservation presentations, offsite animal outreach presentations, and tour of Orlando’s sea turtle sanctuary.

- **Community Involvement** – To include activities such as a community walk for a cause, community outreach program, serving on community councils, conducting a community survey, and publishing Crew’s News, a newsletter written by participants.

- **Social Growth** – To include activities such as communication workshops, team building activities, diversity trainings, youth networking opportunities, leadership training sessions, and open forum discussions.

All skills learned will assist teen participants in making a successful transition from adolescence to productive adulthood.

To help promote and support technology literacy among participants, Tampa’s Lowry Park Zoo has developed the **Computer Connections Program**. Designed to provide computer access to students with limited resources, participants without computers are given a laptop throughout their program participation. The laptops can be used to complete school assignments and for formalized computer instruction offered at Tampa's Lowry Park Zoo. Once participants graduate from the program and continue to a post secondary institution or full-time employment, they are given the laptop to continue improving their computer literacy skills.

To provide additional guidance to the Department of Youth Development, the **Department of Youth Development Advisory Committee** has been created and meets quarterly to discuss ideas, program updates, events, fundraising, evaluations and policies. Committee members include educators, representatives from the city and county, community leaders, parents, one teen from each teen program, past participants, local CBO representatives and a board member from Tampa’s Lowry Park Zoo.

In efforts to assess program impact throughout the community, the Department of Youth Development maintains the demographics of all participants. Categorized by gender, race and income, we are able to identify the needs of our community and respond to that need with an increase in direct services.
In order to accommodate the tremendous growth and success of all of our teen program initiatives, Tampa's Lowry Park Zoo has identified and secured funding to design and construct a new facility dedicated to all of the Department of Youth Development initiatives. The Youth Development Center at Tampa’s Lowry Park Zoo is a new building designed to engage, educate and enrich the lives of teens in our programs and throughout the community. All Department of Youth Development initiatives will be held at the 2,400 square foot facility that will be located on the north side of the Florida Environmental Education Center (Zoo School) to complement its already exquisite campus.

The Center will provide resources for all of the Department of Youth Development initiatives including but not limited to:

- Two new office spaces for the Department of Youth Development management team as well as two gender-specific bathrooms.
- A six-computer, technology workstation that serve as data, research and education access points to the teens during program planning and implementation.
- A wireless network will be established in the building to provide internet access for Computer Connections training days.
- 2000-square-feet of meeting spaces will provide a set location for numerous meetings and events for both program participants and community partners. Workshops, orientations, staff meetings, interviews, classes, community presentations, neighborhood partnership meetings, program trainings and more will occupy much of the space in the Youth Development Center.
- When not being used by a meeting or event, the Center will serve as a Safe Place drop-in center for program participants and other community youth. Teens will be allowed to access the building after school and on weekends to complete homework assignments or to just interact with others.
- Utilizing all available space, cabinetry and storage will be found in not only the traditional counter and cabinet locations but also underneath the computer workstations and in the seats adjacent to the windows. Storage will be used to secure personal belongings and store presentation and program materials.
- Conversation, interactive, and silent spaces throughout the building will allow teens the flexibility of coming to interact with others or sit silently to study, read or think.
- With an interior environment conducive to learning, teens will be surrounded by color with an edge of professionalism. Additional wall designs and aesthetics will be purchased or created by participants adding to the already soothing and comfortable atmosphere that they create.
- An Environmental Research-Ready Lab (ERRL) will be located in the corner of the center. ERRL will be developed by the USF Department of Environmental Policy and Research and will provide teens with the necessary equipment to conduct environmental research experiments. The
Corner ERRL will include microscopes, enclosed experiment box, research kits, a laptop for data analysis, and more.

- An exterior street entrance will give teens a direct access point to the Center, allowing the flexibility of longer Center hours without being confined to Zoo operation hours.
- A bike rack, parking lot and bus stop are all located within 30 seconds of the Center, giving the teens numerous transportation options.

The Department of Youth Development’s Teen Development Center is scheduled to open Summer 2007.
Department of Youth Development
2006-2007 Program Partners

The Department of Youth Development at Tampa's Lowry Park Zoo would like to acknowledge all of the funders that made these initiatives possible.

Verizon Foundation
Tampa Bay Estuary Program
Starbucks Foundation
Tampa Port Authority
Conn Memorial Foundation

We would also like to thank our partners for their continuous support of the youth served through our programs.

University of South Florida
Hillsborough County Parks, Recreation and Conservation
   Leto High School
   Middleton Magnet High School
   Jefferson High School
   Blake Magnet High School
University Area Community Development Corporation
   Dale Carnegie Training
   Museum of Science & Industry
   City of Tampa Parks & Recreation
   Hillsborough River Watershed Alliance
Children’s Board of Hillsborough County
   Youth as Resources
   Mayor’s Youth Corps
   Suncoast Federal Credit Union
   Orlando Science Center
   Kid City, The Children’s Museum of Tampa
   Keep Hillsborough County Beautiful
   Community Tampa Bay
   Boys and Girls Club of Tampa

For more information please feel free to contact:

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YouthALIVE!

Children’s Museum of Pittsburgh
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YouthALIVE! (Achievement through Learning, Involvement, Volunteering, and Employment), a program originally funded by a grant from the Dewitt Wallace-Reader’s Digest Fund through the Association for Science and Technology Museums, has sites at approximately 60 children’s museums, science centers, botanical gardens, zoos, and aquariums nationwide. Now with continuing support from the United Way and private donors, YouthALIVE! is entering its thirteenth year at the Children’s Museum of Pittsburgh. Based in the Youth Programs Center and the Museum’s Department of Education, the programs that comprise YouthALIVE! are designed to promote youth development by nurturing students and preparing them to take on leadership roles. YouthALIVE! prepares teens for the workforce through mentoring, resume development and job training, and through frequent performance reviews. The program also works closely with schools to enhance the performance of each student. Science and math literacy is stressed, as well as the freedom to explore and to nurture their talents in the Creative Arts.

Goals and Objectives:
The YouthALIVE! program at the Children’s Museum of Pittsburgh strives to involve youth, especially the youth in our immediate North Side neighborhood, in meaningful activities that promote adolescent growth, self-esteem, and job skills. YouthALIVE! increases responsibility and productivity skills leading members to career opportunities where they can become contributing members of society. Specific objectives of the YouthALIVE! program are to serve “at-risk” neighborhood youth between the ages of ten and eighteen.

Mission Statements:
The mission of YouthALIVE! is to provide a secure and nurturing environment for participants while instilling confidence within each individual so they can achieve their personal highest potential.

The Children’s Museum of Pittsburgh nurtures children’s innate joy, creativity and curiosity. We provide developmentally appropriate exhibits, programs, and opportunities for play both inside and outside the Museum. We serve as a resource for families and build meaningful partnerships with schools and community groups.
YouthALIVE! Program Components

After School Club
This program is geared towards 6th, 7th, and 8th grade students from Allegheny Traditional Academy Middle School in our North Side neighborhood and is a hands-on educational enrichment program set in an after school club environment. Students plan, design, construct, staff, maintain, and evaluate exhibits, programs, or presentations for museum visitors while learning more about the process of exhibit development. Members volunteer at the Children’s Museum and work with community volunteers in learning what local resources are available for them. The club meets for an hour each Tuesday, Wednesday, and Thursday from October through May at the Museum. Each month, participants meet guest speakers and visiting artists, go on an experiential education outing in the community and are involved with community service projects. Through this program, members learn necessary life-skills that enable them to resolve conflicts and problem solve. Also, self-esteem is boosted by achieving goals independently and in groups. Students learn how to handle responsibility, think critically and creatively while becoming the leaders of tomorrow.

Mentors
These individuals help coordinate our After School Club three days a week during the school year. Mentors will assist the other Youth Programs staff with the ongoing responsibilities of running the program. These Mentors are themselves trained through the Mentoring Partnership of Southwestern Pennsylvania to be effective in their position. Mentors are also required to lead sessions when necessary. Most importantly, these students serve as role models and leaders for our younger Youth Programs participants. Mentors work for approximately 8 hours a week during the school year and must be in 11th or 12th grade.

Summer VolunTEEN Program
After extensive training and orientation sessions, approximately twenty high school students are prepared to volunteer at the Museum over the summer. These teen volunteers help with outreach programs at summer festivals, work with visitors at the Museum, and attend weekly Youth Workshops that help them learn job, academic, and valuable life skills. Participation in the Summer VolunTEEN Program is usually a pre-requisite for paid employment through the Youth Programs at the Museum.

Internships
Internships are available for university students to work with the YouthALIVE! program. Most internships are unpaid, but students can sometimes receive credit from their university for their participation.
YouthALIVE! Program Activities

While YouthALIVE! participants help determine the activities that they would like to take part in, the program tries to focus on:
- Community involvement and service
- Career building and exploration
- Job readiness training
- Fortifying self-confidence and promoting self-awareness
- Goal setting
- Conflict resolution and problem solving skills (anti-bullying component)
- Teaching tolerance and diversity appreciation
- Self-expression through the creative arts
- Giving youth a real sense of ownership for the community and the Museum

Family members and caregivers are encouraged to be involved in the YouthALIVE! program. We welcome your feedback on programming and suggestions for additional programming. Please do not hesitate to call, email, visit us at the Children’s Museum, or send us notes in regard to any ideas or concerns you may have for this program.

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New Jersey Academy for Aquatic Sciences

CAUSE Program

Summative Evaluation

Phase II: Case Study

August 2007

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EXECUTIVE SUMMARY
New Jersey Academy for Aquatic Sciences, CAUSE Program
Summative Evaluation Phase II: Case Study
August 2007

The New Jersey Academy for Aquatic Sciences (the Academy), in Camden, NJ, is in the fourteenth program year of the Community and Urban Science Enrichment Program (CAUSE). The CAUSE program seeks to support urban youth with the goals to 1) encourage personal growth, self-esteem, and self-confidence; 2) foster the development of life skills, including resiliency and social skills; 3) support and value diversity; and 4) provide opportunities for leadership. Youth are employed by the Academy to provide community outreach, lead science clubs, and teach summer camp with local children in grades K-8. After four years of extensive formative evaluation, the Academy staff expressed interest in summative evaluation to discover the long-term impacts of the CAUSE program, the effectiveness of the program model, and components contributing to the program’s success. The Institute for Learning Innovation, which also served as the formative evaluator, was contracted for the summative evaluation of the CAUSE program.

This report summarizes Phase II of the summative evaluation, specifically focused on the nature of the CAUSE program model. Using a case study design, the program model, values, and activities were investigated and described. The program was then compared to an existing framework from the Positive Youth Development field, outlined by Milbrey McLaughlin in *Community Counts* (2000). Using McLaughlin’s aspects of successful youth development (i.e. youth-centered, knowledge-centered, assessment-centered, and community-centered), the CAUSE program was found to be closely aligned with this empirically-based framework. As a result of this comparison, it is apparent that the CAUSE model is largely effective, closely resembling a successful youth development program. The program not only promotes youth development, but it achieves youth development.

Other key findings include:
- The staff values an asset-based, “whole child” approach to youth development, taking into account the range of support and opportunities youth need to be successful.
- Both youth and staff describe positive youth development in similar ways and mutually agree that the CAUSE program supports youth development.
- The youth-centered aspects of CAUSE are evident in the program’s intentional approach to mentoring and supporting youth’s diverse needs.
- Knowledge-centered aspects of CAUSE are reflected in the college-level marine biology instruction and knowledge that underpin the program.
- Assessment-centered aspects are regularly incorporated at the program, staff, and youth levels.
- The community-centeredness of CAUSE is evident in it’s the safe environment founded on family-like relationships with in the program.
- Of the 4 key components outlined in a successful youth development program, it is recommended that the Academy continually revisit and develop programmatic activities that will increase the CAUSE program’s alignment with McLaughlin’s framework, especially in the areas of communication with youth, increasing opportunities to program with youth, and expanding community contacts and visibility.
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INTRODUCTION

The New Jersey Academy for Aquatic Sciences (the Academy) contracted with The Institute for Learning Innovation (the Institute), an Annapolis, MD-based non-profit research and evaluation organization, to conduct a summative evaluation of the CAUSE program. Beginning in the summer of 2006 and ending in late spring 2007, the evaluation allowed the program staff at the Academy and their funders to better understand the long-term impacts of the CAUSE experience on participants (Phase I). The evaluation also explored the CAUSE program model, with a view to supporting the Academy staff’s goal of creating a replicable model for other institutions (Phase II). This report focuses on Phase II of the summative evaluation, a case study of the CAUSE program.

Project Description

The New Jersey Academy for Aquatic Sciences is located in Camden, New Jersey, which is one of the most economically distressed cities in the United States. Camden is the second poorest city of its size in the U.S., the first being East St. Louis. The Academy was incorporated in 1989, with the New Jersey State Aquarium officially opening in 1992. The construction of the Aquarium on Camden’s waterfront - across the Delaware River from the Philadelphia waterfront - was the pioneering step in efforts to revitalize the City. The foremost objective of the Academy is to promote the understanding and protection of aquatic life and habitats. The Academy strives to be a responsible member of the community, assisting in its economic and social redevelopment by providing citizens with opportunities for employment and self-enrichment. The mission of the Academy is to “promote the understanding, appreciation and protection of aquatic life and habitats through research, education, and youth development programs.”

In 1993, the Academy implemented the Community And Urban Science Enrichment Program (CAUSE) to provide science education and employment to community teens. After a one year pilot period, the Academy received a $300,000 grant from the Howard Hughes Medical Institute to launch the CAUSE program after this pilot year. The CAUSE program trains high school youth in marine science, biology and professional and personal life skills to prepare them for paid employment as CAUSE staff as educators and mentors for K-8 youth in the Academy’s after-school aquatic science clubs and science summer camps.
Goals of Summative Evaluation Study

The summative evaluation offers Academy staff the opportunity to reflect on the CAUSE program’s impacts and outcomes over the past 13 years. Central to understanding the impacts of CAUSE is an understanding of the underlying ideals of youth development supported by the program. The Academy staff believes that a youth development program should impart to its participants the ability to be successful in any environment. To this end, the CAUSE program is designed to:

- Encourage personal growth, self-esteem, and self-confidence;
- Foster the development of life skills, including resiliency and social skills;
- Support and value diversity; and
- Provide opportunities for leadership.

These key program goals formed the basis for understanding CAUSE and informed the evaluation approach.

At the outset of the summative evaluation, Academy staff expressed the desire to document the program and its impacts and to better understand the program model as a whole. The staff anticipated these results would allow for decision-making relative to 1) potential program improvements and 2) replication of the program either in another location or with middle school-aged children. The summative evaluation, therefore, was designed document the impact of the program on participants’ knowledge, skills, and attitudes, describe the program model, and relate the program model to current literature within the youth development field. Specifically, the key questions leading the summative evaluation were as follows:

1. What is the long-term impact of participating in CAUSE in the areas of
   a. science and teaching
   b. community leadership
   c. academics
   d. career choice and workplace preparedness
   e. life choices
2. Is the CAUSE model effective in promoting youth development? If so, how?
   a. What is the nature of program model?
   b. Do youth and Academy staff think about youth development similarly?
   c. To what degree does the program model compare to a framework from the youth development literature?

The Phase I study focused on the long-term impacts of the program (Research Question 1). These results were reported in *CAUSE Program Summative Evaluation, Phase I: Long-term Impacts* (Foutz, 2007). The Phase II study was designed to describe the CAUSE program model, the views of staff and youth on youth development, and how the program fits with programs as described in the youth development literature (Research Question 2). This report documents the findings from the Phase II study.
Phase I: Long-term Impacts Results

Phase I of the summative evaluation focused on understanding the long-term outcomes of the program on its participants (Foutz, 2007). Institute researchers used a mixed-methods evaluation approach, including both qualitative and quantitative methods. Specifically, both surveys and alumni focus groups were used to assess program impacts. Data were collected from alumni, or former participants, of the program, as well as from current CAUSE participants.

The Phase I findings demonstrated that the CAUSE program impacted participants in the areas of science and teaching, community leadership, academics, career choice, workplace preparedness, and life choices. The program demonstrated impacts on participants currently involved in the program and those who are no longer involved. Overall, the CAUSE program was successful in promoting youth development in the areas of science and teaching, community leadership, academics, career choice and workforce preparedness, and life skills. CAUSE alumni are committed to continuing their education past high school and also continue to be involved in science, education, and community service as adults. Based on self-reported impacts, the study found that the greatest area of impact was on participant’s workplace preparedness followed by supporting diversity and career choice. CAUSE participants reported joining CAUSE because they needed a paying job but also because programmatic aspects set it apart from a typical job. CAUSE was seen as attractive based on the aquarium as the program’s location and the opportunity to learn science information.

Building on these results, the Phase II study was intended to better understand the CAUSE program itself: what is the model for the CAUSE program and what makes the program successful?

METHODS

Case Study Methodology

For this Phase II study of the CAUSE summative evaluation, a qualitative case study design was chosen. Case study methodology is a research design derived from the social sciences. Case study methodology allows the researcher to “describe [the case] in depth, in detail, holistically and in context” (Patton, 2001). The “case” is the focus of the study. A case is understood to be a bounded, self-contained system. This means, as complex as a system may be, its limits and components could be discovered and described, given enough time. When conducting a program evaluation, the program itself is the case (Stake, 1995). However, a case study could define its case as any number of organizations or phenomena, for example, all the charter schools in New Jersey or the nature of a collaboration between a museum and a school.

The goal of the case study is to present a true-to-life description of the case. One way of doing this is to describe the case “holistically,” as a whole unit, without singling out one outcome or
element as the focus of the study. Multiple points of view or approaches to the case may be used, leading to a variety of methods including observations by the researcher and interviews and focus groups with people closely connected to the case. To this end, qualitative case studies usually include a rich, thick description of the case, that allows the reader to learn about the case through the eyes of the researcher and the words of the research participants. This type of description also adds to the context that is essential to building the understanding of the case. The case, whatever it may be, is embedded within the larger environment, or context, in which it operates. A case study aims to help the reader understand the context surrounding the case: what are the influences and limiting factors for the case? Ultimately, an evaluation that takes the form of a case study may feel less “evaluative” or judgmental than a typical evaluation. This is because providing thorough understanding of the case through description typically allows readers to draw their own conclusions from the data presented.

A qualitative case study design was chosen for the Phase II CAUSE study. A case study design was well-suited to the primary research question for this phase: What is the nature of the program model? This question calls for a descriptive answer which a case study can provide. The researcher’s previous involvement with the program highlighted the need to take a holistic view of the program. A holistic approach would allow the program’s stakeholders to better understand the program by representing the multiple perspectives of both Academy staff and CAUSE participants. Including youth in this process was a natural outgrowth of the way Academy staff members’ value youth and their perspectives. Finally, the contextual nature of a case study design would situate the program within the Academy, the community of Camden, and in light of literature describing youth programming and youth development.

Overall, this report reflects the case study design in that it: 1) employs descriptive elements throughout to illuminate the CAUSE program; 2) takes a holistic approach to describing the program; 3) presents multiple perspectives; 4) places the CAUSE program within its context; and 5) is not overly evaluative in its tone.

The qualitative methods used in the research design are typical of those used in a qualitative case study design. Qualitative case studies use a variety of methods in combination including observations, interviews and documentary evidence (Patton, 2001). The methods used in this Phase II summative evaluation study included interviews, focus groups, written reflections, observations, and document review. The use of each method is detailed below.

**Staff interviews**

Three current and one former Academy staff members\(^1\) were interviewed for Phase II. Staff members were selected based on the extensive, long-term contact they had with the program. Three Academy staff members were interviewed in person; one former staff member was interviewed by telephone. Interviews were conducted in March, April, and May 2007.

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\(^1\) In the context of this report, the term “Academy staff” is used to refer to the adults who coordinate and run the CAUSE program, although the teens are employed by the Academy as well and are therefore also staff members. The high-school aged people in the CAUSE program itself are referred to as participants, youth, and teens in this report.
Academy staff members who were interviewed for the case study were uniquely suited to comment on the program. All have served an important role in the shaping of the program. Two of the four had served as program manager, one was the education director who helped conceive the project, and the fourth was a former program participant and now the program’s coordinator. Their combined experience with the program spanned from the pilot program and the program’s inception to the current program year.

Staff members were asked to reflect on the program’s intended outcomes, their role in the program, the program’s leadership, the training provided Academy staff members who work with the CAUSE program, teen recruitment, areas that need improvement, and barriers to program success. These questions were developed by Koke and Dierking for their study of youth development programs funded over a ten-year period by IMLS (2007). Additionally, staff members who now or previously filled the role of program manager were asked about the program’s community involvement and partnerships. All staff members were asked a series of three questions used by King et al (2005) to measure the degree to which youth and staff members have similar perspectives on youth development. The protocol for the staff interview can be found in Appendix A. The in-person interviews were recorded and transcribed. The telephone interview was not recorded; instead the researcher took extensive notes. A qualitative trend analysis was used to identify significant trends in the responses.

Focus groups with current teens

A series of iterative focus groups were conducted with current CAUSE participants. The same six teens were invited to participate in four teen-only focus groups held in December 2006, January 2007, February 2007, and April 2007. These teens and their parents also were invited to participate in a parent-teen focus group held in May 2007. Teens were selected for inclusion in the focus groups by the researcher and the program manager. Two males and four females were selected. Teens were selected to represent the diversity that is inherent in the CAUSE program, including racial and ethnic diversity, home-life and parental support, academic success, length of time in CAUSE (from two to four years), and nature of participation. Before the focus groups were conducted, a letter was sent home with the teens and both teens and their parents/guardians signed a consent form. The letter and consent form are included in Appendix B. Teens received a $50 Visa gift card at the last focus group in thanks for their participation.

In the first focus group, the research process and expectations were discussed. In subsequent focus groups, teens were asked to reflect and comment on a series of topics including reasons for participating in the program, support received from the program, mentoring, and goal setting. Teens and their parents were asked the role CAUSE plays in the teen’s life, the impact of CAUSE on their teen’s growth, and community involvement. The focus groups were recorded and transcribed; a qualitative trend analysis was used to identify significant trends in the responses. The protocols for the four teen-only focus groups and one parent-teen focus group can be found in Appendix A.

Written reflections by current teens

Written reflections were used in connection with the teen focus groups to provide opportunities for the teens to give individual, private responses as opposed to the more collaborative, public nature of the focus groups. Teens were supplied with writing prompts and asked to respond to
the prompts, taking as much time as they thought necessary. One reflection was linked to the January 2007 teen focus group and focused on mentoring. The other reflection was distributed and collected by the program staff in March 2007. This set of prompts were the same as those used with the Academy staff members taken from the idea of thriving as presented by King et al (2005). In this case, individual responses were optimal so a comparison could be made between the teens’ individual responses and the results from King et al (2005). Reflections were returned to the researcher and analyzed for patterns and trends. The prompts for the reflections can be found in Appendix A.

Observations
Observations were made by the researcher at a number of CAUSE program activities from December 2006 through May 2007. Activities where observations were made included a CAUSE reunion event in December 2006, a CAUSE staff meeting in March 2007, a program field trip to the National Great Black in Wax Museum in Baltimore, MD in March 2007, and during the researcher’s visits to the program’s office at the Adventure Aquarium. The majority of activities that were observed were selected for inclusion because they represent typical programmatic activities. The exception was the reunion event which was a special opportunity where information could be gathered from a range of current and former participants.

Document review
Documents produced as part of the CAUSE program were reviewed to learn more about policies, training, and curriculum used in the CAUSE program. Materials were provided by the program manager. Materials that were reviewed included the Academy Employee Handbook and Policy Manual, CAUSE Application and job description, Apprentice Application and job description, Curriculum for 2006-2007 training, a program profile, and Summer Camp curriculum written by CAUSE teens.

Focus groups with alumni
Two focus groups were held in connection with a CAUSE reunion hosted by the Academy on December 3, 2006. Academy staff selected reunion attendees who were no longer in the program to participate in the focus groups. One focus group consisted of six participants, and the other consisted of ten participants. Overall, 12 participants were women and four were men. Participants ranged from approximately 19 to 30 years old.

Each focus group lasted about one hour and was held in the CAUSE classroom space apart from the main activities of the reunion event. The data from the surveys was partially analyzed in advance of alumni focus groups and served to inform the direction of the focus groups. Focus group participants were asked to reflect on their experiences in CAUSE and to describe essential elements of the CAUSE program, the program’s impacts on them, and the extent to which the program supported them as teenagers and influenced the adults they have become. The focus groups were recorded and transcribed; a qualitative trend analysis was used to identify significant trends in the responses. Results from these focus groups were also reported in the Phase I report. The protocol for the alumni focus groups can be found in Appendix A.
Role of the Researcher

It is typical in qualitative research design methodologies for the researcher to spend a large amount of time in the research setting. The researchers reoccurring presence in the research setting helps to foster participant comfort and trust. The researcher gets to know the participants through both casual and more formal interactions, developing personal relationships with participants, that build trust over time. These relationships and the level of trust between the participants and the researcher may add to the validity of the data gathered.

This case was no different. I spent a lot of time with Academy staff and CAUSE participants. I felt I was more deeply a part of this program evaluation than is typical. Often, I would sit in the CAUSE office at the Adventure Aquarium reviewing documents while the Academy staff went about their work day. In this setting, causal conversations occurred about programmatic aspects like rules, attendance, and recruitment. These conversations added to my overall familiarity with the program as a whole. I was often included in staff lunches when I was present and heard about their personal lives as well.

Many program participants knew me by name and many realized that I was working to learn more about the program. The teens in the focus group saw me monthly over the course of six months and knew more about the purpose of the study. As a result of spending time with the teens and the staff, I began to take on some of the behaviors and social mores of other adults within the CAUSE program setting. For example, I tried to be honest and dependable with the teens, modeling myself after the approach of the staff members who told me I’d have to “keep it real” to gain the teens’ trust. I knew I was beginning to be welcomed by the teens when I began to receive hugs from them. I had learned that hugs were a common form of greeting in the program, but that the Academy staff always let the teen initiate the hug. About halfway through the Phase II research study, teens began to approach me with hugs as a greeting. Like the other adults in the setting, I let the teens initiate the hug.

I recognize, however, my position of power within these relationships. I was known by the teens, but I was still an adult, someone with authority. I was a white woman working with staff members and teens from a diverse set of ethnic and racial minority groups. I do believe, however, that the variety of methods used added to the reliability of the findings. The multiple methods employed in the case study design allowed for triangulation of findings. This means that a set of data gathered with one method could be confirmed or refuted by another set of data. Themes and patterns discovered with one group of respondents could be tested with another set of respondents. Participants’ familiarity with me also enhanced the data that was collected. During observations, I was a familiar face welcomed in the setting, which I believe allowed the program participants to act as they normally would.

RESULTS

The results for the study have been organized into three sections in this report, each one framed by a research question:
What is the nature of program model? Providing a description of the program, this section is critical for understanding the more analytical sections which follow. It focuses on the program structure and the program values and philosophy. This section also situates CAUSE within the youth development field. It argues that the program needs to be grounded in a Positive Youth Development framework.

Do youth and Academy staff think about youth development similarly? This section provides evidence that the staff and youth think about youth development in similar ways. It draws on a previous study from the youth development literature (King et al, 2005), replicating these findings. Although each group places emphasis on slightly different qualities, both used the language of Positive Youth Development to describe what they feel are the qualities of a successful youth. Both teens and Academy staff also felt CAUSE was a youth development program. This common basis of understanding is essential for the successful implementation of a Positive Youth Development framework.

To what degree does the program model compare to a framework from the youth development literature? This section draws specifically on one framework from the youth development literature, McLaughlin (2000). McLaughlin summarizes the qualities that define successful youth development programs, building a framework that can be used as a basis for assessing the success of existing programs. This framework is described and evidence from the CAUSE program is used to illustrate the fit between the framework and the program. Finally, the program staff is challenged to more closely align with and embrace the McLaughlin framework as their program model.

Taken together, these sections build toward an answer to the primary research question of Phase II: Is the CAUSE model effective in promoting youth development? If so, how? The success of the CAUSE program in promoting youth development can be demonstrated based on the program’s fit with McLaughlin’s framework. The program had strengths in all of the areas outlined by McLaughlin, however, more can be done to reinforce the program model. Namely, the program could improve its existing strengths by 1) continually communicating program activities and expectations to youth, 2) continuing to foster community connections, and 3) using more strategies to program with (as opposed to for) youth.

What is the Nature of the Program Model?

Program Structure

The CAUSE program is a part of the Academy’s Youth and Community Programs within the Education Department. The program is a community outreach component for the Academy and the program’s participants provide staffing for education outreach activities within the organization. The program is “very integral and important to the organization,” said Angie Wenger. This is a result both of its fifteen-year long duration and the enthusiasm of the program’s organizers.

The program has staff and board buy-in. According to Wenger, the current president is “one of our biggest supporters,” adding, “When he talks about the academy and about the good things that we are doing, it’s the first thing out of his mouth.” Having such strong institutional support
is a key to the program’s sustainability. Of course, there was a period early in the program’s history when they were not seen as an asset to the organization.

Now for a long time some people didn’t really understand it because it’s kind of foreign, especially those folks who really never thought [about] youth diversity and inclusion, but once they got to know the kids, and what was going on, they could see the value in it [Interviewer: So do you think it is more integrated now than it used to be?] Yes, absolutely. In the beginning it was certainly a typical scenario, which is those kids over there are Angie’s…And for the public program people, it’s scheduling to get the kids working on the floor. Well, [some] kids didn’t show up, and they were mouthy, and they were talking to each other, but over time I think they realized that it’s not just – it’s still for kids, but they really are a part of us, and we’ve made and strived to have it integrated more as not just the CAUSE staff, but as Academy staff. (Angie Wenger, interview)

The CAUSE youth also represent the underserved audiences that many museums and informal learning organizations are trying to reach. This contact with community youth through CAUSE allows the organization to be more of a part of the Camden city community. Staff members believe their role in the community allows the Academy to truly make a difference.

Within the Academy, the CAUSE program is well integrated into the organization. The teens provide staffing for Academy educational activities. They are the public face of many of the activities that are identified with the Academy and the aquarium, including Deep Sleeps and the annual summer camp for Camden youth. The program also benefits from having Wenger, the former program coordinator, as the Academy’s Executive Vice President. From this position, She is well-placed to speak to the organization as a whole on the benefits of the program.

The Academy staff of the CAUSE program aim to have between thirty to forty teen participants during any one year. This number, of course, fluctuates during the school year and from year to year. Teens in CAUSE range from first year through fourth year participants, typically corresponding to freshman through senior year of high school. See the Phase I study for a further description of current and past program participants (Foutz, 2007).

Recruitment of participants is typically done through local high schools. Academy staff schedules a time for their recruitment visit with the administrative staff at the school. A teacher at the school may act as a liaison to the administrative staff, but this is rare. The recruitment visit, often held a student assembly, consisting of an overview of the program including program goals, activities, and benefits. Current participants as well as Academy mentors host these events, telling their stories and presenting the overview. Pictures of past events are shown. Recently animals from the teaching collection of Academy have been added to the recruitment event, with current participants introducing the animals and facilitating interaction with them. Applications are then handed out to the students in the audience.

Applications require teens to compose an essay on “how the CAUSE program fits into your future goals.” Letters of recommendation from teachers are also required. Interviews are held at
the Adventure Aquarium in the Academy’s CAUSE office, located directly off the aquarium’s public exhibition spaces. Both interested teen and their parent must attend the interview.

Initial training consists of an in-depth 15 week-long course in marine biology that meets twice weekly for three and a half-hour sessions. These sessions begin in November and continue through February. Topics covered in the course are related to the New Jersey Curriculum Core Standards and include:

- Basic oceanography
- A overview of the taxonomic system
- Invertebrates
- Jawless, cartilaginous, and bony fish
- Amphibians
- Reptiles
- Birds,
- Mammals
- Public speaking

Three scheduled tests serve as a review of the course material and an opportunity for teens to demonstrate their familiarity with the materials. All first year teens are required to take and pass this course before becoming a full-fledged CAUSE participant. Teens are not paid during this training course which operates as a type of probationary period for incoming teens.

Working with the public is a significant portion of the teens’ job. Public outreach opportunities include preparing for and working at Deep Sleeps, writing curriculum for and teaching summer camp, leading aquatic science club, and volunteering in the community. Teens in the focus groups cited a variety of reasons for why they liked outreach. One factor of the outreach opportunities that appealed to the focus group teens was the fun they had helping others. “Last Christmas, we went to like a YMCA. We helped kids and we were all like doing arts and crafts and it was like really fun,” said a teen when talking about outreach. Another appealing factor was the relationships that are built. One teen commented that during summer camp relationships develop within the group of teens. “Like at any other job, you wouldn’t develop like a close relationship like we have here. Like at McDonald’s or like Forever 21, like you’d just be like an employee,” he said.

Previous to the aquarium changing ownership and becoming a for-profit venue, teens were also facilitators on the floor of the aquarium. Staff members feel this is a lost opportunity for the teens. Cheronda Frazier, the Youth and Community Program Manager, expressed that this lack of time on the floor is impacting the quality of the teen’s experience:

*Being comfortable around strangers or being comfortable to make a new friend is missing because when you have that constant interaction with visitors, you’re learning that skill, comfort and confidence, and, “I’m the expert. Listen.”* (interview)

This one-on-one interaction was an important part of the original program that the staff is still struggling to replace. CAUSE currently partners with other museums to provide the floor
facilitation experience for the teens. However, these outreach experiences are not as frequent as was the case when teens could be on the aquarium floor.

All teens attend a variety of activities and meetings that take place throughout the year including staff meetings, workshops and Rap sessions. Staff meetings are held twice a month and are facilitated by Academy staff. These meetings often serve as training sessions for upcoming outreach activities. Workshops are held on an occasional basis typically once a month. The focus of workshops is often workplace, college-preparatory or life skills, not science content. Workshops may be facilitated by an outside organization or individual. Examples of workshops topics include classroom management, public speaking, music, communication, diversity training, and resume writing. Rap sessions are held every other week and focus on social issues facing teens. The topics are chosen and facilitated by the teens themselves. Rap sessions are opportunities for the teens to share their feelings and experiences in a welcoming, non-judgmental environment, as explained by this teen:

>This program kinda makes you open up...just the fact they make you feel so much comfortable and they accept you, and nobody is going to sit there and “oh, she’s done that” or “oh, she’s this, and that and the third,” you know. They’re more like, “Wow, like I know what you’re talking about.” Or “I have a friend that’s going through the same thing” and they can talk to you about it and vent. (Teen, focus group)

Additional in-house activities, like Science Days, are also attended by all teens. The focus of these sessions is hands-on science experiments and activities such as necropsies. This allows teens to experience science first-hand.

Field trips regularly are included in the program. Types of trips range from the annual multi-day field excursion to shorter field trips, college tours, and joining other teens at the annual Youth Summit. The teens in the focus group liked going on trips because of the social aspects. They saw them as opportunities for in-group bonding and meeting other like-minded teens. Often on trips, teens find themselves spending up to eight hours sitting next to another teen they don’t connect with very well. In these situations, “you learn like the simplest things and like develop like this whole conversation, you can become the best of friends,” said a teen about the connections that are made during car rides. It is interesting that over and over, both alumni and current participants focused on the journey rather than the destinations of the trips. Being fully in the moment with their fellow participants seemed to be what they thought of most when reflecting on CAUSE trips.

The program has career ladder aspects that are similar to those found in other long-standing museum youth programs, including the Academy of Natural Sciences’ Women in Natural Sciences (WINS) program and the New York Hall of Science’s Science Career Ladder (SCL) program. Figure 1 shows the career ladder for CAUSE youth. In career ladder programs, staff members have the opportunity to move through the program, gaining responsibility by moving into new positions within the organization. In CAUSE, the career ladder idea is reflected in the growing role teens play in developing and facilitating events as they enter their third and fourth program years. This ladder extends beyond positions for high school-aged teens. One step in the
### YEAR 1
- 15-20 week training course
- Level 1 animal training
- Weekly Meetings
- Attend personal and professional life skills workshops and lectures
- Attend field excursions and college visits
- Write articles for program Newsletter
- Community Service Events
- Research, Develop, and Teach curriculum for CAUSE Summer Camp
- Attend Mid-Atlantic Youth ALIVE! Youth Summit (must apply)

### YEAR 2
- Public Programs Training
- Level 2 animal training
- Weekly Meetings, assist rap sessions
- Attend personal and professional life skills workshops and lectures
- Attend field excursions and college visits
- Write articles for program Newsletter
- Possible selection to Newsletter and Yearbook committee
- Outreaches (skill and growth dependent)
- Community service events
- Assist with Aquatic Science Club
- Assist Deep Sleep Program (skill and growth dependent)
- Assist with Birthday Parties (skill and growth dependent)
- Research, Develop and Teach curriculum for CAUSE Summer Camp
- Attend Mid-Atlantic Youth ALIVE! Youth Summit (must apply)

### YEAR 3
- Public Programs Training/Enrichment
- Level 3 animal training
- Develop/Run or assist weekly meetings, workshops or rap sessions
- Assist planning college visits and fairs
- Assist with planning program trips
- Possible selection for Editor of Newsletter and Yearbook Committee
- Outreaches (skill and growth dependent)
- Plan Community Service events
- Assist with Aquatic Science Club
- Assist Deep Sleep Program (skill and growth dependent)
- Assist with Birthday Parties (skill and growth dependent)
- Possible selection to interview and planning committee (skill and growth dependent)
- Research, Develop and Teach curriculum for CAUSE Summer Camp
- Attend Mid-Atlantic Youth ALIVE! Youth Summit (must apply)

### YEAR 4
- Public Programs Training/Enrichment
- Level 3 animal training
- Develop/Run or assist weekly meetings, workshops or rap sessions
- Plan college visits and fairs
- Plan program trips
- Possible selection for Editor of Newsletter and Yearbook Committee
- Outreaches (skill and growth dependent)
- Plan Community Service events
- Assist Deep Sleep Program (growth and skill dependent)
- Assist Birthday Parties (skill and growth dependent)
- Develop/Run Science Day
- Possible selection to interview and planning committee (skill and growth dependent)
- Research, Develop and Teach curriculum for CAUSE Summer Camp
- Attend Mid-Atlantic Youth ALIVE! Youth Summit (must apply)
- Year 4 excursions, overnights or trips
The career ladder is the senior counselor position. After their final program year and high school graduation, teens have the option to apply for the position of senior counselor. Senior counselors are typically enrolled in college and return to Camden during their school breaks. This is a supervisory role with in the program but is not a full-time, regular position.

Academy staff working with the program includes the Youth and Community Programs Manager, the Youth and Community Programs Coordinator, and the Youth and Community Programs Mentors. All of these are full-time, regular positions within the Academy organization. The programs manager supervises the program staff and teens and is responsible for the program budget, staffing, curriculum, and training of the program staff and teens. The programs coordinator organizes staff meetings and manages the teens on a daily basis. Mentors typically participate in outreach activities and support the program as a whole. Mentors are one step below the programs coordinator and directly above senior counselors within the staff hierarchy. The number of mentors can vary, with one or two mentors typically employed.

The career ladder idea is continued through hiring mentors who have been senior counselors although it is not a requirement for the position of mentor. The career ladder approach relies on growing staff internally.

You look at the assets and the attributes of someone, or a group of people, and use those attributes to improve what you have, and then also to look again, because there’s a lot of potential and professional growth that an internal candidate could have. So what we found over time is that as students were going from a junior staffer, now called a CAUSE staffer, into a senior counseling role once they hit college. (Angie Wenger, interview)

A few of these staff members continue on with the program as mentors. The current mentor and coordinator both have moved up the career ladder from teen participant to senior counselor and beyond. Growing program staff internally benefits the individual and the program. The individual increasingly takes on more responsibility, leadership, and gains knowledge. The program gains a “continuity of perspective” and staff members who are familiar with the unique aspects of the program.

Program Values and Philosophy

The Academy staff views the program as providing the opportunity for youth in their community. To this end, the CAUSE program is designed to:

- Encourage personal growth, self-esteem, and self-confidence;
- Foster the development of life skills, including resiliency and social skills;
- Support and value diversity; and
- Provide opportunities for leadership.

The program provides a place to discover new opportunities, build skills, and become a productive person in a supportive environment. When asked to describe the program, the staff emphasized these youth development aspects:
The purpose of the program is to provide access to students who possibly wouldn’t have opportunities to grow personally or professionally. It’s a different kind of format than a regular job is. It’s an experience where you can learn and earn a little bit of money. It’s not good money, but it’s something…it’s about pathways that you didn’t know were there that have the opportunities you were looking for. (Angie Wenger, interview)

We want to see young people develop into productive adults. We pretty much want to give them some science literacy and just literacy as well. We want them to have life skills training so when they move onto college they’re prepared as far as communication skills that they can talk to people, approach people, be comfortable in the classroom, be social. We’d like them to walk away with workplace competency skills. Resumes, portfolios, all of that is basically – We want them to walk away with that. We also want them to walk away with the feeling that they’ve been supported, that they know that there’s people rooting them on as cheerleaders for them, that type of thing. We really want them to get a sense that when they come through here, “This is a support system to help me move on and be productive; be a productive adult, be successful.” (Cheronda Frazier, interview)

In their rhetoric, the staff places little emphasis on the “job” aspect of the program. Instead, the program is much more about the personal benefits of the program, the way it can help to support a teen in their current and future life.

The staff members talked about the value of the “whole child.” Staff members think of the whole child both in terms of what the program should provide and what they feel the outcomes of the program should be. In light of this philosophy, preparing teens for science careers or even teaching science content is not their primary goal. Rather the goal is to prepare the teens to be capable and well-adjusted adults. This philosophy originated very early in the implementation of the program. In the first year, the staff quickly realized that their group of four teens was dealing with issues in their lives that impacted the program. Julie Johnson, a former Academy staff member who helped develop the program, said that it was clear that “if there are things out there” that the teens are dealing with “they are not going to be with you” fully. For them to get the full benefit of being in the program, the complexity of their lives needed to be understood and embraced. From that breakthrough, the staff worked to unpack what teens need to be successful: to implement their biology training, they would need to learn job skills. Before they learned job skills, they would have to learn about work ethic and job expectations.

The staff had definite ideas as to what successful programs provide for teens. Staff members see a connection between the numbers of teens served, the time they spend in a program, and the impact of a program:

I don’t know if there’s a formula, but there is definitely the more time you spend with them, the better off they are, so twice a month on a Saturday is not gonna do i...consistency in contact, or having some people there who kids can relate to, and
go to when they need to, and for – keep your ratios low so that you can attend to their needs. (Angie Wenger, interview)

Consistency also is a piece of the pie. A lot of programs are drop-in programs, or they come in once or twice a month. You can’t mentor and support a young person if they only see you once or twice a month. That’s not gonna happen, which is why we see them three and four [times a week] – and during the summer, we see them every day except for the weekend. Then, sometimes we might see them during the weekend. We see them every day. You can address the whole child then… (Cheronda Frazier, interview)

A drop-in or occasional program does not fit the staff members’ idea of a quality youth development program. Rather intense, prolonged connections with teens are important to build connections with staff. This provides some insight into why the program requires teens to work at least 15 to 20 hours week during the school year and why the program maintains a relatively small number of participants. “Why sacrifice quality for quantity?” asked Damon Gibbs, the Youth and Community Programs Coordinator. Staff members feel that keeping in close contact with a small number of teens has a greater impact than serving large numbers in a less intense way.

These views are reflected in the logic model developed by Academy staff for the CAUSE program. The logic model is shown in Figure 2. A logic model “is a beneficial evaluation tool that facilitates effective program planning, implementation, and evaluation” (W.K. Kellogg Foundation, 2004). It serves as a guide for program staff and evaluators as they think about the program activities and how they relate to the outcomes. Developing and using a logic model creates a sense of “shared knowledge about what works and why” among staff and program stakeholders (W.K. Kellogg Foundation, 2004). The logic model specifies the ratio of staff to youth and the activities that teens are involved in both as participants and as facilitators. The staff has also worked to articulate the outcomes for participants, both long-term and short-term.

The staff member’s approach to supervising subordinates, teens included, is hands-on, trial-and-error training. In this on-the-job system, a task is assigned to a staff member or teen who is given very general directions and outcomes for the task. The staff member is then expected to try to complete the task to the best of their ability, drawing from previous examples supplied by their supervisor. After taking the first stab at the task, the staff member returns to their supervisor for feedback. Constructive criticism is used to provide feedback and suggestions for improvement, at which point the staff member is responsible for revising the assignment as needed.

Another key to the program management is the idea of training and supporting a staff member to move up in the organization. Summarized by Johnson, “my job is to make it possible for you to take over my job.” This approach to management has been handed down through the “generations” of program coordinators. Each staff member interviewed referenced this perspective in describing training or staff management. In terms of program sustainability it is very important to ensure that a program does not live only in the heart and mind of one individual. The staff members’ approach to training and management ensures that this is not the
**Figure 2: CAUSE Logic Model**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Strategies</th>
<th>Outputs</th>
<th>Short-term Outcomes</th>
<th>Long-term Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong core mission tied to the organizational mission</td>
<td>Provide annual field excursion, college visits, and guest lectures by experts</td>
<td>30-40 teens participate in field trips for science content.</td>
<td>Increase comfort and interest in science &amp; learning</td>
<td>More students choose science or education as a career or course of study</td>
</tr>
<tr>
<td>Well-trained program staff</td>
<td>Provide annual Youth Summit Leadership Institute</td>
<td>All teens attend workshops in leadership, teambuilding, workforce preparedness, teaching, and learning</td>
<td>Increase knowledge in aquatic and ecology science content.</td>
<td>Students successfully graduate from High School</td>
</tr>
<tr>
<td>Partnership with public schools and charter schools in Camden City</td>
<td>Provide 16 weeks of science content and instructional strategies training</td>
<td>All teens spend time on job exchanges, curriculum writing, internships, content training</td>
<td>Increase career awareness in the sciences and in education.</td>
<td>Students choose a trade, 2-yr. or 4-yr. school of higher learning</td>
</tr>
<tr>
<td>Appropriate resources (space, technology, transportation) from the Academy</td>
<td>Provide paid, meaningful work in the Aquarium and through outreach programming</td>
<td>Veteran teens develop service learning projects, mentoring younger students in after school and summer programs</td>
<td>Increase awareness and preparedness of college test exams &amp; college entrance processes.</td>
<td>Parents are more supportive of their children in the pursuit of higher learning</td>
</tr>
<tr>
<td>Partnership with academic and informal education institutions</td>
<td>Provide access to internet, SAT software, and tutoring</td>
<td>All teens work an average of 720 hours per program year at 7.15/hr or better.</td>
<td>Increase leadership potential.</td>
<td>Teens give back to their community, become leaders among their peers and later, as college students, with the new CAUSE Staff</td>
</tr>
<tr>
<td>Appropriate resources (access to audience, animal collection, etc.) from the Aquarium</td>
<td>Opportunity for youth and families to experience science together during family science events and summer field trips</td>
<td>Family Science/Math and Summer Camp field trips are attended by Teens’ families and Campers’ families (2-3/year).</td>
<td>Increase parental/family involvement</td>
<td>Teens experience a sense of family and support from their experience with the Academy and confidence with their goals</td>
</tr>
<tr>
<td>Partnership with and support from parents/families of youth</td>
<td>Leadership opportunity for teens to research and plan K-8 summer camps and after-school clubs</td>
<td>First year teens spend 16 weeks in science content training (average 32 hours) for teaching in the Aquarium and through outreach.</td>
<td>Decrease truancy in cases where it is an issue.</td>
<td></td>
</tr>
<tr>
<td>Funding to cover cost of youth wages</td>
<td>Leadership opportunity for teens to develop and run service learning projects in their city</td>
<td>Teens develop and implement summer camp for up to 350 k-8 students.</td>
<td>Increase Community involvement.</td>
<td></td>
</tr>
<tr>
<td>Funding to cover cost of program staff wages to keep staff to youth ratio low (1:13)</td>
<td>Field trips to local science centers, natural history sites, and other cultural institutions</td>
<td>Teens assist in the development and implementation of after school clubs for k-8 during the academic year.</td>
<td>Increase confidence and self-esteem.</td>
<td></td>
</tr>
<tr>
<td>Funding to cover program materials and supplies for youth components</td>
<td>5 week Summer Camp for K-8 students</td>
<td>Selected teens attend the Youth Summit to further their leadership skills and network with Regional youth.</td>
<td>Increase college test preparation &amp; college entrance awareness.</td>
<td></td>
</tr>
<tr>
<td>Funding to cover program trips for J-staff and summer camp</td>
<td>After-school science clubs fro K-8 students</td>
<td>Staff attend regional network meetings to share best practices and present to other youth workers.</td>
<td>Increase awareness of inquiry teaching skills in students and staff.</td>
<td></td>
</tr>
<tr>
<td>Funding to cover J-staff internship fees</td>
<td>Weekly Rap sessions for teen peer-mentoring</td>
<td>Past participants return to interact with teens to provide information sessions on college life, career options, etc… 1-2 times per year.</td>
<td>Increase awareness of field techniques.</td>
<td></td>
</tr>
<tr>
<td>Support and volunteerism from past participants</td>
<td>Diversity Fellowship program participation with ASTC for program staff development and MAYA! Regional Network meetings</td>
<td>Highlight the role-model aspect of CAUSE Staff with younger students.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2: CAUSE Logic Model**

- **Inputs**: Strong core mission tied to the organizational mission, Well-trained program staff, Partnership with public schools and charter schools in Camden City, Appropriate resources (space, technology, transportation) from the Academy, Partnership with academic and informal education institutions, Appropriate resources (access to audience, animal collection, etc.) from the Aquarium, Partnership with and support from parents/families of youth, Funding to cover cost of youth wages, Funding to cover cost of program staff wages to keep staff to youth ratio low (1:13), Funding to cover program materials and supplies for youth components, Funding to cover program trips for J-staff and summer camp, Funding to cover J-staff internship fees, Support and volunteerism from past participants.

- **Strategies**: Provide annual field excursion, college visits, and guest lectures by experts, Provide annual Youth Summit Leadership Institute, Provide 16 weeks of science content and instructional strategies training, Provide paid, meaningful work in the Aquarium and through outreach programming, Provide access to internet, SAT software, and tutoring, Opportunity for youth and families to experience science together during family science events and summer field trips, Leadership opportunity for teens to research and plan K-8 summer camps and after-school clubs, Leadership opportunity for teens to develop and run service learning projects in their city, Field trips to local science centers, natural history sites, and other cultural institutions, 5 week Summer Camp for K-8 students, After-school science clubs fro K-8 students, Weekly Rap sessions for teen peer-mentoring, Diversity Fellowship program participation with ASTC for program staff development and MAYA! Regional Network meetings.

- **Outputs**: 30-40 teens participate in field trips for science content, All teens attend workshops in leadership, teambuilding, workforce preparedness, teaching, and learning, All teens spend time on job exchanges, curriculum writing, internships, content training, Veteran teens develop service learning projects, mentoring younger students in after school and summer programs, All teens work an average of 720 hours per program year at 7.15/hr or better, Family Science/Math and Summer Camp field trips are attended by Teens’ families and Campers’ families (2-3/year), First year teens spend 16 weeks in science content training (average 32 hours) for teaching in the Aquarium and through outreach, Teens develop and implement summer camp for up to 350 k-8 students, Teens assist in the development and implementation of after school clubs for k-8 during the academic year, Selected teens attend the Youth Summit to further their leadership skills and network with Regional youth, Staff attend regional network meetings to share best practices and present to other youth workers, Past participants return to interact with teens to provide information sessions on college life, career options, etc… 1-2 times per year.

- **Short-term Outcomes**: Increase comfort and interest in science & learning, Increase knowledge in aquatic and ecology science content, Increase career awareness in the sciences and in education, Increase awareness and preparedness of college test exams & college entrance processes, Increase leadership potential, Increase parental/family involvement, Decrease truancy in cases where it is an issue, Increase Community involvement, Improve communication skills, Increase confidence and self-esteem, Increase college test preparation & college entrance awareness, Increase awareness of inquiry teaching skills in students and staff.

- **Long-term Outcomes**: More students choose science or education as a career or course of study, Students successfully graduate from High School, Students choose a trade, 2-yr. or 4-yr. school of higher learning, Parents are more supportive of their children in the pursuit of higher learning, Teens give back to their community, become leaders among their peers and later, as college students, with the new CAUSE Staff, Teens experience a sense of family and support from their experience with the Academy and confidence with their goals.
case; every staff member is actively engaged in learning the job of their superior, creating institutional knowledge of the program and sharing of expertise.

**CAUSE: A Youth Development Program**

The CAUSE program is not specifically based on any one guiding framework. This is one reason the Academy staff were interested in undertaking a summative evaluation focused on describing the program’s model. A thorough understanding of the program and the model on which it is based will be helpful for the staff as they consider next steps for the program. As the staff makes decisions on whether to expand the program to younger teens or to replicate the program elsewhere, the ability to firmly ground their decisions on evidence from the program will increase the likelihood of success.

Although the CAUSE program may not have been created with a specific framework in mind, it clearly reflects a general Positive Youth Development (PYD) approach. The PYD field has evolved out of a desire to approach children and youth as individuals with positive assets to be developed. Prevention-based programs originally focused on changing negative behaviors or outcomes, such as drug abuse or teen pregnancy (Catalano et al, 2002). By the 1990’s, a new approach developed that focused more broadly on the suite of issues that face youth as they transition to adulthood, with the view that a successful transition meant more than avoiding risky behaviors (Catalano et al, 2002). This asset-based approach focuses on the child as a whole person within a network of influences. Catalano and his colleagues reviewed the PYD literature and identified fifteen programmatic objectives that define a program as promoting PYD (2002):

- Promotes bonding
- Foster resilience
- Promotes social competence
- Promotes emotional competence
- Promotes cognitive competence
- Promotes moral competence
- Fosters self-determination
- Fosters spirituality
- Fosters self-efficacy
- Fosters clear and positive identity
- Fosters belief in the future
- Provides recognition for positive behavior
- Provides opportunities for pro-social involvement
- Fosters pro-social norms

Another set of impacts also derived from the literature has been forwarded more recently by Learner et al (2005). These “six Cs” of PYD are:

- Competence
- Confidence
- Connection
- Character
- Caring and compassion
• Contribution

These aspects are quite broad, and therefore, each “C” encompasses more than one of the fifteen qualities as outlined by Catalano et al.

Although the Academy team did not specifically mention PYD in their interviews, their values and philosophy align very well with the PYD literature. The goals of the program (to encourage personal growth, self-esteem, and self-confidence; to foster the development of life skills, including resiliency and social skills; to support and value diversity; and to provide opportunities for leadership) closely reflect both the programmatic objectives identified by Catalano et al (2002) and the six Cs (Leaner et al, 2005). The staff members’ use of terms such as “asset-based” and “whole person” also served as an indication that they already think in terms of PYD.

Furthermore, the Phase I study demonstrated that the program does indeed impact youth in the areas of science and teaching, community leadership, academics, career choice and workplace preparedness, and life choices (Foutz 2007). These areas of impact could be re-grouped to more closely reflect the impacts as identified by Catalano et al (2002) or Learner et al (2005). For example, the C of Competence in Lerner’s model subsumes Catalano’s “cognitive competence” an impact related to both academic and intellectual achievement. The CAUSE corollaries to these concepts are the 100% rate of graduation from high school, high percentage of participants who had continued on to post-secondary education (97% of respondents), and willingness to pursue science as a career (Foutz 2007).

The remainder of this report, then, pushes the staff to intentionally compare themselves to PYD literature and frameworks. This approach measures the program against the PYD field’s definition of success.

Do youth and Academy staff think about youth development similarly?

Before comparing the CAUSE program to a PYD framework, it is important to know whether the teens involved in the program view youth development in ways similar to the Academy staff. A close match between the views of adults and youth would allow program staff to confidently move in the direction of PYD without fear of implementing a framework that is untenable to youth. Implementing a PYD framework without determining youth by-in to the underlying ideas of PYD could create a situation where youth reject the program’s direction and quit the program.

In order to determine if the Academy staff and youth in the program think about youth development in the same ways, a PYD study by King et al (2005) was replicated as part of data collection. King et al, in the tradition of other researchers, used the term “thriving” to capture the manifestation of PYD in an individual. This positive term is used descriptively in the literature to encapsulate a host of PYD indicators. In other words, a youth who exhibits signs of PYD can be said to be thriving. The King et al study focused on how program practitioners, participants, parents, and research describe thriving. In the study, program staff, the youth in these programs, and their parents were asked a series of questions on thriving:

a) How can you tell if a young person is thriving or doing really well?
b) What skills, competencies, and/or qualities indicate that a young person will probably thrive in the future, as an adult?

c) Are there any things about thriving that apply to all young people, no matter who they are? If so, what?

d) Are there any questions that I have left out? What else would you like to add on the subject?

The degree to which these groups agreed with each other was then determined. The groups’ responses were then compared to the literature to see the degree to which they agreed with experts definitions of thriving. (King et al, 2005)

For Phase II, this study was replicated, although on a much smaller scale, with Academy staff connected to CAUSE and program participants.² Both groups were asked questions (a), (b), and (c) as used by King et al (2005). The last question (d, above) was substituted with another question tied to the CAUSE program. Youth were asked, “Does CAUSE help you to thrive? If yes, how does it?” Staff members were asked “Do you feel CAUSE helps youth to thrive? If yes, how does it?” See Appendix A for the staff interview and teen writing prompt protocols.

The Academy staff members were more likely than the teens were to believe that there are universal qualities that indicate a person is thriving. All of the staff members interviewed indicated that there are qualities that could be applied to anyone who is thriving. Four of the six teen indicated likewise in their written responses. Two teens, however, thought that there was no set of qualities that could be applied to all people. “Everyone has their own perspective,” wrote one teen, while the other noted that “everyone is different and thrive in their own way.”

All teens and staff members were able to list qualities that they felt related to a youth who is thriving. In all, twenty-two categories were created from the qualities listed by the staff and teens combined. In order of most to least mentioned these included:

- Communication skills (mentioned by 6 out of 10 individuals)
- Social skills (5)
- Positive attitude (4)
- Self-respect (4)
- Work ethic (3)
- Feeling competent (3)
- Perseverance (3)
- Getting an education (2)
- Having supportive relationships (2)
- Self-sufficiency (2)
- Respecting others (2)
- Taking Responsibility (2)
- Dealing positively with emotions (2)
- Resiliency (1)
- Setting and reaching goals (1)
- Dealing positively with change (1)

² King et al sampled 173 individuals; this portion of the Phase II study sampled 10 individuals.
• Critical thinking (1)
• Empathy (1)
• School performance (1)
• Money management (1)
• Teamwork (1)
• Appearance (1)

The teens and staff members used many of the same qualities when describing thriving. However, the most mentioned qualities differed between teens and staff members. The quality mentioned by the most teens was perseverance, whereas, the quality most mentioned by staff members was communication skills. These findings replicate King et al which found a wide range of thriving descriptors were used by adults and teens, with the most widely used terms differing between adults and teens (2005). Similarly, the qualities named by participants in this study, like those in King et al, are very much in line with those indicators used by the PYD fielded as a whole. This is an indication that a PYD framework may resonate with practitioners and youth alike.

Even more encouraging, all six youth and all four staff members responded that CAUSE helps youth to thrive. When asked how CAUSE supported thriving, youth tended to focus on encouragement, guidance, and skills. One teen, for example, responded that CAUSE “encourages me to do well,” while another said, “They teach me people skills that helps me prepare for the future.” The staff members echoed the teen responses. The staff said the program supports thriving by providing adult support in a safe environment while helping teens develop a sense of achievement and success. These commonalities in the responses of teens and adults to these questions on thriving indicate that both groups view CAUSE as supporting PYD. If this is the case, a PYD framework should be well-received by the program staff and youth as capturing the essence of the CAUSE model.

To what degree does the program model compare to a framework from the youth development literature?

One way to demonstrate the effectiveness of CAUSE program model is to compare it with a PYD framework. To this end, the framework outlined in Milbrey McLaughlin’s Community Counts (2000) was selected by the researcher as a basis for comparison. McLaughlin’s framework was selected for a number of reasons:

• It identifies aspects that make for successful programs. Here a successful program is defined as one that significantly impacts youth in a positive way, creating an environment to which youth want to belong. Youth choose to be involved in successful programs because the program offers something compelling to them. The value of comparing the CAUSE model to McLaughlin’s framework, therefore, is the act of measuring CAUSE against other successful programs. If CAUSE “measures up” to these programs, it too can be called a success.
• It focuses on *programmatic structures* rather than programmatic impacts. The field of PYD includes multiple frameworks focusing on impacts, \(^3\) but few with a focus on structure. It was important to choose a structural framework as a basis for comparison because this Phase II of the summative evaluation focused on model-testing, while the impact study was Phase I (Foutz, 2007).

• It uses *youth perspectives* to defining program success. In studying community-based organizations and their youth programs, McLaughlin’s research focused on what youth felt were valuable qualities in these programs. Defining success from a youth perspective helps to ensure that the program that is created is engaging for youth rather than creating something that is convenient or interesting to adults. Like making sure the youth have the same view of PYD as the program staff, the CAUSE program needs to retain the buy-in of its youth participants as it moves forward. Using a youth-based perspective, as advocated by McLaughlin, will help to maintain this buy-in.

• McLaughlin’s bases her framework on *research* done over a ten year period with “approximately 120 youth-based organizations in 34 different cities” (2000). This means her model has an empirical basis; it is influenced by what is happening in these programs, not what should or could be happening. This is helpful for the CAUSE program because a real-world, practical framework may foster staff buy-in and implementation. If the Academy staff can see their program model reflected in the framework, they are more likely to implement it successfully.

Specifically, McLaughlin’s framework has within it a series of PYD-oriented perspectives. These perspectives include:

• **Intentionality**: Successful programs are intentional ones, proceeding towards a goal consciously. Successful programs know that success doesn’t just happen, but is intentionally planned for. The program staff knows where they are going, why that is the goal, and what they need to do to get there. Communication with youth is also approached in an intentional, not haphazard, manner. A high level of clarity and focus in communication is appealing to youth, keeping them engaged. The staff members clearly articulate their intentions and objectives to youth.

• **Programming with youth**: Youth, not adults, lead a successful program. The ideas and interests of youth are not only valued they are the essential roadmap for the program’s activities. This is the difference between planning for youth (adult-led) and planning with youth (youth-led). Youth are involved at all levels of the program, with adults serving a mentoring role, guiding youth as they do the work of the program.

• **Community connection**: A successful program is closely tied to its community. It draws on the assets of the community, allowing the community to be its strength. A successful program has articulated its value to the community. The community not only knows about the program but supports it.

These perspectives are implicit within *Community Counts* (McLaughlin, 2000). Therefore, the descriptions above reflect a combination of McLaughlin and the researcher’s approaches to both PYD and program evaluation. Explicit within the framework are four structural aspects that successful programs have in common. The PYD perspectives overlay and inform these aspects.

\(^3\) Frameworks based on impact include Catalano et al (2002) and Learner et al (2005).
The four aspects of successful youth development programs are: 1) youth-centered; 2) knowledge-centered; 3) assessment-centered, and 4) community-centered. These aspects are detailed below. (McLaughlin, 2000)

With the selection of the McLaughlin framework as a basis for comparison, the data collected over the course of the case study research was analyzed. The McLaughlin framework served as a post-hoc analytical tool in the course of data analysis; that is, data collected analyzed to see how well it fit with the selected framework.

The four structural aspects found in successful youth development programs (youth, knowledge, assessment, and community-centeredness) are used in the remainder of this section to organize the research findings. For each aspect, 1) McLaughlin’s definition is detailed, 2) areas of strong match between the program and framework are highlighted, 3) areas of weaker match between the program and the framework highlighted, and 4) the program model is challenged, encouraging a closer alignment between the framework and the program. Throughout these four sections, the PYD perspectives are drawn on to inform the analysis.

**Youth-Centered**

McLaughlin describes youth-centered programs as those where the “adults hold the youth in their vision for the organization and the community.” Youth-centered programs take into account the lives of youth as a whole, not just what is going on inside the program. These types of programs (McLaughlin, 2000):

- “Respond to the diverse talents, skills, and interests” of the youth,
- “Build on strengths” of youth, an asset-based approach,
- “Choose appropriate materials” tailored to the youth,
- “Provide personal attention” to youth,
- “Reach out” into the community to draw in new youths, and
- “Feature youth leadership and voice” in regular program activities.

The CAUSE program is highly youth-centered. The Academy staff members believe in the value and potential of the teens they work with. They are constantly assessing the needs of the teens they work with: who needs what, what problems or successes are they having? Being youth-centered means listening to the youth who are at the heart of the program, being keyed into their lives. It means identifying problems that arise both inside and outside the program and providing potential solutions. The teens recognize and appreciate the efforts of the Academy staff makes to reach them, as seen in the following quotation:

> I like the way that people make an effort to try to reach out to you even if you don’t want to be reached out [to] and as much as we try to avoid them, it’s like they’re gonna talk to you no matter what so you finally bring yourself out. (Teen, focus group)

This teen recognized that youth run from their problems and sometimes avoid adult intervention. At CAUSE, she knows that she can only “avoid” getting help for so long before an adult steps in to offer guidance and support. The ability for the adult staff to pay close attention to each youth is intentionally built into the program. The program consistently maintains a low staff to student
ratio, commonly as 1 staff for every 12 youth. This ratio means there is more time to spend with youth because the staff is not spread too thin. It also allows for youth to build connections with the staff member they are most drawn to as opposed to only having one supervisor to look to for guidance or advice.

From the teens’ point of view, the personal connections they build with staff are a natural part of the program. One example is the open-door policy advocated by the staff. In the focus groups, the youth talked about how the open-door policy works. “I can just come into the office and without even saying a word, [Cheronda] is like, ‘Just sit down,’...she can see it on my face,” said one teen explaining her experience. For the staff, the use of the open-door policy is an indication that they have successfully built a connection with the youth.

These types of connections create a system for mentoring youth. To get an idea of how the youth think about mentoring, one focus group and writing prompt were centered on this topic. In talking about mentoring the teens in the focus group felt that mentoring is a way of providing guidance and a role model, “someone who’ll be there when you actually need them.”

I need guidance from my mentors in order to succeed. (Teen, writing prompt)

All I need from my mentors is guidance, guidance in the right direction but to guide me as an adult and not as a child as well as to keep guiding me until I’m sure I can go on by myself. (Teen, writing prompt)

I need their continuous support and encouragement. (Teen, writing prompt)

What I want from my mentors is to be there when I need them, understanding, hear the whole story first before you draw a conclusion. (Teen, writing prompt)

The focus group teens talked about the non-CAUSE mentors in their lives and compared them to the mentors the have in the CAUSE staff of adults. As a group, the teens identified mentors in their own family, at school, at church, at work (CAUSE and elsewhere), and within their peer groups. As a whole the qualities found in these mentors included patience, confidentiality, trust, knowledge, maturity, and a willingness to spend time with others.

While teens consider the adult staff of the CAUSE programs as among their mentors. However, the teens also recognize the boundaries that come with having your supervisor as a mentor.

I think of it as they’re mentors but they’re a little bit more serious mentors...They’ll help you... but at the end of the day, it’s their duty to do something about it if they hear something. (Teen, focus group)

They have to play two roles of being both my boss and my mentor, so of course, you’re not gonna complain with them...cause there is a point when they have to step up and be your boss and they can’t always listen. (Teen, focus group)
Although they recognize the limits of a mentor who is also a supervisor, at least two teens felt that there were cases where they would be more likely to talk to an Academy staff member than one of their other mentors. For serious issues like addiction, teens felt that going to a mentor in the CAUSE program would be a lot easier than going to someone else. “You have this issue and you want somebody to go to that will talk to you about it and will do something to help you.” They see the CAUSE staff not only as listeners but as able to take steps to rectify the problem. While this type of guidance is welcomed by the teens, they sometimes wish the staff would just listen, instead of always trying to solve every problem that comes up. This is part of the natural tension between youth and adults, and is not something the Academy staff has to work at. Rather they should be aware that sometimes a listener is all that is needed.

Another area of youth-centeredness is in the choice of programming in CAUSE. The staff thinks about the whole experience of growing up in an urban setting. Since some of the Academy staff members working with the program are from the same urban-setting as the current teen participants, they can identify with the range of services a youth might need. These services include emotional, financial, academic, relationship, communication. This contributes to the idea of developing a whole person, the philosophy advocated by the staff.

The program has built into increasing levels of leadership opportunities for youth. Naturally, as youth grow they want to be given more responsibility and autonomy. The youth in CAUSE are no different. In order to address the growing experience of youth, the NJAAS staff has developed a career ladder to define the roles and responsibilities of youth. (Figure 1). The career ladder is a progression of available activities and the youth’s role in the activity for each program year. It also illustrates how teens move into leadership roles within the group. For example, year 1 and 2 youth attend weekly meetings, while year 3 and 4 youth have the opportunity to develop and run these same meetings. Similarly, all youth may write articles for the newsletter, youth in their second, third, and fourth years may be on the newsletter committee, but only year 3 and 4 youth may serve as the newsletter’s editor. This system allows staff to provide a progression of experiences that build off one another. Teens in their fourth year, therefore, have the greatest range of opportunities based on their length of time spent in the program.

The staff already has recognized the need to revisit the career ladder to maintain youth buy-in. Academy staff held an informal focus group with fourth year students. One suggestion from youth was the addition of a trip for fourth year participants only. Youth would be able to choose their destination (within reason) and get to have a fun, small-group outing with the program manager. Possible trip options suggested by youth included seeing a Broadway show in New York City or visiting Medieval Times for dinner and a show. The willingness to make such an addition to the career ladder demonstrates staff recognition of the need to reward and recognize the youth as they continue to participate in CAUSE.

The teens, however, felt more could be done to differentiate between youth at different levels. Those in the focus group said there are times when the third and fourth year participants are clumped in with the first and second year participants. Some of these activities felt unproductive to the focus group teens because they had participated in the activities previously. An example is the workshops led by outside experts. All youth attend these workshops. Teens in the focus group who were high school seniors, for example, heard a similar introductory college-prep talk...
multiple years in a row. This could be addressed with a revision to the career ladder. Options include developing a different set of activities for the third and fourth year teens to do at the same time as the first and second year teens’ attend these workshops or invite them to lead a workshop on the same topic. This would serve as a continuation of what third and fourth year youth already do by leading Rap sessions and holding other leadership positions within CAUSE. In staff meetings, third and fourth year teens could pair off with first and second participants for brainstorming or group work, especially in areas where these older youth have experience. For example, paired role playing exercises on communication and facilitation techniques could replace or augment some of the whole group activities in the staff meetings.

There was even more tension between how the staff actually apply the career ladder and how youth feel it is applied. One illustration of this tension was the incoming participant interviews held in 2006-2007. The career ladder states that third and fourth year youth assist in interviewing incoming youth. This is a great example of added responsibility that comes with experience. It is an opportunity to create greater buy-in for the teens in the program and has them participate in a common workplace activity. The skill of interviewing someone for a job position is also a wonderful workplace skill. The focus group youth, however, felt they were not included in this process during the 2006-2007 program year. The teens said the fourth year students were told they would be trained to participate in interviewing the incoming participants. However, when the time came for the training, not all fourth year youth were included. Some were invited to attend training while others were not. A few youth thought they had been excluded from the process. It seemed to them that the training happened in a haphazard way.

When consulting with the Academy staff about this incident, however, another point of view arose. Staff wanted to invite all fourth year staff to the training, but first decided to check the youths’ availability for the dates of the interviews. As it happened, many fourth year students replied that they were not available on the interview days. Staff, therefore, did not invite the unavailable youth to the training; if they could not participate in the interviews, why be trained on it? In the end, youth who were not trained and did not interview incoming participants became frustrated with the process. Likewise, the staff became frustrated with the youth’s complaints.

Academy staff, in consultation with the researcher, suggested that next year, they will re-examine the interview and training process. One option they suggested is to consult the youth on their availability well in advance of scheduling the interviews. This way youth would be included from the beginning of the process. Another option is to include all third and fourth year youth in the training regardless of their availability for the interviews. The training then becomes not a means to an end, but a skill the youth regardless.

The tension over the interview and training process is a prime example of two groups not fully communicating with each other. It’s the nature of human interaction that misunderstandings rooted in communication differences will occur. Academy staff has the responsibility for maintaining clear lines of communication. This means consistently and clearly communicating program activities and expectations to youth and having an open system for announcing upcoming activities and who is involved. A clear set of roles and responsibilities for each activity lets every teen know what is expected of him or her.
Youth involvement and leadership throughout the program is also an area where improvements could be made. One critical piece of the program is community outreach, as explained by the staff:

*It just makes them more connected to the community and feel that they’re supporting their community and there’s more that they can do outside of these walls…They’re also the expert and they’re helping. They feel like they’re able to give support as opposed to them always getting support...* (Cheronda Frazier, Interview)

Outreach opportunities benefit the teens by allowing them to take an active role in the community. Their participation reverses roles; teens become experts and caretakers. The Academy staff is continually looking for outreach opportunities for the youth. Frazier mentioned that she has told teens if they want to do a particular type of outreach, all they have to do is organize it. This approach, however, leaves the choice up to the teens who in the end do not take the initiative for planning. An alternative is to *require* the teens to plan an outreach event to its completion. The teens in CAUSE could benefit from being given greater responsibility for the program and being held accountable for the completion of these tasks. This is a good example of programming *with* youth. Instead of the staff arranging and facilitating an outreach experience for the youth, youth could be given responsibility for the outreach activities. The teens could work in pairs or alone to plan the event, including choosing the type of event, making phone calls to the organization to arrange the event, and working with the Academy staff to find a convenient time.

The larger challenge to the program is to continually identify ways to be more youth-centered. The program staff may be able to identify ways to more closely align with McLaughlin’s idea of youth-centeredness. Program components that are not fully youth-centered may be identified and revised. As shown in the examples above, clear communication and including more programming *with* youth may help the program become more youth-centered. More than these strategies, though, youth-centeredness demands a program that puts youth the heart of the program. Youth take the lead in shaping the program. For this to happen, staff may have to change their way of viewing their own jobs. In a youth-centered program, the youth are the facilitators of the program, and staff members serve in supporting roles. Making these types of changes may be hard for staff and youth. The benefit is of making these changes is the added youth buy-in that comes when a program is truly youth-centered.

**Knowledge-Centered**

McLaughlin describes knowledge-centered programs as those that “point to learning as a reason why youth should get involved, and they take steps to provide the relevant knowledge.” Ongoing knowledge gain is built in the structure of the program and is not limited to one portion of the program. Knowledge-centered youth programs provide (McLaughlin, 2000):

- “Clear focus” to the program by having a central topic,
- “Quality content and instruction” that motivates and values youth,
- “Embedded curriculum” so each activity teaches multiple skills and encompasses a range of learning, and
• “Multiple teachers” including staff members, community members, and youth.

The CAUSE program excels on being knowledge-centered. Learning is a process that happens out in the open, with the social group. The staff encourages learning and knowledge-gain in all types of activities from staff meetings to field trips.

One of its hallmarks of the program is the high quality marine biology curriculum instruction that serves as every participant’s introduction to the program. This 15 week-long course, described as college level in the brochures of the program, helps provide a basis of common knowledge among all participants. This content is what the teens draw on when they are teaching others or working with the public. It is akin to adding another class period on to the day of every incoming participant. Frazier feels that the biology training can be very hard for the teens because “the school system breezes [children] through” without really challenging them or preparing them for college-level work. The program alumni agreed. “When we walked in those doors and started that training it was like hitting a brick wall, because it was serious marine biology,” reflected one former participant. To help deal with this “shock to their system,” the training includes a section on study skills.

The biology curriculum has evolved over the years. Originally the initial training course for first year students was taught by Wenger. It is now lead by Frazier. The current curriculum is more vertebrate-focused as opposed to invertebrate-focused, reflecting the switch from Wenger’s interests and knowledge-base to Frazier’s. Both feel the curriculum has always been highly scientific. Neither woman shies away from using scientific terms and concepts without watering it down for the teens. One area where a change has occurred is in Frazier’s desire to appeal to multiple learning styles. Her goal in designing the sessions is to “hit all learning styles,” to have something for every type of learner. To this end, she incorporates lectures, hands-on activities, drawing, and video into the sessions, creating a multi-media feel. The teens also receive PowerPoint packets that contain the highlights of each session. She contrasts this with the previous curriculum which used little in the way of audio-visuals.

Although it may seem that having such a clear focus on a subject like marine biology, or even science generally, would be a potential sticking point for a program, this is not the case. McLaughlin writes about teens wanting to build their own identities by choosing programs and relationships that support their individual interests. With this way of thinking, a community needs to have many different types of youth programs to meet the needs of youth because one size does not fit all (McLaughlin, 2000). Youth, are in fact, more attracted to programs with a clear purpose. This is the case with the CAUSE program. Teens are attracted to CAUSE for a number of reasons as was supported by the data collected in the Phase I study. Two of the primary program attractors were “learning science information” and “learning about marine organisms,” each selected by 65% of current participants and alumni respondents (Foutz, 2007). The advertised program focus, therefore, appeals to the interests of a particular type of teen.

Interestingly, the Phase I study also pointed to other reasons for joining CAUSE, including the focus on teaching, working with youth, and community outreach. These activities are what the youth in CAUSE “do” after they have learned the science curriculum. These activities appeal to youth who are interested in science and those without this interest. To be qualified to get to
participate in these activities, teens complete and pass the initial marine biology training course. In this way, teens who may not be particularly interested in science learn science on the way to doing what they really came for: teaching, working with youth, and helping in their community. This is just fine with the program’s creators. Johnson doesn’t mind if they don’t make scientists, but hopes the teens learn to like science. Wenger echoes this opinion:

Yes, that [interesting teens in science careers] was our first push, and then afterwards we realized we don’t care if they are marine biologists, or pharmacy students, or politicians, we really don’t care. What we care about is that they’re comfortable with science, they see it as part of their lives, but they take what they get from here, whatever piece that they were missing, and they apply it to become successful in whatever they’re looking to do, whether it be college, or work, or life. (Angie Wenger, interview)

As teaching and working with the public is such a large part of the program, a significant portion of the program is devoted to gaining the knowledge surrounding teaching and what to teach. CAUSE participants are trained in classroom management and instruction techniques as summer camp approaches. They also produce the curriculum that will be taught at summer camp. This knowledge production is evidence that CAUSE is a knowledge-centered program. As the teens study something to become familiar enough with it to teach it to another, they go from learner to expert on the topic.

Other non-academic forms of knowledge are also incorporated into the program. These include learning about workplace rules and norms, college preparatory events and sessions, teen lifestyle issues through workshops and rap sessions. For example, during field trips, teens are exposed to the larger world. Not only do they meet science professionals and engage in science experimentation, but they also see what opportunities exist outside of their immediate neighborhoods.

Embedded curriculum and having multiple teachers are evident throughout the program. Every activity supports multiple learning opportunities on a variety of different levels. For example, the stated topic of any meeting or workshop is not the only thing being taught. A staff meeting on communication is also teaching teamwork and problem solving. In the same way, a diverse set of “teachers” from inside and outside the program interact with the participants. Teens mentor each other throughout the program, but most explicitly during curriculum writing and summer camp. Here older teens and senior counselors guide newer participants as they put together a curriculum for the first time. Staff from the Academy more broadly support and interact with the teens. A prime example of this is staff member Judie Weinstein, dubbed “Grandma,” an education specialist with the Academy. She accompanies the program on all their trips and serves as the official photographer of the program.

For the Academy staff, being knowledge-centered is also a part of their professional lives. They are provided with opportunities for growth through professional development opportunities from a range of sources. Opportunities to grow as an informal educator include attending conferences like the Association of Science-Technology Centers (ASTC) and giving presentations. Staff members begin by partnering with a more experienced staffer in creating a conference...
presentation. Later they present on their own and may mentor a newer staff member in the process. Gaining content knowledge is also strongly encouraged by program management. Staff may take classes in areas of interest or special need such as child development, classroom management, psychology, and grant writing. Knowledge-gain, therefore, is embedded throughout the program for staff and youth alike.

Currently, this is the area where the CAUSE model most closely aligns with McLaughlin’s framework as the staff is committed to providing high quality educational opportunities for youth. The challenge for the staff members going forward will be maintaining this high level while making other changes to the program model.

**Assessment-Centered**

In *Community Counts*, assessment-centered programs are described as those that provide “candid, supportive feedback on how a youth did and how she could do better next time” (McLaughlin, 2000). Assessment and evaluation are integrated into the program. Assessment-centered programs employ (McLaughlin, 2000):

- “Cycles of planning, practice, and performance” and
- “Feedback and recognition.”

Assessment-centered practice can be seen throughout the CAUSE program at both staff and participant levels. It is intentionally planned for at many points in the program, which ensures that it happens on a regular basis.

On-going assessment of the program is evidenced at the staff-level. The staff uses the logic model to guide their understanding of the program (Figure 2). The logic model serves as a roadmap. Using the outcomes identified by logic model, the staff is able to create a program that reaches these outcomes. The Academy staff has consistently and regularly sought out evaluation of their program by independent researchers or evaluators. The program underwent formative evaluation from 2002-2006, creating an iterative cycle of performance and appraisal by an outside expert. They are very interested in the outcomes of program evaluations and quick to integrate evaluation recommendations into their work. The staff also seeks feedback from participants on their own when they need it. For them, asking the youth for their opinions on the program is a regular activity. This openness to asking for and hearing feedback results in continual updates to activities and programming that matches youth interests.

The Academy staff also incorporates assessment into their interactions with each other. Staff members talked about feedback and the role it played in on-the-job training. Three of the four staff members who were interviewed mentioned the importance of being given a task, doing it to the best of your ability, getting feedback from a superior, and then trying again. This cycle of practice and feedback is also used with the youth in the program as they undertake new tasks.

At the participant-level, assessment for those in the first year of the program is an on-going process. Even before joining CAUSE, teens must go through an interview process, modeling what happens when applying for any job. At orientation, youth are introduced to a series of evaluations that are used throughout the year. The first year participants are also involved in the biology training which has a set of quizzes and exams scheduled on the syllabus. These quizzes
and exams are important milestones for the youth as a certain “grade” in the “course” is required to be able to continue in the program and become a full-fledged CAUSE participant. First year youth also receive formal progress reports mid-training and at the completion of training. Not only do they learn their grade in training, but they also receive detailed feedback on their work ethic, participation and attitude. This type of feedback can be helpful in alerting the teen to behaviors or situations where they need to be more attentive.

Formal assessments continue once youth finish training and are fully integrated into the program. All youth work with a staff member to set personal goals for the year. Personal goals may include taking on a leadership role in Rap sessions, having more interactions with other youths, or maintaining a positive attitude during group activities. Youth also have annual performance appraisals. Using a five-point system, youth are rated on communication, decision making, initiative, interpersonal skills, job knowledge, productivity, work quality, and customer service. This feedback is reviewed with each teen individually and signed by a staff member and the teen. All youth receive evaluations from the senior counselor overseeing their summer camp performance. This evaluation focuses on their content knowledge, preparation, and facilitation of activities during camp. Returning youth also receive a mid-year evaluation similar to the progress reports given to trainees.

Informal assessment is also integrated into staff meetings and other full-staff gatherings for all participants. McLaughlin’s cycles of planning, practice, and performance are closely mirrored in the strategies used by the staff when they prepare the youth to do a new activity or community outreach event. For example, at a March staff meeting, participants and Academy staff prepared for outreach at the Garden State Discovery Museum. First the staff introduced the topic of communication and its importance for the youth immediately and in the future. Then the youth broke out into smaller groups to work on a skit on the topic of communication. The group then reassembled and performed their skits for each other. Next, the group reflected on the role communication plays in presenting yourself and interacting with the public, in this case a museum visitor. The staff meeting closed with the teens journaling on the topic.

Recognition, the other half of assessment, is also seen at the participant-level. The CAUSE program staff takes steps to officially recognize the achievements of the youth individually and as a group as milestones are reached. At the last staff meeting of their birthday month, youth choose a gift from the box of toys and fun science things that have been collected or purchased by the staff for this purpose. When they get accepted to a college, the Academy staff members congratulate the youth and make copies of the acceptance letter for their files. Individuals are also recognized and given more responsibility when they apply for and become senior counselors. Group recognition includes the fourth year participants’ outing, holiday get-togethers at Wenger’s house, and the recent CAUSE reunion party.

A challenge for the program will be to become even more assessment-centered as defined by McLaughlin. The staff has already established formal mechanisms for evaluating youth. The program staff may want to identify the ways to push the boundaries of what it means to be assessment-centered, keeping in mind that assessment includes formal and informal aspects. Assessment-centered practice is thoughtful, intentional practice. It requires the staff to continually measure the program, as well as the progress of the youth and staff. They may
consider setting goals for the program and revisiting these goals on an annual basis. Youth as well as staff have a role to play in directing this part of the program. Youth participation in program-wide goal setting will provide another opportunity to program with youth. Youth may feel more ownership of the program when they help to create and reach program-wide goals.

**Community-centered**

McLaughlin states that a “caring community is the essential element of an effective youth organization” (2002). Often youth describe these environments as being like a family. The elements that are essential to create a caring community are ones that would be found in a supportive family including (McLaughlin, 2000):

- “Safety” within a potentially dangerous or risky urban area,
- “Trusting relationships” emphasizing acceptance,
- “Clear rules” of behavior governing participation and treatment of others that the youth deem fair,
- “Responsibilities for the organization” and its physical and fiscal assets,
- “Constant access” to supportive adult staff members, and
- “Social capital” by connecting youth to adults and the larger community.

The Academy staff recognizes the need to provide a safe environment for the teens. For Frazier, safety comes even before the educational part of the program. “It gives them a safe place to be where they’re supported by adults who really give a darn about them. Regardless of what else is going on, what they’re learning, it’s a safe place,” she said. Parents of the teens also found the safety provided by the program environment an important factor. One mother liked the fact that her daughter was surrounded by adults and friends who were looking out for her when she was at CAUSE.

The sense of community that has been created in the program is strong. The teens in the focus group often described the program as their second, or even first, family. McLaughlin also recognized this phenomenon as an indication of successful youth programs (2000). In the following examples, teens highlight the qualities that help to create a family atmosphere in the program.

*It’s like, this isn’t a second family to me. This is my first [family] because...I raised myself, so like being here, it’s taught me to respect adults because it’s so hard for me to respect adults. (Teen, focus group)*

*This is like our home away from home. Like Cheronda and Damon, they’re like our parents. Like if you really think about it, they’re always there for you. They take care of you...Cheronda, I call her “Big Mama” for a reason, like that’s my mom. (Teen, focus group)*

*And sometimes like home isn’t where you live, it’s where you love to be and like sometimes you just can’t be at home all the time. You need somewhere else to go... (Teen, focus group)*
And like when your own family’s like acting up and going crazy and stuff, you can always come here and work things out. Like I had times where my family was just off the wire and stuff and I would come here and tell them, “You know what happened to me?” And there’d be somebody that’d [say], “What happened?” (Teen, focus group)

For some of these teens, CAUSE is the place where they feel most safe, most listened to, and more at home. Their parents recognized this as well. One mother described the support at CAUSE in the following way:

I feel as though CAUSE is more than a job. I feel as though it’s like a family because everybody in here – [her daughter] talks to them all on the phone even after they leave here like you would do with a close friend that you grew up with. It develops into that kind of closeness like they knew each other for years...Here you get a chance to verbally express yourself and when you’re able to express yourself it brings on a closeness. (Parent, focus group)

Participants and their parents recognize the important role of CAUSE. It supplements or even takes the place of functions that a family provides for a growing teen.

Constant access to caring adults who step in and step up to listen or help makes CAUSE family-like for teens in the program. This access benefits both current and past participants and is available both in-person and virtually. In-person access is apparent in the number of teens who arrive to work early just to hang out in the CAUSE office. Frazier mentioned that some teens come in to the office even when they were not scheduled to work. These teens knew they had some place to go where they are welcomed. Virtual access means the Academy staff members are always “on-call.” Teens have their cell phone numbers and call them at home, even in the middle of the night. One former program participant talked about calling the CAUSE office when she was away at college:

I called Michelle [a former program mentor] crying in the middle of the day. I didn’t know what to do. I didn’t know what to say and she just talked me though and said “Calm down, take a breath.” And that helped, because I didn’t know, like my roommate was in class, and there wasn’t no body else I could call...I was like “Oh my god, I gotta talk to somebody,” so it was like 1 o’clock in the afternoon so I was like, “Michelle?” You know, it’s just like the little thing. Like anytime, anyplace, somebody will help you out and talk you through it like no matter what... (Alumnus, focus group)

Participants, both current and past, know that acceptance and advice is only a phone call away. “There will always be someone at CAUSE that will be constantly encouraging me to thrive,” concluded a current participant.

In the focus groups, teens talked a lot about building and maintaining trust in general, with the Academy staff, and with other teens in the program. Trust helps to form the basis of these highly
supportive-family like relationships the teens have. The following examples illustrate the process of building trust:

Like for me, so I like I gotta see what kinda person you are to see if I’m gonna trust you or not first, because if I see like that loud-mouthed person going around telling people’s business or like – or if you’re just a regular person and just stay to yourself or whatever, you know, repeat what somebody tell you to yourself. That’s why depending on if I’m gonna trust you or not. I got to see who you are first. (Teen, focus group)

I learned to trust people here because they trusted me. Like when I realized that – like when I realized that like they had faith in me, that they trusted me, that they left stuff up to me to get done, and when they gave opportunities to do stuff on my own and not nag me about it like my parents – like my mom does or my brother does or my sister does, I realized that they actually did trust me to get something done and that didn’t necessarily make me trust them but opened the door to let me trust them. You know what I mean? Trusting with time. Like trials and tribulations, like I went through it and they were there. Like it came with time. I can’t pinpoint the exact time I began to trust them but just the simple fact that they had trust in me opened the door for trust to exist between [us]. (Teen, focus group)

For me, I think without trust in this program, I mean I couldn’t do it ‘cause there’s certain things that we do – well, everything that we do – if you don’t have trust in the people in the program then like everybody in the program will just fall through like folks over in summer camp. ‘cause you can’t run a class sufficiently or you can’t work with kids sufficiently if you don’t trust that the other counselors will do their job ‘cause if you’re constantly worried about what they’re doing, you can’t get done what you need to do and everything would just fall…(Teen, focus group)

CAUSE builds the social capital of the youth by putting them in close contact with successful adults. The Academy staff members working with the program, in most cases, have been through the program themselves. These staff members have graduated from high school and college and have returned to the community to work with teens. As such these adults have similar backgrounds to the teens. They can identify with the teens and the teens can identify with them. The adults provide an example of someone from their neighborhood who has attended college. They are mentors who can weigh-in on college life and decision-making because they have been there.

Social capital is also built through the trips the participants go on. The teens viewed the college visits, for example, as allowing them to make good choices as they continue their education. College visits were important because they introduced the youth to schools they would not have considered, and they helped youth see the variety among campuses. As one teen explained, “I didn’t pick any of those colleges but it did give me exposure of what campuses I want and what campuses I don’t want…I realized that I don’t want a big school, I want a little school.” Another
teen realized that an important factor in choosing colleges was where they are located: “I’ve been to inner city colleges and colleges with trees surrounding it.” He chose to go to a school with a city campus. Other trips provided the opportunity to see more of the world. “I got to [go] places I hadn’t been to and probably never would have seen if I didn’t come here,” reflected a former participant. Travel beyond their own neighborhoods and city expanded the worldview of teens, allowing them to see potential colleges and professions.

Clear rules are a key factor to maintaining a community-centered atmosphere. A list of rules is generated at the beginning of the year in a staff-youth activity. This is an example of the staff involving youth in shaping the program expectations. A group consensus is needed to approve the rules. Interestingly, staff mentioned the youth are much harder on themselves and their peers than the adults would be. They have high expectations for behavior. Typically, the list of rules is signed by the student and sent home to the parents.

The youth in the focus group generally felt comfortable with the policies and rules used in the program. However, there was one rule that caused them concern: the “Shut-up” rule. The rule is supposed to limit the use of put-downs or unprofessional language by imposing a fine (of a quarter) for every violation. The teens felt this rule was unreasonable and unrealistic; it did not take into account the ways they communicate with their peers. They view the use of a playful “Oh, shut-up,” as part of the common language of teens. It is interesting that despite the consensus-style process for creating program rules, the teens would be at odds with this rule. Upon consultation with staff, it was suggested that the reason the teens did not like the rule was that it was consistently enforced. Teens commonly want to be treated like a responsible person who will conduct themselves well without the threat of a penalty. Perhaps this is a case of the teens being too hard on themselves and not liking the consequences. Staff suggested they will revisit this rule during the upcoming rule-setting meeting.

The teens also talked about what happens when a rule is broken. All too often, they feel, every Academy staff member will point out the violation to them. For teens, this can create an environment where they feel they are being nagged about every mistake they make. Staff, however, have a different point of view. They site the program procedures; repeated violations of a rule means repeated discussions with staff on the implications. In addition, a repeated offence requires the disciplinary action to move up the chain-of-command from one staff member to another. Indeed, it may seem to the teen they are being “nagged” by multiple staff members, but for the staff it is a procedural process.

It is important to remember that the teens want to be treated differently by the staff than they are treated by their parents. Admittedly, the staff has high expectations for the teens. They are responsible for making sure these teens have the support and motivation needed to succeed in life. As the staff knows, communicating with teens is a balancing act. It involves continual explanation, reminding, and clarification.

Community-centered, however, means more than just fostering the community within the program. It means making connections with the community at-large. As mentioned previously, outreach opportunities within the CAUSE program provide opportunities for the youth to interact
with and serve a wider community. Staff and youth both valued working within the Camden community.

CAUSE tries to create and support community connections on two fronts: with the public schools and with community-based organizations (CBOs). Given the conditions within the Camden city community, the staff is struggling on both fronts. A close connection with the schools would benefit the program’s recruiting efforts by making them more visible to potential participants. Staff members expressed that the school system has a lot of inner turmoil and staff turn-over, making it hard to communicate the value of CAUSE to the school staff. CAUSE staff rely on school staff buy-in because teachers have close contacts with the students and can alert them to the opportunities CAUSE has to offer. The Academy staff currently has trouble scheduling their recruitment presentations and has not been able to find many school staff members who will promote the program either to staff or students. In order to get buy-in from the administration, the program staff has approached the superintendent and school board on making CAUSE a science credit program. Granting school-based credits for CAUSE participation may attract more youth to the program. Unfortunately, despite going in front of the school board twice, this proposal has not yet been approved. Staff continue to pursue this opportunity.

In terms of making connections with the local CBOs, the CAUSE staff has been similarly disappointed. They have had trouble fostering on-going contacts with local community groups. Despite positive responses from individual staff members at these organizations when teens offer to volunteer, long-term relationships are hard to maintain. Academy staff members feel that many CBOs in Camden city have competing priorities within their own organizations and may at times be too distracted to manage the offers of help. This results in false-starts and few long-term relationships with Camden city CBOs.

Staff members remain determined to provide the CAUSE youth with positive community service experiences. The most visible outreach project is the CAUSE Summer Camp, which is a partnership between CAUSE and local schools to provide science enrichment for youth. Other projects within the community include helping at the Red Cross blood drive and on-going contacts with the Camden Housing Authority, the Dooley House, and a few other local groups. More and more, however, the staff is able to find sustainable partnerships outside of the Camden area. One example of this type of relationship is the partnership between the Academy and the Garden State Discovery Museum. CAUSE youth are trained to facilitate museum experiences for visitors to the museum. The program leadership, Wenger and Frazier, would prefer if these opportunities were available in their own museum and more in their own community. Barring this, they are willing to look elsewhere to provide CAUSE youth the opportunity to do community outreach.

The challenges in terms of building community connections are not easily solved. Would this be a threat to the program and its larger mission of serving the Camden city community? How much recognition by the community does the program need to maintain its recruitment goals? The Academy staff should strategically consider the ways in which the program will change if they build connections outside of the community versus within the community.
CONCLUSIONS AND DISCUSSION

The central focus of this case study is the CAUSE program model. The case study described the CAUSE program model, demonstrated the alignment of staff and youth on PYD and the program’s support of thriving, and compared the CAUSE model to McLaughlin’s framework. These elements, along with the impacts detailed in Phase I, provide the evidence to answer the fundamental question of the Phase II summative evaluation: Is the CAUSE model effective in promoting youth development? Yes, the CAUSE model is largely an effective one. When the model is thoroughly understood it can be compared to a framework for measuring successful, engaging programs. In this comparison, the CAUSE program model is seen to closely resemble a successful youth development program. The program not only promotes youth development, but it achieves youth development.

What the CAUSE program lacks, however, is a purposeful alignment with a PYD framework. There is sufficient evidence that the program aligns fairly well with the framework presented in McLaughlin’s Community Counts (2000). Figure 3 depicts the alignment between the CAUSE program and McLaughlin’s framework. The program staff could use this alignment to their advantage. McLaughlin’s framework could be intentionally employed by the staff as the program’s guiding strategic plan. The areas in which the program model falls short of the framework could be strengthened. Success would be measured by the degree to which the program moves towards alignment with the ideals of a youth-centered, knowledge-centered, assessment-centered, and community-centered program. If the Academy as a whole moves the program into closer alignment with the framework’s view of youth-centeredness and community-centeredness they will then be able to strategically consider replicating the model program in another underserved community.

Figure 3: CAUSE program alignment with McLaughlin Framework (2000)

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<th>Framework Aspects</th>
<th>Areas of Alignment</th>
<th>Challenges</th>
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<td>Youth-centered</td>
<td>Asset-based, whole-child approach</td>
<td>Continual communication of program activities and expectations to youth</td>
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<td>Mentoring</td>
<td>Using more strategies to program with (as opposed to for) youth</td>
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<td>Supporting youth’s diverse needs</td>
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<td>Increasing leadership opportunities via career ladder</td>
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<td>Knowledge-centered</td>
<td>Strong marine biology focus</td>
<td>Maintaining the high-level of knowledge-centeredness as other program aspects are reviewed</td>
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<td>College-level curriculum</td>
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<td>Appeal to multiple learning styles</td>
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<td>Youth as curriculum writers and instructors</td>
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The difficult thing about studying a program like CAUSE is that the very nature of the program is so complex. It would be wrong to assume that each part of the program is discrete, that each program activity does one thing and one thing only. The more a program like CAUSE is investigated, the more connections are discovered. CAUSE is a complex web of values, attitudes, relationships, ways of knowing and ways of being. Multiply this web by each program activity, happening each week, each year for three to four years for most participants. The web then grows even more dense. This dense web of connections is what creates the CAUSE program. Developing a single youth within the program then, is a process of building this web around them and underneath them, supporting and nurturing them. Finally, watching as the youth sets off into the world, as a person who is thriving.

### References


Appendix A: Protocols
CAUSE Case Study
Staff Questions – March & April 2007

- What is your relationship to this program? (Position, length of relationship, current or historic, etc.)
- In your own words, what is (was) the purpose and/or intended outcomes of this program?
- What is the best thing about your relationship with this program?

Leadership/Organization & training
- How are leaders for the program recruited and trained?
- Tell me about the program’s leadership. (stable, visible, involved, etc.)
- What would you say are the key requirements to be an effective leader or staff person in this program?
- What training or staff development helps, or would help this program be successful?
- Are you aware of any examples when youth participants have become leaders within the program? Has that been effective?
- How is the program situated in the organization in which it is housed?
- How is the program supported in the organization?

Recruitment & implementation- Cheronda and Angie only
- How are participants recruited into this program?
- How do participants develop a sense of accomplishment or success in this program?

Community- Cheronda and Angie only
- The participants in your program are involved in the community. Tell me about that. Maybe some probes: Has that worked well? How would that part of the program be improved?
- Have you have developed the following community partnerships (X). Tell me about how those came to develop – what or who was the catalyst for developing those relationships? How are those relationships sustained?
- What explicit efforts did you, or other staff, make to that your community came to value this program?

Challenges faced and Improvements for the future
- In your opinion, what would improve this program? Are there barriers to those improvements, tell me about those?
- What were the largest barriers that your program had to overcome to be successful? How were they overcome?
- What were some key lessons you learned from the development and implementation of this program/project that you can apply to future programs?
- Tell me about how the program might continue in the future.

Thriving
- How can you tell if a young person is thriving or doing really well?
• What skills, competencies, and/or qualities indicate that a young person will probably thrive in the future, as an adult?
• Are there any things about thriving that apply to all young people, no matter who they are? If yes, what are they?
• Do you feel CAUSE helps youth to thrive? If yes, how does it?
CAUSE Summative
Case Study Teens Focus Group Protocol
December 4, 3006

Introduction

Thank you very much for agreeing to participate in the case studies and coming to in this focus group. You’re here because you are participated in CAUSE. We are interested in your experiences in the program, and CAUSE has made a difference in your life, in shaping you into who you are today. I am guessing that CAUSE has meant different things for each one of you, so feel free to express your unique situation and opinions.

Our conversation will last about an hour. And it will be very informal. Please feel free to get up for food and drinks during the discussion; and feel free to leave at any point if you need to. Does anyone mind if I tape record our conversation? It will save me from having to write down all of your comments; no one will hear the tape except me and my research colleagues. And when our discussion is summarized no one will be identified by name. [Turn on digital recorder.]

Explain the following:
- The research project- what are we trying to find out;
- How the case study will proceed-i.e. their choice of communication and the importance of reading the “case” as we go;
- Ethics of conducting research-i.e. should we use any identifiers in our report;
- What it is I do in general;
- What we are asking of them-i.e. its about learning how the program works and don’t feel like you have to answer any particular question if it is uncomfortable;
- Make sure to ask whether or not they want NJAAS staff in the room during the focus group.

Are there any questions before we get started? [Pause for questions; reply as necessary.] Okay, let’s begin.

Participation Background
1) Let’s go around in a circle and introduce your self and say when you started participating in CAUSE?

2) What do you like best about this program?
3) What makes CAUSE attractive to teenagers? Why did you chose to come to CAUSE in the first place? Are the reasons the same after experiencing the program?

**Impact**

4) What is happening for you in CAUSE that isn’t happening anywhere else?

5) What is it about CAUSE the works for you? Why? Let’s see if we can narrow down the origin of that impact- is it the environment, the mentors, teaching, learning science?

6) If not answered in number 5: CAUSE offers a range of activities, outreach opportunities, support systems like RAP sessions and mentoring, and college prep. What components worked best for you? What is the biggest bang for the buck so to speak? Why was that so important for you?

7) Does CAUSE influence you in school, with friends, and at home? How?

Thank you so much for coming and remember we are going to keep in contact from now until May. It will be a chance for you to reflect on what’s happening and to let me what CAUSE means to you.

So let’s talk a little bit about how I can get in contact with you: email, phone, what works? And we will plan to chat when you are here at the Aquarium, during work hours; but if you want to talk other times, that’s ok too.
Introduction

Does any one have anyone mind if I use the digital recorder?

[Turn on digital recorder.]

Provide summary of last discussion- getting to know each other, talked a lot about the support structure here at CAUSE. Does any one have any questions before we start?

Has anything really interesting happened since we last talked? Any major dirt happening at CAUSE? How are the 1st years’ doing?

Topic

Okay, let’s start with our topic for today: Mentoring.

1) How often do you talk openly about Mentoring in CAUSE (and by this I don’t mean the mentors as people, but the act of being a mentor to others)? In what contexts do you talk about mentoring?

2) Who’s your mentor, here or in life? Why? What do they do for you?

3) What skills do they have?

4) Who do you mentor? How do you think you do at being a mentor? Do you even want to mentor?

5) What’s the process of becoming a mentor, again not the position but the skill? At CAUSE, are you trained to mentor? How?

6) Today, if there is one thing you could change about how this process of mentoring works at CAUSE what would it be?

Now I have a writing exercise for you- just take about 10 or so minutes and journal to me about mentoring. I have some questions at the top of the page to get you started, but feel free to take it in another direction.

Thanks!
Thank everyone for coming.
Start with a time you set a goal and met it. Ask others to do a similar reflection.

Is it ok to start recording?
[Start taping]

So today I wanted to talk about your goals for the future- this can be in high school, once you are out of high school, for college, and for your career later in life.

1) Let’s start short-term. What are your goals while you are in high school?
   Is there anything the CAUSE program is doing to help you meet those goals? What else can CAUSE do to help you meet those goals?

2) What are your goals for when you get out of high school? How does going on in your education fit in? Did you always know you wanted to go on in school?
   Is there anything the CAUSE program is doing to help you meet those goals? What else can CAUSE do help you meet those goals?

3) What are your career goals? What do you want to do?
   Is there anything the CAUSE program is doing to help you meet those goals? What else can CAUSE do help you meet those goals?

4) Do you think you can reach these goals? Why or why not? Who will help you?

5) Do you think it is possible for you to take your situation in life, even if it is not very positive, and still make something good for yourself? Can good come out of the bad times in life? How does a person do that?

6) Do you have goals for being involved with the community? What would that look like for you?

7) What about your community or Camden in general would you like to change? Do you think it is possible to make that type of change?

8) If you had a goal for the CAUSE program- think big- about what it could do for people, what would you like to see happen?
Introduction

Lay some ground rules: if you need to take a break during the discussion, please do so. It’s ok to
laugh and have fun but please try to stay focused.

Does any one have anyone mind if I use the digital recorder?

[Turn on digital recorder.]

In March we didn’t have a focus group, instead I asked you to do a writing prompt on thriving.
To remind you the questions were:

1) How can you tell if a young person is thriving or doing really well?
2) What skills, competencies, and/or qualities indicate that a young person will probably
   thrive in the future, as an adult?
3) Are there any things about thriving that apply to all young people, no matter who
   they are? If yes, what are they?
4) Does CAUSE help you to thrive? If yes, how does it?

Does anyone have anything to follow up on that?

Topic- The CAUSE program

1) Let’s talk a little bit about why you joined CAUSE? What is your motivation? Why do you
   come back every year?

2) What responsibilities have you learned because you were in CAUSE? Do you think you
   would have learned this anywhere else?

3) What are the lessons you have learned because of CAUSE? i.e. did you learn something about
   team work, making friends, perseverance?

4) What have you learned about diversity and cultural respect as a result of CAUSE?
CAUSE Summative
Case Study Teens and Parents/guardian Focus Group Protocol
June 12, 2007, 6:30 pm

Introduction
Thank you very much for agreeing to participate in this conversation. You’re here because you participated in CAUSE. As you may know, I have been having monthly meetings with your teens. This is part of a larger study to find out if the CAUSE program is a successful one. Your teens have been very helpful in giving honest feedback during this process. I felt, however, that I needed your perspective as well.

Today I am interested in hearing from all of you. Most of my questions are for the adults, but I’ll leave the teens time to respond before we move on to the next topic. I recognize that everyone is different, you may or may not know a lot about the CAUSE program and what your teen does here. That’s ok. Feel free to express your unique situation and opinions.

Our conversation will last about one and a half hours. And it will be very informal. Please feel free to get up for food and drinks during the discussion; and feel free to leave at any point if you need to. Does anyone mind if I tape record our conversation? It will save me from having to write down all of your comments; no one will hear the tape except me and my research colleagues. And when our discussion is summarized no one will be identified by name. [Turn on digital recorder.]

Are there any questions before we get started? [Pause for questions; reply as necessary.] Okay, let’s begin.

Questions

1) Adults: How would you describe the CAUSE program if you were telling a friend about it? What is it?

2) Adults: How would you describe your teen’s involvement in CAUSE? Do you talk about it? What do they share?

3) Adults: How does CAUSE fit into their lives?

4) Teens: Is it important to you that you share your CAUSE experience with your family? Why or why not?

5) Adults: What is the best thing CAUSE has done for your teen?
6) Adults: What is most important about this program for you as a parent?

7) Adults: Let’s talk really generally about teens and growing up. Have you seen changes in your teen in the past few years? Let’s talk about those? Can you give me an example?

8) Adults: Where did these changes come from? Do you think any of these changes are due to CAUSE?

9) Teens: Do you think you have seen any changes in yourself as you grow up? Where did these changes come from?

10) Adults: Do you think CAUSE has had any impact in the way your teen acts or interacts at home? Can you tell me more about that? Give me an example.

11) Teens: Do you think CAUSE has had any impact in the way you act or interact at home? Do you share your CAUSE skills and knowledge with your family? How does CAUSE help you do that?

12) Adults and teens: Does CAUSE contribute your community? Do you have any examples?

13) Adults and teens: Do you think CAUSE is well known in your community? How do you know- what evidence? What could CAUSE do to make it self more well-known?

Closing
Gift Certificates presentation and thank you!
Teen Writing Prompts

January 2007
What is a mentor? What do I need from my mentors so I can succeed?

March 2007
Take 10 to 15 minutes to answer the questions below. Please make sure your answers are readable.

1. How can you tell if a young person is thriving or doing really well?

2. What skills, competencies, and/or qualities indicate that a young person will probably thrive in the future, as an adult?

3. Are there any things about thriving that apply to all young people, no matter who they are? If yes, what are they?

4. Does CAUSE help you to thrive? If yes, how does it?
CAUSE Summative
Alumni Focus Group Protocol
December 3, 3006

Introduction

[Before you start, have alumni sign-in so we know who attended each focus group. Ask alumni to make a name tag and wear it, so we know who is who.]

Thank you very much for coming to the reunion today and for participating in this focus group. I know how eager you are to get back out there and chat with your friends, so I’ll try to keep us focused. You’re here because you’ve all participated in CAUSE. We are interested in your experiences in the program, and how, if at all, CAUSE has made a influenced you. I am guessing that CAUSE has meant different things for each one of you, so feel free to express your unique situation and opinions. I know that many of you responded to the web or mail survey, and we thank you for those comments. It is so valuable for the program planners like Angie and Cheronda to hear this kind of feedback. We read your responses carefully, and used them to come up with the questions we’ll ask you today. But now I’d like to go a step further and really get into the WHY and HOW of CAUSE.

Our conversation will last about an hour. And it will be very informal. Please feel free to get up for food and drinks during the discussion; and feel free to leave at any point if you need to. Does anyone mind if I tape record our conversation? It will save me from having to write down all of your comments; no one will hear the tape except me and my research colleagues. And when our discussion is summarized no one will be identified by name. [Turn on digital recorder.]

Are there any questions before we get started? [Pause for questions; reply as necessary.] Okay, let’s begin.

Reflection on Participation
1) I’d like to start with a discussion of what you remember most about participating in CAUSE. Now that you are out of the program, looking back what is most memorable for you? (Probes: why was that memorable? How did that come about? Why was that meaningful for you?)

2) What was happening for you in CAUSE that wasn’t happening anywhere else?

3) From everything I’ve heard about CAUSE, it sound like there are two huge components, what you do as part of your job in CAUSE (like teaching, facilitating camps, and outreach) and what CAUSE does for you (like giving you more confidence, a family like environment). Do I have it right? Tell me more about how these two aspects of the program influence each other.
Outcomes of participation

4) Now I’d like to talk a little bit about how CAUSE shaped you and the person you are today. How are you still drawing on your CAUSE experience today? (Probes: Would that happened for you without CAUSE? Why? What is it about CAUSE that did that for you?) IF they don’t go to it: how did CAUSE do in helping you to learn more about yourself- your strengths, your weaknesses. What about it improved your self confidence? How? Your resiliency? How?

5) One of the things we are interested in is how CAUSE prepares teens and young adults for future employment. We heard a little bit about this in the surveys we did. What about CAUSE prepared you for your current career? (Probe: Was that outcome because of CAUSE? Would that have happened without CAUSE? What was it about CAUSE that supported that?) IF they don’t go to it: how did CAUSE do in helping you to learn more about yourself- your strengths, your weaknesses. What about it improved your sense of leadership? How? Your ability to work well with others? How? You respect for others? How?

6) Another area we are interested in is how CAUSE prepares teens and young adults for furthering their education. We heard a little bit about this in the surveys we did. Do you think CAUSE helped you with going on in school, like to college? Did that happen for you? Tell me about it. (Probe: Was that outcome because of CAUSE? Would that have happened without CAUSE? What was it about CAUSE that supported that?) IF they don’t go to it: Did CAUSE support or change what you wanted to do in college or as a career? How?

7) So we’ve talked about how CAUSE may have influenced your career path, education, and you as a person. Are there any other impacts we haven’t talked about? CAUSE offers a range of activities, outreach opportunities, support systems like mentoring, and college prep. What components worked best for you? What is the biggest bang for the buck so to speak? Why was that so important for you?

Anything else that I haven’t asked about? Thank you so much for your participation. We really appreciate hearing about your experiences.
Appendix B: Teen Letter and Permission Form
For over 13 years, the New Jersey Academy for Aquatic Sciences (NJAAS) has worked with teens and young adults employed by the CAUSE program. CAUSE is an opportunity for teens to work with the greater-Camden community surrounding the Adventure Aquarium. CAUSE staff members lead and participate in Summer Camp, Deep Sleeps, Clubs and after-school programs, and community outreach. After 13 wonderful years, the staff at NJAAS are interested in learning what makes CAUSE so successful and sharing the program’s success with other learning organizations.

In the summer of 2006, NJAAS received funding from the William Penn Foundation to investigate the impacts of the CAUSE program. This funding has allowed the staff at NJAAS and their research partners at the Institute for Learning Innovation to conduct a full-scale evaluation of the CAUSE program.

Why are we doing this research on the CAUSE program?
Staff at NJAAS know from experience and previous study that CAUSE is a great program. They have heard from former CAUSE participants who say the program impacted their choice of career or interests. We are interested in learning more about these impacts from current participants in CAUSE. With this information, NJAAS will be able to improve the experience of current CAUSE staff, be able to replicate the success of CAUSE in other locations, and share this information with other aquariums, museums, science centers, and zoos.

What are we trying to find out?
This study is trying to answer the questions:
- “Is the CAUSE model effective in promoting youth development? If so, how?”
- “What are the components of the CAUSE program that contribute to its success?”

Youth development is the goal of all the things participants do in CAUSE. This includes leadership, working with others, serving the community, learning more about yourself, and deciding what you want to do in life. NJAAS is trying to understand how CAUSE works and what parts of CAUSE make it work for teens.

What will you do in this study?
In addition to their regular participation in the CAUSE program, teens involved in the evaluation study will be asked to do the following:
1) Attend two focus groups at the Adventure Aquarium. The first focus group (Winter 2006) will introduce the project and answer any questions teens may have. The second focus group (Spring 2007) will be a chance for teens and their parents to reflect on what
CAUSE has meant to them. The focus groups will be audio recorded.

2) “Check-in” with a researcher once a month from December to May. These check-ins can be via email or on the phone. The teen and the researcher will work together to get to the heart of what CAUSE means to each participant.

3) Be observed by a researcher as they go about their normal CAUSE duties.

4) Give feedback to the researcher on the written version of the evaluation results. This is an important step because it allows the teen to make sure that the report truly reflects their CAUSE experience.

As a thank you gift in recognition of their participation in the study, your teen will receive a $50 gift certificate to Wal-Mart at the completion of the study.

How much time will this take from your teen's day?

Each focus group will take about one and a half hours, the monthly check-ins will take about an hour each, and the feedback on the report will take 1-2 hours. Researchers will coordinate with staff at NJAAS to ensure that teens do not miss out on any regularly scheduled CAUSE events. Researchers and NJAAS staff will also provide reminders of monthly check-ins and time during their shift at the aquarium for teens to contact the researchers.

Are there any risks to your teen in this research?

Not at all. In fact, in this study will give teens extra time to reflect on the meaning of CAUSE in their lives.

Are there any benefits to your teen in this research?

Yes. On a personal level, your teen will have the opportunity to think deeply about the meaning of CAUSE and to follow up on topics of your own interest during the study. On a larger scale, the results of this study will further improve the CAUSE program as a whole and help NJAAS describe the successes of the CAUSE program.

What about confidentiality?

The audio recordings of the focus groups will be identified by the date, time, and program. The researchers will not use the name of any person in the study. When the study is completed you may ask NJAAS staff for a full copy of the evaluation report.

Does your teen have to participate in this evaluation study?

Participation is voluntary and there will be no penalty for you if you do not participate. In addition, teens may drop out of the study at any time.

Who can you call if you have more questions?

If you have questions about the research or want to withdraw from the study, please contact Cheronda Frazier, Youth and Community Programs Manager at New Jersey Academy for Aquatic Sciences, at (856) 361-1019 or cfrazier@njaas.org.
November 2006

Dear Parent/Guardian,

As we begin our study of the impacts of the CAUSE program, I am writing to you to ask for your help. In order to study how the CAUSE program benefits teens who are involved in the program, we need written permission from students’ parents or guardians to allow our researchers to include your child in two focus groups, observe them during working hours, and speak with them on the phone or through email. Our researchers will be overseen and guided by NJAAS staff as we seek to understand the benefits of CAUSE. Please complete the form below with your teen and return it to me as soon as possible.

More information about the CAUSE program and the research study can be found in the attached newsletter. We encourage you to ask your teen and NJAAS staff about the CAUSE program. If you have any questions or wish to discuss this program or the research study, please contact me at (856) 361-1019.

Sincerely,

Cheronda Frazier
Youth and Community Programs Manager
New Jersey Academy for Aquatic Sciences
1 Riverside Drive
Camden, NJ 08103

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New Jersey Academy for Aquatic Sciences
CAUSE Program Permission Form

My teen _______________________ has permission be part of the study about the benefits and impacts of CAUSE during the 2006-2007 program year.

Parent/Guardian Name: _______________________________________

(Please print)

Parent/Guardian Signature: ______________________________ Date: __________

I agree to participate in the CAUSE study, including attending all focus groups and speaking with researchers once a month from December 2006 to May 2007.

Teen Signature: ______________________________ Date: __________

Please return this permission form to the NJAAS staff as soon as possible.
INTRODUCTION

This document details implementation of the EVOLUTIONS After School Program. EVOLUTIONS is a program based at the Peabody Museum of Natural History on the campus of Yale University. EVOLUTIONS was started in the spring of 2005 with 11 teens and, as of the 2007/08 academic year, has grown to include almost 90 high school students. The program was specifically designed to address the lack of students – particularly those from historically underrepresented groups – pursuing advanced degrees in STEM disciplines (science, technology, engineering and mathematics): a problem currently plaguing the U.S.

Funding
Though Yale University and the Peabody Museum of Natural History continue to provide the majority of the financial support for the EVOLUTIONS After School Program, the program’s external funding history is as follows:

• 2005/06: Major funding provided by the Environmental Protection Agency Environmental Education Program with additional funding provided by United Illuminating and the Howard Hughes Medical Institute.
• 2006/07: Major funding provided by the National Science Foundation (Communicating Research to Public Audiences program) with additional funding provided by United Illuminating, Peggy Dannaman and The Ardenghi Trust.
• Summer 2007: Internship funding provided by the H.A. Vance Foundation.
• 2007/08: Major funding provided by the National Science Foundation (Enhancing Opportunities for Diversity in the Geosciences program) and the Institute for Museum and Library Services (Museums for America program; two-year grant ending June 2009)

Program Goals
The EVOLUTIONS mission statement, including program goals and objectives, is attached. The specific curriculum developed and utilized by program staff is intended to supplement formal school-based learning. We are striving to reshape student perceptions as they pertain to the sciences and inspire them to consider careers in science. This is done primarily through a curriculum focused on science career exploration and hands-on, real world exposure to the world of science utilizing the various resources of Yale University and the Peabody Museum of Natural History. In support of this mission, we also work to provide students with the tools and knowledge to successfully navigate pre-college academics and the transition into college.
RECRUITMENT

Ninth through twelfth grade students are recruited from the New Haven Public School System during the first month of school. In its first year, 7th and 8th grade students were also recruited. However, program staff found this age group to be too young for the various intended messages of the program (specifically, the college and career-related curriculum components) and, over the next 2 years, recruitment of these age groups was phased out. The 2007/08 school year will be the first with only high school students but will include students who started their association with EVOLUTIONS as 7th graders in 2005/06. A long-term goal of the program includes returning to these age groups in the future when staffing and resources allow for the development of an appropriate curriculum.

The week before school starts, emails are sent to the science chairs and/or principals of each high school requesting the opportunity to come to the school to talk to students, specifically during large-group presentations (e.g. class orientations, town meetings). We’ve discovered that this method of recruiting is, by far, the most effective as opposed to no presentations or presentations made to individual science classes. To be clear, there is something about the dynamic of a large group that results in significantly more applications than talking to an equivalent number of students across several science classes. That said, it can be difficult to get on the agenda during these school events, particularly at the larger high schools.

On the day before the first day of school, packets containing the following are hand-delivered to the principals, science teachers, parent/teacher organization representative and other science staff at all 12 NHPS high schools:

- A program information fact sheet for teachers;
- A color flyer with pull-off tabs for the classroom wall;
- An application.

*All are attached

Over the first 3-weeks of school, the program coordinator dedicates his calendar to in-school presentations. Presentations are 5-20 minutes in duration depending on the venue and any interested students are given a ¼ sheet of paper with contact information for the program which includes the website where students can download the necessary application forms or fill out the application online (application and student handout attached). Here they can also gain access to the program web pages on the Peabody Museum website containing information and a recruitment video (Quicktime format; see http://www.peabody.yale.edu/education/afterschool.html). Applications used to be distributed to students instead of the ¼ page information sheets. However, presentations are made to several thousand students each year and the applications several pages in length. The ¼ page sheets are more portable, cost-effective and environmentally friendly.

Student program applications are due at the end of the 3rd week of school at which time we hold an event allowing program veterans to help score new applications (new
applicant identities are kept confidential). New student applicants are notified as to the status of their application over the 4th week of the program and the program begins in the 5th week.

The program application is several pages long and asks, among other things, for details concerning a student’s extracurricular involvement, grades, interest in the program and academic interests in addition to requiring two (2) teacher recommendations. Though the length of the application is an effective deterrent against unmotivated students, there is NO minimum grade requirement. Student applications are scored primarily based on completeness, the statement of interest and teacher recommendations. In short, the program seeks to recruit students interested in science, serious about school and committed to participating who are considering college. Maintaining a student constituency representative of the NHPS student population is a program goal though students are not chosen based upon anything but the qualifications listed above. That said, the 2006/07 student population was characterized by 70% young women and 70% students from ethnic groups historically underrepresented in STEM disciplines. The 06/07 – 07/08 program retention rate was ~75%.

**Academic Incentives & Grading**

During early program development, the program coordinator worked with the NHPS science supervisor and independent study coordinator to get the EVOLUTIONS program approved for independent study credit, which is currently available to all students from the New Haven Public School System. Students earn ¼ credit per 45 hours invested in the program. By academic year’s end, most students earn a ½ credit though some students with high involvement have earned as much as one (1) full credit over an academic year. Because students earn credit at their schools, we are required to give them a grade for work completed though students are given the option of receiving a letter grade or pass/fail grade (grading rubric attached).

Students successfully completing a full academic year are also provided with a narrative evaluation written on Yale letterhead, which can be used in job and/or college applications. Student letters are updated each year for students who stay with the program over several years.
PROGRAM SPECIFICS

Program participants meet one day a week for the duration of the school year. They are given a choice of meeting day - Tuesday, Wednesday, Thursday or Friday – and, as a result, classes are a mix of 9th-12th graders. Mondays are “free days” and the classroom is open for students wishing to:

- Receive homework help from a math tutor (2 Yale undergraduates);
- Receive help with SAT prep (pilot program in 2007/08 implemented by math tutors dependent upon tutoring needs of students);
- Participate in one of our three committees (more info below);
- Use our computers for school projects;
- Hang out!

Formal class meetings are held Tuesday-Friday from 3:30 – 5:30pm though students arrive as early as 2:00pm depending both upon when their school lets out and travel time to the museum. City bus passes are provided free to the program and, hence, students by the New Haven Public School System (note: when the program included 7th and 8th grade students, program staff worked with the NHPS transportation department to arrange school bus transportation – at no cost – to the Museum from students’ schools).

When students arrive to the classroom, program staff typically have a craft activity or games available for students though students are also allowed to use one of our 12 Macintosh laptop computers for school work or recreation (monitored). Classes start with any housekeeping announcements, science updates (weekly science news articles) and trivia questions in the form of SAT prep questions (source: College Board). The day’s work is conducted between ~3:45pm and 5:00pm. In the interest of fun, and retention ultimately, the last 30 minutes of class (5:00-5:30pm) is reserved for a fun activity in the form of a class game, science demo or other engaging hands-on activity.

Committees

EVOLUTIONS allows students to participate in one or more of three committees run by program staff:

Newsletter committee: Students produce a quarterly newsletter highlighting program activities and student artwork and writing. It is emailed and/or snail-mailed to parents, Museum staff/volunteers and other friends of the program. It is intended, in part, as a marketing tool in addition to providing a mechanism to maintain contact and buy-in from parents.

Fundraising committee: Students raise money primarily by selling concessions at Museum events or from one of two concession carts catering to staff and students. Students are required to use these funds to subsidize the overnight college trip ($1,000) though the majority goes toward a fun, end-of-year trip or event. Over the 2006/07 school year students raised ~$3,000, a small portion of which was donated to a high school in Enterprise Alabama destroyed by a tornado.
Community service committee: Helping students to develop a sense of social awareness is a secondary goal of the program and the purpose for this committee. In past years, students have participated in hosting an AIDS-walk and have volunteered at an AIDS hospital ward and local book-bank. Hours spent conducting community service are recorded separately to accommodate those students with a community service graduation requirement.

**Staffing**

Though the program has always utilized undergraduates as program staff, in the past we have also recruited staff from Public Allies (see [www.publicallies.org](http://www.publicallies.org)). The current staffing structure is as follows (job descriptions attached):

4 Academic Mentors: Yale undergraduates that help with program implementation in the classroom 5 days/week in addition to some event planning.

1 Administrative Assistant: Yale undergraduate who helps with administrative duties ~10 hours/week.

2 High School Math/SAT Tutors: Yale undergraduates available to students on Mondays.

1 Program Assistant: A position hired specifically to address the geoscience focus for 2007/08 (funding provided by the NSF OEDG program). This year’s program assistant is a geology graduate student whose job it will be to liaise with the Yale Department of Geosciences and Geophysics to secure access to resources.
CURRICULUM / ACADEMICS

There are three broad categories of program activities in which students participate: In-house projects, in-house workshops and field trips. These forms of engagement expose students to a side of science not readily accessible in the formal school environment while simultaneously providing the skills and knowledge to support their success in school and preparation for college. Survey results (below) demonstrate that this approach is effective toward achieving program goals while being valued by students.

In-house Projects
In-house projects are typically completed over the long term (i.e. a semester) and aspects may be assigned as homework with specified deadlines given at the front-end.

Career exploration & panel production: During the 2006/07 school year we piloted an individual-based project giving students a formal mechanism to explore science careers of interest. In the program application, students were asked to note their science career interests. Program staff used this as a jumping-off point to develop a list of careers that included those student lists but that also sought to include related careers perhaps unknown to students, in addition to including a host of STEM-related careers not accounted for on student lists. Students were asked to choose two (2) careers and, for each, generate a 2-page fact sheet (project guidelines and career list attached). Among other things, this project required student interviews of professionals and/or college admission officials in addition to researching those college classes required for a major leading to the careers of interest. Upon completion of their career fact sheets, students work with the Museums’ graphics department staff to produce an 11”x17” panel that highlights one of their careers. This aspect of the project seeks to develop skills surrounding graphic design and the use of graphic software (panel guidelines and supporting documents attached). The career exploration and panel project take place over the fall semester.

Student exhibit: Each year program participants work as a group to mount a museum exhibition. Exhibit topics are driven by funding though students vote on the specific topics. Over the 2005/06 school year, students produced an ambitious exhibition focused on the environmental effects of the terrorist attacks of 11 September 2001. Our 2006/07 exhibit focused on wood frog ecology and highlighted the work of Yale professor David Skelly. The 2007/08 exhibit will be based in the geosciences with the exact topic(s) yet to be determined (NSF funded). As stated, students are involved in the topic decision process and engaged in all aspects of exhibit research, design, layout, construction and marketing. For the exhibit focused on the environmental effects of 9/11, students worked in groups to research various aspects of related events. They produced panels for the exhibition, which, in some cases, included interviewing first-response organizations and individuals. Students helped to layout the exhibit space, erect temporary walls and paint a New York City skyline, in addition to hanging their framed panels. At the exhibit opening, students hosted their families, Museum staff and other friends of the program. The exhibit was in the
The EVOLUTIONS After School Program
EVOking Learning & Understanding Through Investigations Of the Natural Sciences

Peabody Museum for several months over the summer and opened again the following September 11th (2006) at a local environmental museum. In preparation for our exhibit focused on wood frog ecology, students visited the field site of professor David Skelly and worked in groups to conduct lab-based experiments on wood frog tadpoles. Students tested the effects of everything from road salt and fertilizer to temperature and pH on tadpole growth. Student experimental results were presented graphically in PowerPoint slides which were turned into a movie for the exhibit. Students also conducted research related to the focus of their experiments, which provided text for several panels included in the exhibition. Finally, the students’ tadpoles were released into a large terrarium where, over several weeks, students and visitors watched them metamorphose into wood frogs. The exhibit project is undertaken in the spring.

Teaching video: Over the 2007/08 school year students will embark on a pilot project, which will entail working in groups to produce a DVD-format video and associated hands-on activity focused on an earth science standard taken from the Connecticut Framework for elementary and/or middle school students. As envisioned, half of this year’s students will work on the exhibit while half work on the lesson plan with students given a choice of project.

In-house Workshops
In-house workshops encompass those activities conducted in the classroom that fall outside the scope of any of the projects detailed above. They are typically focused around skill building though some are more informational (several presentations attached). These activities are scheduled as they support other assignments or are otherwise scattered throughout the year.

- College workshop: Interactive information session that provides basic information about college and the application process. Also strives to establish a context for high school academics.
- Resume workshop: Students are given the opportunity to produce or refine their resume with assistance provided by a program volunteer with expertise.
- Academic planner and life log workshop: Students start or update a planner produced by program staff (attached). It provides a place for students to document awards, activities, standardized test information, employment history, and skill accumulation in addition to acting as a high school academic planner.
- Transferable skills workshop: An introduction to the concept, value and recognition of transferable skills.
- Citation & plagiarism workshop: Stresses the importance of avoiding plagiarism, presents tools and techniques for citation and provides practice citing texts.
- GPA Game: Activity designed to teach the various aspects of a well-rounded college application.
- Internet research workshop: Tools and techniques for conducting efficient information research on the web.
- Photoshop/PowerPoint Workshop: Teaches the basics of each.
Field Trips
“Field trips” loosely include anything that takes us outside of the classroom. These trips are scheduled throughout the year. Specifically, these trips may fall into one of several categories:

Yale University Campus Trips
- Peabody Museum collection tours: The Peabody Museum owns roughly 11 million objects, which reside in 11 different collections with very limited public access. Program participants receive tours conducted by collection managers and curators.
- Yale science lab and facilities tours: Tours of the laboratory facilities of Yale faculty in addition to other science facilities (e.g. observatory, greenhouse, farm).
- Yale admissions tours: Including the general campus tour, science department tour and engineering department tour.
- Yale undergraduate classes: Students sit-in on an undergraduate science class or lab section.

Local Trips, Off-Campus
- Peabody-owned properties: The Peabody field station (Guilford, CT), Peabody Museum Natural Area (Branford, CT), Horse Island (Thimble Islands).
- Yale owned properties: Yale Myers Forest (Union, CT), Yale Outdoor Education Area (East Lyme, CT).
- Trips to local businesses with a STEM focus (e.g. Sikorsky Aircraft).
- Other local outdoor venues that support curriculum.

Regional Trips
- Museums and science centers: To date, we have visited the Boston Museum of Science, American Museum of Natural History (New York), Queen’s Zoo (New York) and the New York Hall of Science. Day trips such as these are typically scheduled during minor weekday holidays, which is convenient for working parents and assures student availability.
- College visitation trips: Each year we take an overnight trip to visit universities in our region. To date we have visited New York University, the University of Rhode Island, Harvard University, Brown University, Massachusetts Institute of Technology, Princeton University, Swarthmore University and Haverford University. The college trip typically occurs during the NHPS spring break.

The EVOLUTIONS Podcast
Podcasting is a term coined in 2004 that combines the terms “broadcasting” and “iPod”. Though Apple – the makers of the iPod – was not the developer of this technology, they were among the first to develop it in the public realm, hence the name. Podcasts are distinguished from simple downloads or the real-time streaming of files in that the use of a new technology, RSS syndication (really simple syndication), allows anyone on the internet to subscribe to audio or video files. RSS subscriptions are typically free and
enable audio or video files to be automatically downloaded onto one’s computing device so that the subscriber can access them at their convenience. Our podcast, EVO-Cast, is an MP3 file of discussions our students have regarding contemporary issues in science and education. You can subscribe to our podcast via iTunes (http://www.apple.com/itunes/podcasts/).

**Internships / Career Ladder Program**

In the summer of 2007, money was given to the EVOLUTIONS After School Program by the H.A. Vance Foundation to support a pilot internship program placing high school students in the labs of Yale science faculty. During the pilot, 10 students were placed with five participating Yale faculty. The internship program was a tremendous success both from faculty and student perspectives (see evaluation results below). Current funding (NSF & IMLS) provides stipends for 20 student internships with Yale researchers over the 2007/08 academic year and another 20 for summer 2008.

The EVOLUTIONS After School Program was chosen to participate in the New York Hall of Science’s 2007-09 Science Career Ladder Dissemination Project providing training and technical assistance in the development of a youth employment program (see http://www.nyscience.org/fun_learning/SCL).
PARTNERING WITH RESEARCHERS & INSTITUTIONS OF HIGHER LEARNING

The integration of scientific research and education is the focus of the National Science Foundation’s (NSF) Broader Impact review criterion. Successful projects develop substantive partnerships among researchers, educators and students and are able to demonstrate positive impacts. Though most researchers easily navigate the NSF’s Intellectual Merit review criterion, they often struggle with this requirement. The EVOLUTIONS After School Program was specifically designed to render it amenable to partnerships with researchers seeking ways to fulfill the broader impact requirements of NSF and other granting agencies by allowing them to “plug into” program activities. As detailed above, long-term projects and field trips are a standard part of the EVOLUTIONS curriculum. Therefore, student career fact sheets/museum panels, exhibit and video lesson plan projects, lab tours, internships etc. can all provide opportunities for students to learn about current research.

These are some tips for working with faculty, gleaned from our experience working with many different scientists:

• Solicitation of faculty research partners was accomplished through a one-page flyer (attached) that was distributed among Yale science departments. It gives details regarding the EVOLUTIONS program in addition to potential partnership scenarios. We received several inquiries from this solicitation and find that the demand for letters of support for researcher grants continues to increase.

• There is an inherent disconnect between university faculty/researchers and teenagers. Specifically, the vocabulary of even the most conscientious researcher can fly right over the heads of most high schoolers. In return, high school students can often seem aloof and uninterested during presentations and tours. So the question becomes how do we truly form a meaningful connection between the two? We’ve learned to employ several strategies:

  • When faculty are solicited to give presentations, tours and the like, an effort is made by program staff to establish a realistic expectation. For example, though teens will often seem uninterested and even complain about being asked to take part in some particular activity, invariably those same teens will relive some interesting part of the presentation to program staff or parents. In teen speak, “that wasn’t as bad as I thought it was going to be” is near to a rave review!

  • Staff are poised to ask for definitions or clarifications when any presentation reaches a certain level of complexity.

  • Before presentations by researchers and/or faculty, students are reminded to be polite (spelling out the specifics) and encouraged to ask questions.
“Partner preparation” is more intensive when it comes to internships. Specifically, interns attend a job training conducted by staff where several basic guidelines related to employment are discussed. For many students, the internship may represent their first real experience working at something that could be construed as a job with all the associated responsibilities. Staff make themselves available to faculty wishing to discuss the types of projects amenable to teen participation and faculty surveys have already become an invaluable resource of relevant information. In addition, before the internship, staff facilitate a meeting between the faculty host, laboratory staff and interns. At this meeting, expectations and sources of trepidations on both sides are discussed. In particular, program staff make certain that all laboratory rules and safety precautions are clear and understood by students. Survey results from a small scale internship pilot with ten students and five faculty revealed that, in every case, students performed above faculty/researcher expectations to the point that half of the interns were picked up by their faculty beyond the initially agreed upon end-date of the internship.

Involving graduate (and where possible undergraduate) students in the program is extremely beneficial both for the students and faculty.

Thanking people is extremely important. For short term partnerships, participating faculty/researchers are always thanked and an effort made to share a positive student reaction or anecdote. During longer-term associations such as internships, program staff will continually check-in with students and their hosts, taking pictures for marketing purposes and may offer to generate documentation for use in grant applications.
EVALUATION

The program evaluation was carried out by Judah LeBlang of the Program Research & Evaluation Group (PERG) based at Lesley University. Judah carried out 4 focus groups with students in February, March and June 2007.

The evaluation focused on 4 areas: evidence of learning; students’ views of scientists and science; why students signed up for the program; and program highlights and challenges.

Evidence of learning:
Students felt they learned a number of useful skills in the program, and generally felt that EVOLUTIONS met their expectations. They appreciated the tone set by Jamie and Sophia—the relaxed atmosphere and the chance to have fun and learn in a relaxed environment.

Students generally enjoyed the hands-on aspects of the program — the college trips, other trips, visits to the labs/collections, doing the tadpole project, etc. They also found the college symposium useful. Several students said that they had broadened their college search, and were considering schools they hadn’t heard of before this year, as noted below. Virtually all students felt they were more prepared for college.

“We went to Swarthmore, I decided I wanted to go to [another small college]. We went to colleges we wouldn’t have heard of. We never thought of good small colleges.” (high school student)

“I loved the college trip. I wasn’t so interested in going to those schools, but to see what I like in a campus and what I don’t [was useful].” (high school student)

“I liked going on the trips, like to the museum in New York, and they taught us interesting things I never would have known.” (middle school student)

When asked how they would describe the program to a friend, the high school students were particularly enthusiastic. They emphasized the relaxed, social learning environment and the opportunities to go on trips and have fun.

“A really great science-based program. It’s fun, we go on lots of trips, things we wouldn’t do otherwise.” (high school student)

“It rocks!” (high school student)

Students’ view of scientists and science:
Students new to the Evolutions program came in with traditional views on scientists (the “man in a white coat”), but had changed their views based on experiences in the program, and commented that scientists are both male and female and “wear regular clothes.” Also, through the career projects and presentations, students learned that science is much
broader than they had imagined, and that their fields of interest often include aspects of science—for example, psychology, medical illustration and psychiatry.

“I used to think scientists were just nerds in lab coats, but the program has changed my view, and [my view of] the job they do.”  (high school student)

“Before I thought scientists either taught a science class in college or were always dissecting something but now I know it’s a person who has a question and a method. It could be anyone, anyone can be a scientist.” (high school student)

“Bookworm, goggles, lab coat. After meeting scientists, I’d have to say [scientists are] just very ordinary people, very different than I thought [before].”  (high school student)

Why students signed up:  
EVOLUTIONS has developed a positive “buzz” among participants. Therefore, many students signed up after hearing about the project from their friends and classmates. Many of the students planned to return next year. Other reasons for joining the program included earning course credit, access to the computers, meeting students from other schools, and getting letters of recommendation and advice for the college application process. The middle school students tended to have different priorities than the high school students. While most intended to return to the program, some wanted more hands on activities and “more fun.”

“I really liked Evo last year, it worked for me…..I’m more social. Evo helped me figure out some stuff….figuring out who I am. Most of my friends are in Evo, [the program] helped me figure out where to fit in high school.”  (high school student)

“I like it [EVOLUTIONS] because I meet new people and spend time with friends and it gives me a place to be myself and learn about other careers and choices.”  (high school student)

“I came back [this year] because I enjoy it. I started because it looks good for college, but I enjoy it a lot….social, activities, we learn a lot and have fun learning while we do it.”  (high school student)

Program highlights & challenges:  
The data showed that a majority of students valued their time in Evolutions, and felt that they were developing useful skills or high school, college and beyond. Areas of success included:

- Good student retention rate;
- Parents/family members were pleased and proud that their children were participating in the program. They felt the program was helping their sons/daughters get ready for college and building their confidence.
- Students looked to program staff as role models and made friends with their peers from other schools and backgrounds.
Students knew more about science fields, including ecology, and some were considering science-related fields of study in college and beyond. They also felt more prepared for the process of choosing and applying to colleges.

Students had developed some transferable skills and were able to identify those skills—including public speaking, doing research, writing resumes, interviewing, and meeting deadlines.

However there continue to be a number of challenges with the program:

- Consistency and follow through on the part of the students. A number of committees were formed at the beginning of the year. According to students and project staff, several of the committees didn’t continue. More structure may be needed, along with a student, intern, or staff member who is responsible for directing each committee.

- A sizable percentage of students didn’t turn in homework, or didn’t complete it on time, according to a mid-year summary of student grades. This presents a challenge for program staff.

- Finding the ‘right’ amount of time to spend on the end-of-year exhibition project. This project was allocated more time in previous years, which meant other aspects of the program suffered. However students felt the time spent on the exhibit this year was not enough for them to feel ownership of it.

- The program exists year to year, determined by funding. Staffing is very limited, and there seems to be too much for one primary staff person to do, to successfully run a program for up to 80 students.

Discussion and Recommendations:
Significant changes were made to the program this year. In general, those changes resulted in a more organized and focused program, and returning students generally enjoyed their experiences in EVOLUTIONS. By reducing the emphasis on the exhibit, more time was freed up for career exploration, college preparation activities, and hands on activities like the tadpole project. Students also had many opportunities to visit areas of the museum and hear from professors and graduate students about their work. The students were aware that they were learning valuable skills for college and beyond, like the ability to ask questions/interview professionals, and other skills, including resume-writing, applying to colleges, interacting with new people, doing research, and writing. This balanced approach to program activities, and the variety of activities offered may be tied into the high rate of retention among students.

The evaluator made a number of suggestions:
- If the program is recognized as successful by the Museum, multi-year funding needs to be found for the program. Having a more stable funding base would allow the Museum to ‘grow the project’ and build off the success of the first several years;
- To run EVOLUTIONS with the current model, more staff support is needed.
- The parents represent an important constituency for the continued success of the program. There may be ways to involve them more and take advantage of their support for the program;
✓ Consider setting clear limits around the use of computers, and finding that fine balance between social time and work.

The evaluator concluded that EVOLUTIONS was making a significant difference in the lives of those students active in the program. The combination of learning and social opportunities, along with the provision of a positive male role model impacted students’ attitudes and visions of what’s possible in their own lives. Beyond making friends, they learned valuable skills, which will hopefully ease their transitions into college and the workforce.

INTERNSHIP EVALUATION

In the summer of 2007, EVOLUTIONS received a grant from the H.A. Vance Foundation to pilot an internship program. In total, ten high school interns were placed with seven Yale faculty members for 5-8 weeks (5-30 hours per week). Students were chosen based on age (minimum age requirement of 16), performance in program, grade level and maturity. Following is a summary of post-internship program evaluation results.

Student Survey
Students’ primary interests in pursuing internships include learning opportunity, enhancing college transcripts and an interest in the internship’s science field. All students thought it would be a positive experience going into the internship and most students’ perceptions of science were enhanced.

• “This internship showed me that scientists are really cool people (haha). It showed me that they are just working, just like everyone else. They have fun jobs, and if you go to college you get to have a fun and very cool job.”

Though the internship experience caused some students to consider a science career when they weren’t previously, most students found themselves changing their career interest to something related to their internship.

When asked what they would say to a professor considering hosting a high school intern, most spoke of the opportunity to help students experience real science and guide their career exploration.

• “In my experience, public high school does not prepare students for real lab work, and within the setting of school students may not find science in general very appealing. I think an internship opportunity in the sciences, particularly with a Yale professor, not only fuels the curiosity of students already interested in science, but is a chance for regular students to have an experience that will teach them to love science and be enthusiastic about research.”

When asked to rate their internship experience on a scale of one (hated it) to ten (loved it), all students gave a ranking of seven or above with most rating it a ten.
• “It was the best thing I have done in my life. I LOVED it.”

Faculty Survey
Though most faculty had hosted high school aged interns before, all said that their interns’ performance exceeded their expectations.

• “The students were mature and focused. Honestly, they performed as well or better than some Yale College students I have had in the lab. Their attitudes were great. They were excited to be there and to have the chance to do science.”

When asked to characterize the cost/benefit of hosting an intern (excluding benefits to the intern), most said that the interns gave back more than they required.

• The longer the students stay the smaller the cost/benefit ratio gets.

Though most faculty ranked the broader impact requirements of granting agencies as their primary reason for hosting interns, needing help and getting students interested in their field of study were second. All faculty said they would host another EVOLUTIONS intern. When asked to give advice to other faculty considering hosting a high school intern, they mentioned having a specific project, giving the work context and devoting lab staff to training as primary considerations.
ST. LOUIS SCIENCE CENTER’S

YOUTH EXPLORING SCIENCE (YES) TEEN / CISTL PROGRAM

2003-2004

A Report

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ST. LOUIS SCIENCE CENTER’S
YOUTH EXPLORING SCIENCE (YES) TEEN/CISTL PROGRAM
REPORT

I. INTRODUCTION

In 2002, the National Science Foundation announced a grant award to Washington University in support of the St. Louis Center for Inquiry in Science Teaching and Learning (CISTL). Seeking to improve science learning and teaching across the educational continuum, CISTL goals include rebuilding and diversifying the human resource base that forms the national infrastructure for science education. CISTL partners include 3 institutions of higher education, several school districts, and 5 informal science organizations/institutions. The St. Louis Science Center and the Association of Science-Technology Centers are two of the five informal science entities.

The percentages of minorities pursuing careers in science, technology, engineering, and mathematics fields remain low despite numerous national and local efforts over the past several decades to increase their representation. The same conditions are true, although often times less publicized, for minorities pursuing careers in science education. There is an urgent need for science educators of color across the country; and the high school component of the CISTL pipeline was conceived to help meet this need. In 2003 and 2004, the CISTL high school students were recruited from the St. Louis Science Center’s Youth Exploring Science (YES) Program. ASTC welcomed this opportunity to study and describe the infrastructure of a museum-based youth program that historically had a relatively high college-going rate for its graduating seniors, some of whom continued their work in informal science, even while in college. ASTC anticipates the findings from this work contributing to recommendations for other informal science education programs in which underserved high school youth who are successful in their informal science work with younger children, could receive the information and support to enter college prepared to pursue careers in education, particularly science education.

The purpose of this report is to describe the St. Louis Science Center’s YES/CISTL Teen Program (known locally as Today’s Youth/ Tomorrow’s Teachers or TYT²), as it relates to ASTC’s Today’s Youth Tomorrow’s Educators (TYTE) program and the five strands identified by the Association of Science-Technology Centers (ASTC) as indicators essential for maximizing the career development potential of many science museum-based programs for adolescents. The report is divided into nine sections: I. Introduction; II. Methodology; III. The YES Program (Youth Explaining Science); IV. The YES/CISTL Program; V. The ASTC/ CISTL Connection; VI. Findings; VII. Discussion; VIII. Conclusions; IX. Recommendations. There is also an appendix.

II. METHODOLOGY

A variety of methods were used to obtain a clear and accurate description of the YES Teen/CISTL program. These methods included both individual and group interviews with teens
and staff members, review of program materials and archival records, and direct observations of program activities. ASTC staff and consultant Kathleen Fadigan conducted multiple site visits from May 2003 through November 2004 to collect all of the necessary data. In addition to site visits, ASTC staff members engaged in frequent dialogue with the YES Teen/CISTL staff via phone and email.

The overall goal of the academic year site visits was to observe, document, and reflect on the structure, activities, and interactions, which took place during the Saturday Learning Labs at the St. Louis Science Center in terms of the five strands. Fadigan observed the teens and staff on the following dates: May 10, 2003; February 21, 2004; March 6, 2004; March 20, 2004; May 1, 2004; and June 25, 2004.

During the visits she not only observed the staff and teen participants, but also interacted with them as well. She had several discussions with staff, students, and representatives from the community partners. When needed, she assisted the staff with set-up, teaching, and program support. She also participated in the staff debriefing sessions, which took place at the end of each day. During these sessions, she listened to staff feedback and concerns, and also offered her view as an outsider of the success of the activities and events of the day.

Fadigan first visited the program on May 10, 2003 jointly with DeAnna Beane, director of ASTC’s Partnerships for Learning, with the main objective of getting acquainted with the program structure and meeting the staff members. This happened to be the last Saturday Learning Lab session of the 2003 school year. Observation notes were compiled to determine the best approach for collecting evidence of the five strands.

During the 2004 academic year, Kathleen Fadigan conducted a series of five site visits to observe directly the Saturday YES Teen/CISTL program activities. During each visit Fadigan utilized an Observation Coding Sheet (see Appendix A), developed after the first visit in 2003, to identify when and how the five strands were being addressed by the Saturday Learning Labs of the various YES Teen School-year programs. One observation sheet was completed for each individual activity (Ice Breaker, SCANS, Math Game, Journal Writing (I did not complete observations for this activity since it was self-directed and no set topics were given to teens), and Science Activity) that was observed during the day. Comments and observations that did not directly relate to one of the five strands were recorded at the bottom of each observation sheet. Observations were also recorded during non-structured times when staff and students often interacted on a one-on-one basis.

During a final site visit in November 2004, Fadigan and two ASTC staff members conducted both structured and semi-structured interviews with staff and students. The director and deputy director of the Community Science Department were interviewed together prior to a meeting with the entire YES Teen staff. Then staff members were interviewed in groups according to their specific area of responsibility in the YES Teen/CISTL program. Two staff members, who are also former YES Teens, were interviewed separately about their perceptions of the program’s impact on their own lives. Six CISTL teens were interviewed; three from each cohort (03 and 04). For the student interviews, a nine-page interview guide was utilized (see Appendix B). Each interview lasted anywhere from 25 – 45 minutes.
III. THE YES (YOUTH EXPLAINING SCIENCE) TEEN PROGRAM

History and Philosophy

The YES Teen program, organized and implemented by the Community Science Department at the St. Louis Science Center, is housed a couple of blocks from the main building — in the Science Center’s Taylor Community Science Center building. Started in 1998, the YES program serves as an umbrella for several youth program areas which share common operating principles and which use engagement in science and engineering to build science literacy and to ultimately help participants learn how to make informed decisions about their future educational and career plans. The program annually serves 75 to 97 adolescents ages 14 to 18.

According to the program director, all of the YES Teen Program areas adhere to the following operating principles:

- Participants are ensured an authentic work experience.
- Each young person must have a meaningful relationship with one or more adult staff.
- Staff must be respectful of all students and their families, and students must be respectful of one another.
- The program activities are designed and facilitated in ways to insure that all participants achieve success.
- Students must spend sufficient time with activities that allow them to explore specific scientific concepts before they can introduce them to younger children.
- The design of the programs seeks a synergy between research and practice.
- The program emphasizes understanding science concepts over merely knowing or memorizing facts.

These principles have led to programs that are designed for longevity of teen participation with multiple opportunities for experiences, relationships, and information that lead to informed decision making. In addition, YES Teen Program staff believes that there should be a designated space for the teens to use for reading and daily social and leisure activities. Thus, there is a commitment to maintaining an attractive, welcoming safe space that the teens can decorate and call their own.

YES Recruitment

The St. Louis Science Center’s Community Science Department initially recruits 30 new participants each year through partnerships with several types of community-based organizations, such as churches, outreach centers, and after-school programs. There are presently fifteen existing partners, and the number continues to grow as new relationships are being developed within the St. Louis community. Partners include the Boys and Girls Club,
Girls Inc, YWCA, Matthews-Dickey Youth Organization, Annie Malone Children and Family Services, Christian Services Center, Lighthouse, Adams community Center, Beyond Housing, and the Jackie Joyner Kersey Center.

**Program Organization Structure and Content**

From February through May the group of new teens attends Saturday Learning Lab sessions every other week, a common component for all participants. These four-hour sessions are designed to introduce participants to the overall workings of the YES program, to provide opportunities to explore STEM content, science process skills, and job skills, and to build meaningful relationships with staff and peers. Regardless of the specific YES Teen program area, each of the Saturday sessions followed a consistent, structured schedule, which was always posted in the front of the classroom for students’ viewing. (Table 1)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 10:05</td>
<td>Sign-in</td>
</tr>
<tr>
<td>10:05 – 10:30</td>
<td>Ice breaker</td>
</tr>
<tr>
<td>10:30 – 11:30</td>
<td>SCANS</td>
</tr>
<tr>
<td>11:30 – 11:45</td>
<td>Math Game</td>
</tr>
<tr>
<td>11:45 – 12:45</td>
<td>Lunch</td>
</tr>
<tr>
<td>12:45 – 1:00</td>
<td>Journal writing</td>
</tr>
<tr>
<td>1:00 – 2:00</td>
<td>Science</td>
</tr>
</tbody>
</table>

Job skills are emphasized through use of Youth ALIVE! In the Workplace activities which are based on The (U.S. Labor) Secretary’s Commission on Achieving Necessary Skills (SCANS). Science topics and examples of activities covered include:

- **Classification** – characteristics of objects; how classification helps people understand the world and the relationships between objects; how botanists classify fruits and vegetables
- **Properties of matter** – what is air pressure; does air take up space?; Oobleck and the properties of solids, liquids, and gases
- **Chemical reactions** – observations of reactions; using chromatography to observe dyes; how you know when a gas has been formed; why milk curdles; indicators of chemical reactions
- **Sound** – what is sound energy; does moving air make sound?; constructing musical instruments from bottles
- **Light** – what is light energy; what makes color; what makes shadows; how mirrors work; the properties of light
- **Organisms** – the characteristics of living things; pond water observations; soil and plant growth

Science and mathematics content are consistently presented to the students during each Saturday session. Math games are designed to help students hone their math skills in a fun way. The
science activities span a period of several weeks, allowing students to explore the topic in depth. The science activities offer students many opportunities to develop their science process skills.

Generally, when new participants successfully complete the first segment of the YES program, they are invited to continue their involvement over the summer. Youth are paid for their involvement in professional development and work sessions. Summer sessions prepare youth for working with and teaching science to audiences of all ages, from young children to senior citizens, in the Summertime Science program. Intensive training prepares first-year youth to teach mini-science lessons to visiting groups, which include community agencies, summer camps, and schools.

At the start of the academic year, participants are assigned to new science content program areas within the YES program. After completion of the new teen orientation, the first summer, and the first full academic year, students are provided with additional opportunities to sustain their involvement in the YES program. Students are encouraged to apply for a paid second summer opportunity.

2003-2005 Program Offerings

The 2003/04 program activities were held on Saturdays from 10 am – 3 pm., and two science content program areas were offered to teens, Design-It and Life Science. Currently, there are four program areas operating for the 2004/05 school year. These sessions run from 9 am – 1 pm. (See Table 2 below) Each area serves approximately 20 youth. The program areas are often determined by available grant funding and are subject to change from year-to-year, requiring staff to adjust the curricula.

Table 2

<table>
<thead>
<tr>
<th>Academic Year YES Teen Program Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2003/04 ACADEMIC YEAR</strong></td>
</tr>
<tr>
<td>Design-It</td>
</tr>
<tr>
<td>Development of problem-solving skills through physics, design and engineering projects</td>
</tr>
<tr>
<td>Life Science</td>
</tr>
<tr>
<td>Explorations of habitats through hands-on classification and biosphere activities</td>
</tr>
<tr>
<td><strong>2004/05 ACADEMIC YEAR</strong></td>
</tr>
<tr>
<td>Science Corner</td>
</tr>
<tr>
<td>Independent life science projects which necessitate the use of higher level math, science, and problem-solving skills –conducted in the wet lab and on the outdoor lot across from the Taylor Community Science Center building</td>
</tr>
<tr>
<td>City Technology</td>
</tr>
<tr>
<td>Daily life technologies and math skills</td>
</tr>
<tr>
<td>Yes-2-Tech</td>
</tr>
<tr>
<td>Exploration of green space and DNA in an effort to understand how things grow and mutate</td>
</tr>
<tr>
<td>Design-It</td>
</tr>
<tr>
<td>Development of problem-solving skills through physics, design and engineering projects</td>
</tr>
</tbody>
</table>
Summer opportunities for 2003 and 2004 included positions in the CISTL/ TYT\textsuperscript{2} teen program, working in the St. Louis Science Center in various job positions as floor staff members, or youth could apply for positions as teaching assistants in the following programs: Summertime Science, Science-on-the-Go, Science Squad, and the Adams Elementary School summer program.

In addition to their various job responsibilities, YES teens are required to attend professional development and college preparation workshops. The college prep workshops were conducted every Wednesday throughout the summer. The 2004 summer sessions stressed topics such as making informed decisions, high school course selection, college selection, ACT preparation, filling out college applications, and resume writing. Each participant received a 50-page “College Plan” packet containing worksheets, timelines, and various college prep resources.

Additional sessions and topics, such as e-mentoring, ACT follow-up, and college awareness workshops, were being planned for the 2005 academic year. Students are also able to sign up for an on-line Princeton Review ACT study course. During the 2004 summer, Yes Teen Staff also conducted monthly professional development workshops on three Fridays: June 25, July 23, and August 6. The workshop topics included activities and field trips designed to strengthen the teens’ leadership and communication skills, and building their knowledge of how to find and take advantage of opportunities for their age group.

IV. THE YES/CISTL PROGRAM

The overarching goal for the YES/CISTL teen program is to prepare two cohorts (12 students in each) of St. Louis high school students for college and pre-service programs in science education using the human and physical resources of local informal science education institutions. Washington University serves as the lead institution for the overall grant and the CISTL component. Partnering organizations include the Missouri Botanical Garden, St. Louis Zoo, Tyson Research Center, the University of Missouri – St. Louis, and the St. Louis Science Center. The two cohorts of students were all participants in the St. Louis Science Center YES program prior to joining the CISTL cohorts.

Program Planning

Planning for CISTL began in January 2003. A full-time coordinator was hired in February 2003 to manage the day-to-day planning of the youth activities. The coordinator worked out of the St. Louis Science Center’s Community Science Department since this is where all of the YES teens meet throughout the year. Liaisons from each partner site were also selected to work closely with the coordinator and the youth.

Planning activities consisted of regular weekly meetings to develop the summer activities for the teens, site visits by ASTC staff, and professional development workshops for partnering organizations. Recruitment strategies included liaison visits to the Saturday Learning labs in order to meet the teens and provide them with information about their particular institutions and
the opportunities available at each location. A student application packet was created and
distributed to teens in the spring of 2003 (see Appendix C). Teens were required to fully
complete the packet in order to be considered for a CISTL position. Based upon their completed
applications and their attendance and performance in the YES program twelve teens were
selected for the first summer cohort in 2003 — three for each informal education partner: the
Botanical Garden, Zoo, Science Center, and Tyson Research Center.

The 2003 CISTL cohort spent 7 weeks at each of their respective internship sites. At
each of the sites the students assisted with the various day-to-day teaching responsibilities.
These tasks often included working with summer camp groups and the general public,
researching topics for lessons, and assisting with other departmental-related office duties.
Students were also afforded time on their own to explore and reflect upon each of their
individual sites, often recorded in the form of journal writing. An additional opportunity for the
12 teens comprising the 2003 cohort included attending the 8-day 2004 Summer Institute, hosted
by the University of Missouri St. Louis (see Appendix D for a brief discussion of the Institute).

The 2004 CISTL activities were planned in a similar fashion to the previous year.
However, CISTL staff and liaisons were more aware of and able to work through potential
problems with planning and recruiting. In the spring of 2004, the first-year cohort teens
presented their experiences to the group of potential applicants. Visits by the YES teens to the
CISTL/ TYT sites were scheduled throughout the late winter and spring months, but scheduling
conflicts did not allow the teens to visit all of the sites in advance of the summer program. Prior
to the start of their internships CISTL teens attended two professional development workshops,
designed so that all of the CISTL teens had the opportunity to meet each of the CISTL partner
supervisors and to create a CISTL identity within the group. The workshops also served as an
opportunity for staff to establish the CISTL policies and procedures with the teens and to
emphasize team work. One major difference in the structure of the 2004 program was the
addition of the University of Missouri St. Louis (UMSL) as new site for internship positions for
the youth. UMSL offered five positions in its Bridge Program, which is designed to provide a
stimulating education experience for high school students to help them achieve their full
academic potential.

CISTL Summer Internships

The St. Louis Zoo

In the summer of 2004 there were originally six teens scheduled to work at the Zoo, but 5
were actually assigned there. Two of the five teens were returning interns from the previous
summer. The five teens served as junior camp counselors, helped instructors with classes, and
went on outreach programs. One student helped out in the Children’s Zoo, and another was the
official research assistant for the Zoo’s theatrical interpreter. The students also helped out with
data entry and cataloging for the biofact collection. (see Appendix D for sample teen job
description)
Botanic Garden

The Botanic Garden supervised three CISTL teens in 2004. The students assisted with camp classes and summer programs, participated in the ECO-ACT program in order to experience outdoor activities and interact with students from other high schools in the greater St. Louis area, and interacted with visitors using interpretation carts. Each teen chose an area in the garden that interested them, and then conducted research pertaining to each of the areas. For their research projects, the teens selected the Japanese Garden, the Chinese Garden, and the butterfly house. Throughout the entire summer the teens explored the mission, vision, and value of the Missouri Botanical Garden and the systems that keep it functioning, such as the restoration and public relations departments.

Tyson Research Center

Washington University Tyson Research Center is a 2,000-acre field station that provides numerous unique opportunities for research, environmental studies, preservation, and education. The Tyson Research Center supervised four CISTL teens in 2004. The youth helped out with the summer camp program, worked in the wolf sanctuary, conducted research on endangered species, and studied science education through directed readings. The teens worked closely with college interns and Tyson’s research staff in exploring the wildlife residing at Tyson. As an additional project the teens took on beautifying one of the classroom bungalows with new paint and decorations.

University of Missouri—St. Louis

Four CISTL teens participated in the 2004 UMSL Bridge program. Students took part in a technology program, helped in the animal lab, and explored careers in math, biochemistry. Teens also received training on the college application process, and acquiring financial aid and scholarships. One of the participants worked with Dr. Granger on the campus radio station, learning about how it functions and operates, and the science and technology concepts involved. Another teen worked in the computer department in order to experience first hand what computer professionals do in their daily lives. He has since expressed interest in becoming a computer engineer. Two of the 2004 summer participants completed an AP class at the college during the Fall 2004 semester.

St. Louis Science Center

Five CISTL teens worked with the Science Corner program area during the 2004 summer session. The students served as teaching assistants every Thursday morning, teaching two classes to children from community partner organizations, either in the laboratory or on the outdoor Science Corner site. The teens also served as lab assistants and learned how to operate and maintain the facility. On the outdoor site participants transplanted new plants, and conducted research experiments on the growth rates of plants. Each student prepared a PowerPoint
presentation on a research topic of his/her choice and presented the findings to the rest of the teens.

**CISTL/ YES Participants**

Twenty-four YES teens applied for the 2004 CISTL/ YES Summer Internships—twenty-one were accepted and completed their summer assignments. Of the 21 teens in Cohort 2, nine of them had participated in CISTL/ TYT$^2$ activities as part of Cohort 1 in 2003. (Table 4) Cohort 2 students attended an orientation on May 22, 2004. The first day of internships began on June 21, 2004.

### Table 3  CISTL/ TYT$^2$ Participant Demographic Information

<table>
<thead>
<tr>
<th>Enrollmen</th>
<th>Male</th>
<th>Females</th>
<th>Afr. Amer.</th>
<th>Hisp.</th>
<th>White</th>
<th>Other</th>
<th>9th grade</th>
<th>10th grade</th>
<th>11th grade</th>
<th>12th grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>4</td>
<td>8</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>8</td>
<td>13</td>
<td>18</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>15</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Seven of the original Cohort 1 participants have remained active in the program through the Fall 2004 session. One of the original participants graduated high school in the spring of 2004. Three of the Cohort 2 participants did not attend the Fall 2004 session due to family issues that prevent their participation on weekends.

### Table 4  CISTL TEENS’ SUMMER and SCHOOL YEAR ASSIGNMENTS/Areas

<table>
<thead>
<tr>
<th>Teen Identified by Initials</th>
<th>Summer 03</th>
<th>School year 03-04</th>
<th>Summer 04</th>
<th>School year 04-05</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cohort 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CL</td>
<td>Garden</td>
<td>Design-It</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CC</td>
<td>Tyson</td>
<td>Design-It</td>
<td>UMSL</td>
<td>Science Corner</td>
</tr>
<tr>
<td>AC</td>
<td>On-The-Go</td>
<td>Design-It</td>
<td>Garden</td>
<td>Design-It</td>
</tr>
<tr>
<td>CB</td>
<td>Tyson</td>
<td>Design-It</td>
<td>Science Corner</td>
<td>YES-2-Tech</td>
</tr>
<tr>
<td>DH</td>
<td>Zoo</td>
<td>Life-Science</td>
<td>Zoo</td>
<td>Yes-2-Tech</td>
</tr>
<tr>
<td>EH</td>
<td>Zoo</td>
<td>Design-It</td>
<td>N/A</td>
<td>Yes-2-Tech</td>
</tr>
<tr>
<td>JH</td>
<td>Garden</td>
<td>Life-Science</td>
<td>graduated</td>
<td>graduated</td>
</tr>
<tr>
<td>BR</td>
<td>Garden</td>
<td>Life-Science</td>
<td>Zoo</td>
<td>Yes-2-Tech</td>
</tr>
<tr>
<td>JK</td>
<td>On-the-go</td>
<td>Life Science</td>
<td>Science Corner</td>
<td>N/A</td>
</tr>
<tr>
<td>MT</td>
<td>Tyson</td>
<td>Life-Science</td>
<td>UMSL</td>
<td>N/A</td>
</tr>
<tr>
<td>KW</td>
<td>Zoo</td>
<td>Design-It</td>
<td>Zoo</td>
<td>Science Corner</td>
</tr>
<tr>
<td>MW</td>
<td>On-The-Go</td>
<td>N/A</td>
<td>Tyson</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Cohort 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA</td>
<td>Tyson</td>
<td>Design-It</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KP</td>
<td>Zoo</td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>LR</td>
<td>Tyson</td>
<td>YES-2-Tech</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
V. THE ASTC/CISTL CONNECTION

The Association of Science-Technology Centers (ASTC), an organization whose members include more than 340 US science centers and museums, is dedicated to furthering the public understanding of science among increasingly diverse audiences. ASTC is committed to promoting equity and diversity by helping its members to increase the number of women, people with disabilities, and members of underrepresented ethnic and racial groups who visit and work in museums. These principles and the highly compatible goals of the two efforts provide the rationale for ASTC’s interest in helping the institutions affiliated with the CISTL project to nurture potential future science educators in the St. Louis area.

The impetus for ASTC’S work with the CISTL project is rooted in the lessons learned from its highly successful 1990-2000 national initiative, Youth ALIVE! (Youth Achievement through Learning, Involvement, Volunteering and Employment). The primary goal of the Youth ALIVE! Initiative was to build the capacity of science centers and museums to implement and sustain developmentally appropriate programs for adolescents, particularly youth with fewest opportunities. However, the focus was not specifically on career development. Based upon reviews of the 72 programs involved in the initiative, some combination of the five strands listed below emerged as key elements the informal science programs whose graduates, while in college began to express interest in careers in education. While all five strands were not consistently present in every program that reported these unexpected outcomes, variations of these elements were evident in the youth programs of the St. Louis Science Center and several other Youth ALIVE! Sites. Briefly described, these elements are:

- **Science content**—Successful Youth ALIVE! Programs introduced underserved adolescents to science, technology, and/or engineering concepts through developmentally appropriate and culturally responsive activities which included hands-on science experiences, staff presentations, group discussions, long-term projects and student demonstrations directly related to science center/museum exhibits or to the content of outreach classes where the teens served as teaching assistants.
Job skills—Most Youth ALIVE! Programs, like the YES Teens Program in St. Louis, were developed as work-based programs which offered 14 to 17 year olds from low-income communities opportunities to learn basic job skills, earn money, and contribute to the success of the larger organization. These programs have been quite effective in helping underserved high school students gain experience with skills such as public speaking, communication, writing, punctuality, conflict resolution, resource management, and use of technology. Youth ALIVE! In the Workplace, a work skills manual for museums, based on the US Department of Labor’s Secretary’s Commission on Achieving Necessary Skills (SCANS) Report, has served as a useful tool for museum-based youth employment training programs.

Teaching and Learning—Because most of the programs involved the teens in educational activities with younger children the program staff were intentional in helping the adolescents to understand some of the most basic tenets of engaging their audiences in informal science learning. While assisting museum visitors and younger children with science activities, many of the program participants discovered that they enjoyed helping others learn.

While the first three elements were well developed across most of the 72 programs by the close of the national initiative, the last two were present in some, but certainly were less predictable:

Educational Planning—Prior to and during their high school years, students from low income families frequently lack access to the necessary (and timely) information and ongoing guidance for preparing for college. Although 70% of the youth were from low-income communities and over-burdened urban schools, program staff—unless prodded—tended not to be aware of the need to help students connect academic and science center lives. However some Youth ALIVE! programs, especially St. Louis’ YES program, were intentional in assisting underserved students in completing high school and planning for and getting into college. Strategies culled from these programs—-but not yet organized into a cohesive component across all programs— included staff reviewing report cards, contacting the high schools, assisting with academic goal setting and course selection, visiting colleges, SAT/ACT preparation, tutoring sessions, financial aid sessions for parents and students, and completing college applications. In most cases, however, the consistency and structure of these kinds of activities was nebulous.

Career Awareness—Depending on local resources and staff creativity, some Youth ALIVE! Programs introduced youth to the wide variety of STEM-related career options, but very few have seriously focused on careers in science education in either formal or informal settings. However, several, including the St. Louis Science Center are now hiring program alumni as science education staff.

ASTC’s Today’s Youth/Tomorrow’s Educators (TY/TE)

These five elements provide the foundation for ASTC’s national pilot program, Today’s Youth/Tomorrow’s Educators (TY/TE), which includes the St. Louis Science Center’s YES Program among its pilot sites, all of which specialize in training urban teens to facilitate science activities for younger children. The ultimate goal of TY/TE is to help youth program participants...
acquire—through a series of structured, year-round opportunities integrated into their youth programs—the skills and experiences that will make possible successful pursuit of careers in science education. ASTC’s pilot program was launched with a Summer Institute during CISTL’s first year, with the participants being the 12 Cohort I CISTL Teens, 39 teens from six other science centers and museums, and their program leaders. (See Appendix E).

VI. FINDINGS

Summary of Academic Year Observations

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Strands Addressed through Saturday Learning Lab Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Saturday Learning Lab Activity</td>
</tr>
<tr>
<td></td>
<td>Ice Breaker</td>
</tr>
<tr>
<td>Science Content</td>
<td>X</td>
</tr>
<tr>
<td>Teaching &amp; Learning</td>
<td>X (indirectly through staff modeling)</td>
</tr>
<tr>
<td>Educational Planning</td>
<td></td>
</tr>
<tr>
<td>Career Awareness</td>
<td>X</td>
</tr>
<tr>
<td>Job Skills</td>
<td>X</td>
</tr>
</tbody>
</table>

All of the YES Teens met for the Saturday morning sessions as a whole group with all of the staff present in the room working together. One staff member served as the lead facilitator of each morning activity. Supporting staff sat at each of the tables with groups of teens in order to ensure that the participants fully understood the activity and remained on task. After the lunch break the whole group divided into smaller groups based upon their assigned science area (i.e. Design-It or Life Science). Three or four staff members worked together as a team to facilitate each of the science activities. The following observations were documented using a rubric based on the strands identified by ASTC for TYTE. (Table 5)

Science Content
Science and mathematics content were consistently presented to the students during each Saturday session. Math games were designed to help students hone their math skills in a fun way. The science activities spanned a period of several weeks, allowing students to explore the topic in depth. The science activities offered students many opportunities to develop their science process skills. The science activities offered students many opportunities to develop their science process skills. The nature of the activities was somewhat structured and did not
always allow much deviation from the original lesson plan. On one hand, these lessons allow an inexperienced staff or staff with a weak science background to easily implement the module. On the other hand the structure does not allow students to fully construct their own learning by posing their own questions to investigate.

The ice breakers and SCANS activities sometimes included science or math concepts. At times it was the students who brought the science into these activities, often recalling their previous experiences in the YES program. Additionally, after school tutoring is currently being arranged for students in need of assistance with science and math subjects.

Job Skills

Participation in the Saturday Learning Lab Sessions is included in the teens’ job descriptions and this strand received the most attention. The SCANS activities, and often the ice breakers and science activities, required students to discuss, develop, and put into practice a wide variety of valuable job skills. Such skills included using I-messages, conflict resolution, understanding organizational systems, improving time management, allocating resources, identifying personal skills, and improving communication through public speaking.

Teaching and Learning

The observers did not observe YES Staff members were not heard directly talking directly to teens about teaching and learning methods or inquiry with the participants during any of the site visits. Upon inquiry during the third visit, staff made it clear that these issues are thoroughly covered during the late spring when the first year students begin their preparation for their summer teaching experiences.

Staff frequently employed instructional strategies like cooperative learning and student-centered activities as they modeled inquiry-based teaching methods. Staff members were skilled in posing questions to assist students with critical thinking.

Educational Planning

With the exception of posting an ACT word and math problem of the day on a bulletin board in the building near the classrooms, the staff did not directly address issues of college planning with the teens during the Saturday Learning Lab sessions. College preparation is a major focus during the summer sessions. Staff reported that during the school-year college preparation discussions frequently take place one-on-one with the staff members through phone conversations with the teens and their school personnel and family members. Students informally discuss their plans with each other and staff sometimes before the morning sessions begin, at lunch, and after sessions are finished. For example, one student was observed sharing her most recent report card with a staff member. Her grades had gone up since the last marking period.

Historically, the YES Teen program has had a strong educational planning component in comparison to other programs of its type. Archival records revealed that during the YES Teen program’s infancy the program supervisors noted that the majority of the participants had little or no contact with their high school guidance counselors. The program staff responded to the need by developing and implementing an intensive summer college preparation component that
included a college fair, completing college applications, and entrance exam preparation. The staff established expectations for youth to move successfully toward acceptance into college and provided the youth with the tools to achieve their goals. Although not as structured as originally intended, The YES Teen staff continues to utilize several parts of the original college preparation component. New features have also been added, such as the weekly 45-minute writing component designed to aid students in completing their college application essays and improve their overall writing skills. Staff listed the following 2004-05 program elements as supportive of educational planning and spanning all four YES Teen program areas:

- 45-minute writing component each week (summer and academic year)
- 45-minute technology class during each Saturday Learning Lab
- Professional Development Workshops (year-round)
- Journal Writing
- Mentor Magic
- Campus Visits
- ACT Workshop
- Use of the Whiteboard to post ACT prep Word of the Day and Math Problem of the Day

With the implementation of the CISTL/TYT² program, the YES program expanded its overall focus on college preparation beyond the summer component. The YES Teen staff maintains a personal file for each CISTL student. These portfolios include the student’s original application form, the YES/CISTL² application, the student’s resume, copies of letters sent by the YES staff to the participant’s guidance counselors, principals, and science teachers describing the student’s involvement in the program. These letters are used to open communication between school staff and the YES Teen leaders to ensure that the youth reach their full academic potential. Other documents, such as report cards, ACT practice test scores, and acceptance letters from other programs and schools, are kept on file in order to monitor students progress and to encourage the teens to continue expanding their academic portfolios for future endeavors.

The YES staff, assisted by ASTC, has also created a CISTL/TYT² Planning Framework. This spreadsheet document tracks 20 different needs and objectives associated with the program and the teens. Staff maintains detailed notes for each objective. Objectives relating to students, staff notes on each individual student and the actions taken to fulfill the objective pertaining to him or her. For example, developing individual education plans for each teen is an objective. On the spreadsheet, each teen is listed along with entries noting any college materials sent, conversations with teachers or parents, and career plans stated by the student. Each entry is unique to the individual student. Regular review of this document ensures that the YES/CISTL program is on the pathway to achieving its goals. (See Appendix F).

**Career Awareness**

We observed minimal discussion of careers in science, math, or science education, or of career planning was observed during the Saturday Learning Labs. Again, staff reported that this usually takes place in the summer and on a one-on-one basis, but more discussion of the various types of careers in the sciences could be incorporated into the science activities.
Currently, to help students become more knowledgeable of career possibilities, the YES Program draws from the volunteer professionals who signed up for the Mentor Magic program. This is in addition to the CISTL summer internships which provide exposure to careers in informal science education through informal apprenticeships. Through conversations with the CISTL Teens it became clear that by working closely with staff in these informal science institutions, they could easily speak of positions that would interest them as adults.

**Exhibit V-2**

**Summary of Interviews**

Six participants (5 males and 1 female) were interviewed on November 20, 2004. The teens ranged in age from 15 to 17 years old. One student is a sophomore. Five students are juniors. Each of the youth is enrolled in a different high school in the St. Louis area. The teens have been participating in the YES program for a minimum of 2 years. Two of the teens stated that they have been actively participating in the YES program for four years. All six students are currently enrolled in at least one science and mathematics course. Four of the six are taking an honors or AP-level course this academic year. Students listed the following classes as their most difficult courses this school year: advanced or honors algebra (2), geometry, AP psychology, physics, and -ecology. Five of the six students participate in school-based extra-curricular activities, and three of the six youth take part in community-based out-of-school time activities.

This section summarizes the findings based on the interviews that were conducted in November 2004.

**2003 Summer Institute Experience**

Three of the six interviewees were from Cohort I and attended the 2003 Summer Institute. All three teens stated that participating in the summer institute made them think about their future. They realized the need to begin planning and focusing now rather than later. Two of the three specifically mentioned the impact of the ACT portion of the program.

At the institute the students learned about college life in terms of what it was like to live on campus; however one of the students recognized that the institute experience was more structured for them than actual college life would be. The respondents remembered details from the Summer Institute about many of the tasks of getting ready for and applying to college such as researching the requirements for acceptance into each college, whether or not a college has the major you’re interested in, preparing a resume, and the costs.

**College Plans**

All 6 students interviewed said that they wanted to go to college, and each was able to name at least one or two schools that had set their sights on. All six students know what area of study they wish to pursue. Three of the six youth were interested in a future career in science (zoology, computer science (2)). The other three students are interested in pursuing careers in law and business. All of the youth have used the internet to find out information about the specific colleges they are considering, in addition to gathering information from family...
members, college fairs, college representatives, college brochures and books. None of the six teens were familiar with the Common Application for college.

When asked what information they had gathered about their top choice school, the youth stated that they had looked into the GPA and ACT scores required, whether or not the schools have a quality program and course offerings in the major areas of study the youth wish to pursue, size and atmosphere of the campus, and sports teams they were interested in joining (football and basketball).

Although only two teens stated that they have been updating their personal portfolios, two other teens said that they have items that they soon plan on adding. None of the teens had completed their sample college application essay. One student expressed that she was working on improving upon her writing skills before completing her sample essay. Two other students are compiling notes and thinking through the types of topics they plan on writing about.

Each of the students noted that they had family members or friends who are currently enrolled in college-level courses or had previously taken college classes. Three students named a parent. Three students mentioned siblings. One student mentioned the YES staff.

Knowledge of the College Preparatory Process

The interviewees were each able to accurately describe the steps a person has to take to get into college. The students listed from 3-6 detailed tasks that must be completed as part of the process. Each student mentioned the importance of standardized test scores, such as the ACT. With the exception of one student, each participant stated that they have completed at least three of the steps that they listed. Three of the participants have completed practice ACT tests or are in the process of studying for the test.

ACT/PSAT/SAT Testing

Five of the students interviewed took the practice ACT in August 2004 in a YES program session. Their scores ranged from 12 to 24. Three of these students first encountered the practice ACT at the 2003 Summer Institute, where they scored in the 18-20 range on a modified version of the test. An additional student took a practice test in school and scored a 21. The scores dropped between the first and second practice tests for two students. They acknowledged that the lower scores were due to lack of sleep the night before and from distractions from peers. Two of the students’ scores increased. They claimed that they were more prepared, more confident, and more familiar with the structure and content of the test the second time around. Some of the terms used to describe how the students felt while taking the first practice ACT test include, scared, tired, unprepared. They described the test as difficult and long. Five out of the six participants stated that the ACT practice test affected what they did later in school. The students realized the need to study more and be more focused and serious about school. For two students it meant finding out more about the content of the ACT tests and practicing more.

The five students who are currently juniors plan on taking the ACT that will be submitted with their college applications by the end of April 2005. The student who is a sophomore will take the test in the fall of 2005. All but one student (a junior) have begun to prepare for the ACT exam. Only two students have taken the PSAT test. One student missed the cut-off date at
school. The three other students who did not take the PSAT test stated that nobody at their
schools had talked to them about when and why the PSAT exam is offered.

YES/CISTL Program Experience

Five of the six interviewees stated that they had heard of TYTE. All of the students were
able to describe the CISTL program in some capacity. The students stated that the purpose was
to help them become more familiar with different workplaces and fields, to allow them to be role
models for other children, to gain an increased level of responsibility, to see other things and
places in the community, and gain experience. Each of the students correctly identified the
CISTL partners. When asked to describe their CISTL job responsibilities, students listed tasks
such as interpreting to people of all ages, helping to feed animals, assisting with classes, leading
projects with camp kids, and designing web pages.

Four of the six students agreed that their job responsibilities were clearly explained
before beginning the internship. Each student said that they helped others learn in both their
CISTL and YES jobs. All of the students felt that they had adequate support and supervision to
do their jobs.

When asked what they currently do in the YES program, each participant described their
teaching and learning experiences. The students expressed feelings of responsibility and
encouragement. The students felt that their supervisors listened to them, and frequently offered
assistance. One student discussed how his supervisor always asked how his day went. Another
student talked about how they were able to be creative with their ideas, and how their supervisor
not only supported but also utilized the intern’s ideas. All of the students stated that they like
science, and they enjoy helping others learn science.

Each of the students felt that their work during the summer contributed to the overall
work of their particular assigned partner site. All of the students stated that they felt that they did
help out in some way. Many of the students described how they helped children and adults learn
about science, and how their presence made the summer program more enjoyable for children.
When asked what would make their job better, the students provided a wide range of answers.
One student expressed an interest in working more hours/more time, perhaps part-time during the
school year. A student, whose assignment was outdoors, would have appreciated more indoor
activities, although “everything else was cool.” Another participant felt disconnected from the
rest of the YES teens. She thought that it might be useful to stay better informed about what the
CISTL teens are missing while working at the partner sites. One student requested a more kids in
the group (10 rather than 5). Two participants thought the program was fine the way it was.

If they were to look back over their CISTL experience, the teens stated that they would
remember things such as gaining an appreciation for nature, witnessing the birth of animals, and
working with the kids. When asked to rate their job performance on a scale of 1 to 5, with 5
being excellent and 1 being poor, the students’ ratings ranged from 3 to 5. The two who gave
themselves a 3 justified this because of shyness, and room for growth since the job took awhile
to get used to.
Career Plans

The students listed an interest in the following careers: zookeeper or animal researcher, business in networking or programming, a lawyer and then eventually a judge, mass communications, business administration, and programmer. When asked if they would consider a career helping others learn science in the science center or after school programs in the community, four of the six students said yes. One of the students who said “no,” claimed that she probably could, but had her mind made up on a different career. All but one student stated that they would consider a career helping others learn in a school, preschool, elementary, middle, high school, or college. The individual who said “no” stated that she did not want to “deal with kids.”

The interviewees were asked if they would be interested in any other kinds of work in the science center, zoo, botanical gardens, or a research center. One student said “No”. One student was unsure. And the remaining four said “Yes”. Of the students who said “Yes,” one student would like to be a zookeeper or the CEO of a zoo, and another students said he would be interested in science center or botanical garden management. One student said he would consider a job in an informal science institution if they paid well. Another teen said he might consider working at the science center teaching kids about science at his own booth with hands-on activities.

Resources

This set of questions inquired about students’ perceptions of the people and places that have helped them learn about college. Students were asked if something or someone in school, at home, in the YES Teen program, and in the CISTL program has made them think more about college. All six teens stated that someone in school has made them think more about college. The students mentioned teachers, grown-ups, friends, guidance counselor, and the general school atmosphere. All of the students mentioned influences from home such as parents, aunts, and siblings, and influences from the YES program such as their supervisors, the CISTL Coordinator based in the Science Center, the information posted on the boards, and the former participants who have gone off to college. All of the students listed influence from the CISTL program, specifically their site supervisors, the CISTL Coordinator at the Science Center, the CISTL Liaison at Tyson’s Research, and people in the web site office. Students said they were able to ask a lot of questions about college during their CISTL experience.

Students were also questioned about the likelihood of approaching a certain person or place in order to get answers to questions about help with school (Table 6) and preparing for college (Table 7). The participants are most likely to approach teachers, family members and friends to get help with school. For assistance with college preparation students are most likely to ask for help from teachers, parents or family, and school counselors.

Table 6

<table>
<thead>
<tr>
<th>Likelihood of requesting help with schoolwork</th>
<th>Very Likely</th>
<th>Somewhat likely</th>
<th>Very unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher at school</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Parent or family member</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>YES Team leader</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>School counselor</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>
Other 2 (friends)

| Table 7
|
| --- |
| Likelihood of requesting help with college preparation |
| | Very Likely | Somewhat likely | Very unlikely |
| Teacher at school | 5 | 0 | 1 |
| Parent or family member | 5 | 1 | 0 |
| YES Team leader | 2 | 3 | 1 |
| School counselor | 4 | 2 | 0 |
| Other | 2 (friends) | 2 (friends, college) |

### Summary of Staffing Observations & Staff Reflections on the CISTL Experience

The most noticeable feature about the YES Teen/CISTL staff is its numbers and its commitment to the young people. There were fourteen full and part-time staff members working with the youth in the Fall 2004 Saturday Learning Labs. (see Appendix G). During each of the site visits, several staff members were present to greet the teens as they arrived at the Community Center. Often times, staff and teens worked together to prepare a morning snack for the rest of the group. Staff members were seen cooperatively setting up their individual classrooms and attending to any last minute preparations for the day’s activities.

At the start of each session all of the staff members joined the students in the ice breaker activity. Although only one or two staff members led each activity, all of the staff actively participated in the activities alongside the teens. During the whole group activities six–eight teens sat at large tables with one or more staff present at each of the tables. This configuration ensured that the students remained on task and clearly understood the instructions for the activities. Staff were frequently observed posing questions to the teens to facilitate learning.

Within each of the four YES Teen program areas each staff member is assigned to specific group of students. The staff are responsible for monitoring each of their students’ progress through observations and discussions with the teens. Staff members are also required to read each of their designated students’ journal entries each week, and provide written feedback directly in the journals. Occasionally YES Teen staff seemed to run the risk of being stretched so thin by their individual programs and their assigned teens, that they were not necessarily attuned to the needs of their colleagues working in other YES Teen program areas.

At the close of each Saturday session all of the staff members met for a debriefing meeting. Taking turns, each staffed presented their view on the success of the day’s activities. Staff reflected on what went well and what could be improved in the future. Staff also discussed individual students’ behaviors and noted any irregularities in students’ attitudes or levels of participation. Staff commonly shared ideas and made suggestions on how they could better support the teens and each other.

The program director described her goal for the way staff approach this work as a quest for synergy between research and practice and staff was observed making constant use of the department’s extensive professional library. In addition their professional development days, staff meets weekly to discuss any developments related to the teens and to reflect on progress of
the Saturday classes. Teens’ common academic needs are identified and staff engage in group problem-solving.

Professional development for staff is ongoing. Outside professionals are often hired for the student professional development days. When this occurs the YES Teen program staff, as well as the teens, benefit from the expertise of the outside consultants. The YES Teen staff are exposed to the expertise of the staff from the partnering informal (and formal) organizations. They attend conferences and workshops at the local, regional, and national level. Many print and electronic resources are available to the staff in the Community Science Resource Center. In addition to science trade books, materials for informal science and mathematics programs, and books on youth development, the professional resources include titles like Social Learning Theory (Bandura, A); Perspectives in Object-Centered Learning (Paris, S) When, Where, What, and How Youth Learn: Blurring School and Community Boundaries (Pittman, K et al); Children in Danger: Coping with the Consequences of Community Violence (Garbarino, J et al); Lessons without Limit; How Free-Choice Learning Is Transforming Education (Falk, J et al); Cognition in Practice: Mind, Mathematics and Culture in Everyday Life (Lave, J); and The Design of Everyday Things (Norman, D).

Through personal interviews and group discussions staff offered their ideas and reflections. During the group interview with YES Teen/CISTL staff, the challenge of working with other CISTL partners for the first time came up. The following observations were shared by YES Teen staff who worked with the CISTL Teen Summer Internship Program:

- It was a major challenge to work with staff (from informal science institutions), who lacked sufficient prior experience with urban teens, and therefore approached this work with a set of counterproductive assumptions.
- Before the program began, all involved adult staff should have gone through an appropriate professional development program; and sufficient time should have been allocated for all staff at each partnering institution to develop strong programs with meaningful (authentic) activities for their summer interns.
- Some of the YES staff perceived a few of the staff from partnering institutions as seeing little benefit to having the CISTL Teens interns. Therefore YES staff felt that the teens assigned to those individuals may not have been afforded the same high quality experiences as their counterparts at other partnering sites.
  - Because the CISTL Teens returned to the Science Center as their “home base”, even during the summer, the YES Teens staff became acutely aware of those who worked well with the teens, especially the first summer.

When asked about the qualities of CISTL staff who were most successful with the teens, YES Teen staff said the most successful people:

- Held belief that the institution should be a learning place for the teens
  - Did not set limits on what teens could do
  - Were creative in looking for and building allies who could help assure the teens meaningful work
  - Used multiple strategies for engaging the teens
Were willing to admit making a mistake
Were allies/advocates for the teens
Were open, inclusive, patient and held high expectations

Staff who were least successful with the CISTL Teens were described in the following way:

- Were rigid
- Held unrealistic expectations
- Provided no mentoring or nurturing
- Had poor communication with the teens
- Made inappropriate job assignments
- Provided unstructured jobs, reflecting no planning
- Offered the teens little or no job supervision.

VII. DISCUSSION

At the start of the YES/CISTL program, the YES Teen Program Director compiled a list of indicators of success for the TYT² component of the CISTL program. This list contained the following seven factors necessary for a successful after-school program for teens:

- Longevity of teen participation
- Students pursuing post-secondary education
- Regular and meaningful participation of adults
- Purposeful, long-term educational experiences for youth
- Adults knowledgeable about the developmental needs of youth confronting multiple risk factors in their lives
- Sustainability and expansion of youth programs beyond the grant at all (partnering) informal learning institutions
- Serving as a blueprint for developing after-school programs in other institutions and locales

Based upon the findings in this report, there is evidence that the first five of the indicators of success are being achieved. These five factors are aligned with the personal and social assets, which contribute to the well-being of adolescents and a successful transition to adulthood, recommended by the National Research Council’s report, *Community Programs to Promote Youth Development* (2002). The last two factors are related to the later stages of the CISTL/TYT² grant and are not relevant at this time. The first five factors are discussed below.

Longevity of teen participation
Young people enter the YES Teen Program as young as age 14 and many remain through high school graduation. In addition it is common for alumni in college to return as part-time or temporary staff who also serve as college-going role models for YES Teens.
The six youth interviewed have had a sustained, long-term involvement in the program. Speaking with the teens, they had no intention of leaving the program at any time in the near future. The program has become a regular, structured part of their routines. Eighteen of the twenty-one Cohort 2 teens have been involved in the YES Teen program for two or more years.

Percent of students pursuing post-secondary education

Several of the YES Teen/CISTL activities are designed to increase participants' eligibility for post-secondary education. Students are improving their test taking skills, receiving guidance on course selection, expanding their vocabulary, and honing their writing skills. To date numerous YES Teen program participants were accepted into post-secondary education programs. By the Spring on 2005, one Cohort I CISTL teen (a male) had been accepted to a local university to pursue a degree in science education.

Although it is impossible to draw conclusions about the entire group of youth in the YES program, the students who were interviewed are clearly aware of the importance of taking a greater number of math and science courses in high school, as well as the importance and details of the college preparation process.

The interviewees have each taken at least one practice ACT test, and all of them are in the process of preparing for the test with scores that will be submitted with their college applications. In terms of their descriptions each of the students is taking the necessary steps for college preparation and acceptance. During their CISTL summer internships the teens gained valuable experiences in the field of science education and in the workplace in general. All of the youth had very positive things to say about their CISTL experiences, and most would even consider pursuing careers in science education. It is likely that these youth entered the CISTL program with general ideas about their future careers. Their CISTL experience helped to refine their choices. For example, one particular student who worked at the Zoo is now interested in becoming a zookeeper or working with animals in some capacity. Other students had more strongly formed ideas about their future, and the CISTL experience allowed them to strengthen their original career plans. One student’s plan for completing law school and eventually becoming a judge was based upon personal experience and a desire to help others. She was able to reaffirm her choices.

It is clear that over the past nine years, the St. Louis Science Center has tried and succeeded with a number of strategies for helping YES Teens complete high school and move on to college. The greatest degree of consistency appears to have been in the initial YES Teen Program years when the work was supported by Youth ALIVE! technical assistance and funding.

The YES Teen program was created at a time when existing Youth ALIVE! programs – having mastered design elements that addressed the physical, intellectual, emotional, and social development of adolescents from urban communities - were being asked to give more attention to two specific areas: educational planning and work skills preparation. This national focus, combined with the vision of the YES Teen director may explain the consistency with educational planning during the first two to four years of the program. It is important to note that in recruitment, Youth ALIVE! programs were expected to avoid creaming by seeking out young
people most in need of support and these were generally not the “academic stars” of the local schools.

Having a viable plan for sustaining a science center or museum’s work when the grant ended was major requirement of Youth ALIVE! grants received after 1995. In seeking new funding from a wide variety of sources, the St. Louis Science Center, like most Youth ALIVE! institutions, seemed to have retained the core elements that most easily aligned with the mission of the larger institution. Therefore, the intellectual and social activities largely centered not on preparing youth for college, but not on helping students with life skills and on preparing them for the work that they would be doing in the exhibits, enrichment classes for younger children or outreach programs – introducing science concepts and activities to others,

Perhaps with staff attrition and post Youth ALIVE! funding that supported new objectives as well as aspects of the original program model of teen involvement, enrichment, and employment the subsequent YES Teen programs lacked the experienced staff, time, technical support and other resources needed to sustain the earlier intensity of focus on college preparation. However, despite absence of a formally institutionalized year-round infrastructure for college preparation and career awareness with a set of activities consistently evident every year, staff encouragement has been a constant and there have always been some YES Teens making the decision to go to college. In fact, in May, 2003, college was identified as a goal by all of the Cohort I CISTL Teens.

Any effort to encourage underserved high school students to prepare for careers in education - particularly science education - must be fully intentional about addressing the issue of what must be done to prepare these students for college. The St. Louis Science Center’s involvement in CISTL and ASTC’s Today’s Youth/ Tomorrow’s Educators has drawn staff attention to the critical need for reviving some of the earlier, most successful YES Teen Program strategies for preparing students for college. The program director recently articulated her intention of trying to secure the resources needed for a staff person whose time is dedicated to fully developing and institutionalizing this component of the YES Teen experience. Currently, however, like staff at other pilot sites for ASTC’s Today’s Youth/ Tomorrow’s Educators, the YES Teen staff is reviewing old and designing new program activities designed to emphasize academic performance, appropriate course selection, college selection research, financial aide for college, and ACT/SAT preparation.

Regular and meaningful participation of adults

A total of fourteen adult staff are divided among the four school-year YES Teen Program areas serving 83 students, 14 to 18 year old. Each of these adults works closely with one or more of the 17 Cohort I and II CISTL Teens who participate in these school-year programs. Two of the staff members have risen up through the ranks of the YES program to become leaders in the program. This works well for other staff and for the teen participants since the two YES graduates can serve as close-in-age role models for teens. They can also provide a different perspective for the other staff. The high staff to student ratio ensures that each participant receive individual attention and guidance.
Also a critical factor for programs for underserved youth, is the degree to which the composition of the staff in terms of race and gender mirrors that of the youth. The majority of the staff are African American, as is the majority of the participants. There are five male staff members (38%). This number closely mirrors the 36 percent male enrollment of CISTL/TYT2 2004 cohort.

**Purposeful, long-term educational experiences for youth**

In their summer CISTL jobs, teens appreciated being given a high level of responsibility and having their creativity and ideas acknowledged. The teens who were interviewed desired to be treated as adults and given meaningful work to do.

In addition to the enriching CISTL summer internships, 17 CISTL students are assigned during the 2004/05 school-year to one of the four YES Teen programs. The activities in each program area are designed to last over a period of several weeks, allowing youth to build a strong knowledge base.

**Adults knowledgeable about the developmental needs of youth confronting multiple risk factors in their lives**

Staffing issues continue to plague education departments of science centers, zoo, gardens, and aquariums across the country. Low pay, long hours, and weekend schedules often result in a high turnover rate. The staff who stay often do so for the love of the type of work that they do and for the rewards of teaching science to children.

Working with urban adolescents and the communities in which they live in informal settings offers additional challenges. Staff may sometimes lack experience with this population, or worse, may underestimate urban teens’ potential for success in science. The Community Science Department at the St. Louis Science Center is not only aware of these potential hazards, but also takes a proactive stance to overcoming this sort of challenge.

The Yes Teen staff members hail from all walks of life. The diverse staff possesses many different areas of expertise and training. As a group, the staff reflects training and/or experience in science, education, community organizing, and social work. All of the combined staff talent works together to create a cohesive well-rounded program for adolescents.

**VIII CONCLUSION**

It is difficult (and possibly unwise) to isolate the CISTL/TYT2 activities from the YES Teen program. On its own, a single summer experience may not be sufficient to prepare underserved youth for the future and certainly not for careers in science education. If other institutions wish to develop similar programs, it is likely that they will need to adopt or adapt many of the principles and practices the YES Teen program. In preparing students for CISTL internships at partnering organizations, the teens have spent a great many hours participating in several significant activities that address the five strands for success.
The St. Louis Science Center is definitely putting into place practices that open up college as an option for its YES Teens. One question that must be faced by CISTL, ASTC and all pilot sites for the Today’s Youth/ Tomorrow’s Educators, is “How do we help our young people enter college interested and able to continue their formal education in the sciences?” Given the need for science educators, particularly in urban communities, and given the need for young people to explore new avenues in their quest to discover where they best fit in society, is there a way to maximize the experiences in programs like YES Teens so that young people make decisions to pursue careers in education, particularly science education, earlier in their college lives? Or is the reality that there is a natural tendency to explore other, more unfamiliar possibilities before committing to preparing for a career in education. After all, education is the one field about which every student already knows something. The challenge is to raise the appeal level of a career in education, a field in which young people have been involved all of their lives. They have spent many years with educators of varying levels of quality and enthusiasm.

A formal study of alumni of one Youth ALIVE! program revealed that 52 of the 103 participants surveyed changed their career plans after graduating from high school (Fadigan & Hammrich, 2004). Several of these participants, after studying or working in various science-related fields found their way back to helping others learn and grow as a career choice. These “twenty-somethings” can be found directing youth programs, teaching in elementary schools, and pursuing graduate degrees in education while working part time in the science museum.

Finally, the question of the value added by CISTL must be raised. Clearly, the Science Center’s YES Teens Program maintains a critical mass of participants who are involved in several significant common core activities, despite their assignment to diverse programs and jobs related to the Science Center’s mission. These core activities address some of their adolescent development needs, work skills issues, and preparation for their futures. These young people may be the first in their family or the first on their block to spend so much of their leisure time in a science museum, but they are not going through this experience in isolation. They have a group of peers who, like them, have ventured into a new world: informal science education. Like all adolescents these young people are trying to discover where they belong in the world and how they can contribute to it meaningfully. CISTL participation added to their sense of belonging to a rather cohesive group that is moving in a positive direction.

The Science Center’s YES Teens Program provides a creative array of opportunities from these young people to develop skills that will support their transition into adulthood. Moreover, some of the activities and mentoring relationships developed through the internships offered by CISTL’s consortium of informal science institutions definitely expanded the participants’ awareness of possible places for them in the adult work world.

CISTL, in addition to the opportunities to facilitate informal science learning in varied, science-rich environments, indirectly reinforced ASTC’s call for renewed attention on the importance of helping students be more concrete in their thinking about and planning for college. Obviously many things will happen to a young person in the years between joining the YES Teen Program at age 14 or 15 and achieving a degree in science education. That is all the more reason for the development of a well thought out map, perhaps with multiple routes that a student
may take to arrive at this goal. The YES Teens Program has reinstituted a focus on the first, and possibly most critical, stage of that journey: college preparation and all that it entails.

IX. RECOMMENDATIONS

There are several recommendations we feel will help to ensure the success of the program and the participants.

**Inquiry**

Designing and implementing inquiry-based science investigations requires substantial amounts of planning and background knowledge on the part of the instructor. Inquiry based activities allow for student input as to which science questions will be pursued, and thus creates a greater sense of ownership and interest on the students’ part. It is important to encourage staff to continue their own science education professional development so that they can improve upon their existing skills, background knowledge and learn about inquiry-based activities that have worked well for other educators. It is possible that some students in the YES program would have become more involved if they were able to follow their curiosities in a more inquiry-based setting.

**Team-building**

Other professional development areas for staff cannot be neglected, since the success of the program relies so heavily on the student-staff relationships. Diversity and team-building activities and discussions with staff need to be on-going. These key areas are crucial so that the staff can continue to support and assist each other. Opportunities for staff members to identify the interrelatedness of their individual program responsibilities may help to strengthen the broader mission of the program. Discussions of the implications of how the content of one program impacts each of the other program areas may prove useful for staff as well.

**College Preparation**

Each of the staff needs to be knowledgeable about the strategies that will aid in preparing youth for post-secondary education. The critical skills developed through SCANS activities not only contribute to job readiness, but can also impact students’ success in school, and are used regularly by staff throughout the YES program. All of the other strategies that have been utilized
from time to time in the past should be identified so that they can then become an institutionalized part of the curriculum. Periodic check-ins are necessary to ensure that the strategies are regularly addressed and the teens are on track with the college preparation process. These check points need to include a standard and agreed upon means of tracking the teens’ progress.

**Year-Round Internships**

If the partnering CISTL organizations’ wish to have a greater impact of the youth’s success, it is recommended that these organizations expand their contact with the teens to encompass the academic year as well the summer. In doing so, the teens will have a greater opportunity to form meaningful relationships with the staff and their institutions. Year-round internships can provide increased student involvement in and commitment to the institutions’ education programs. A positive year-round experience could have a greater impact on a teen’s decision to pursue a career in science education. Opportunities for teens to discuss and experience first-hand numerous career options in science and science education will aid students in narrowing down their career choices – the more the better.

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Commission on Behavioral and Social Sciences and Education. (2002). *Community Programs to Promote Youth Development*. National Academy of Sciences, Washington, DC.

Association of Science-Technology Centers
YouthALIVE! in the Workplace: a Workskills Manual

This manual was designed to facilitate the museum-based teaching and learning of the set of workplace competencies identified by the US Department of Labor’s Secretary’s Commission on Achieving Necessary Skills (SCANS). See http://wdr.doleta.gov/SCANS/teaching/ and http://wdr.doleta.gov/SCANS/teaching/teaching.pdf. This Commission – composed of representatives of education, business, labor and state government – defined a common core of skills as essential to students’ job readiness even in a rapidly changing economic environment. Each module of this manual is devoted to one SCANS competency or core skill area.

MODULE 1: ALLOCATING RESOURCES

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<td>ACTIVITY L: ASSESSMENT</td>
<td>1-32</td>
</tr>
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</table>
LEADER’S GUIDE: 
Resource Allocation Skills

KEY DIMENSIONS: 
Allocate Time
Allocate Materials & Space
Allocate Money
Allocate Human Resources

Everyone is tacitly aware of how resources are allocated—we manage our available resources every single day. It’s a fundamental aspect of day-to-day living. Our task is to help teens make that knowledge more explicit. As the workplace continues to change, young people will need to develop strategies that will enable them to manage resources astutely. There are 4 broad areas that this module will focus on:

- time,
- materials and space,
- human resources, and
- money.

The information and exercises in this module offer opportunities to teach these skills. In this module the teens will work on a simple science demonstration. This project incorporates many of these skills and will help you guide young people in learning to identify and allocate resources judiciously.

Each of these 5 SCANS modules has at least one LEADER’S GUIDE that gives the person leading the activity an overview of the topic and general instructions on the accompanying activity. The LEADER’S GUIDES are followed by an optional sample project. The ACTIVITY section comes next and contains all of the handouts that are mentioned in the LEADER’S GUIDES.
LEADER’S GUIDE: Assessment of Skills

Assessment Overview & Instructions

Before you start working on this module, assess your teens’ current level of skills in managing resources.

PURPOSE:
This provides baseline documentation of the teen’s perception and your perceptions of the teen’s skills prior to this module and museum coaching. When completed again by the supervisor, after a period of coaching and learning, this instrument can be used again to determine the teen’s progress.

1. Begin work on the module by asking all teens to individually do the Self-Assessment. Make sure each teen writes his/her name, the date, and his/her supervisor’s name.

2. You should also complete a Self-Assessment for each teen.

3. When everyone has finished, ask them to go back over their responses and underline the specific skills they think they need to work on.

4. The supervisor and teen should compare their assessments of the teen’s skills and agree upon 5 specific skills to be worked on immediately.

5. The teen should then complete the Goals for Improvement sheet. When s/he has completed the Goals worksheet, the supervisor should assist and approve.

6. After the teen has completed the module’s activities and after s/he has practiced these skills in one or more departments of the museum, the supervisor or coach should again complete the Self-Assessment instrument for indicators of progress toward competency.

TIPS FOR SUPERVISORS
Journals can be a very useful form of documenting a teen’s progress through these SCANS modules. Information may be drawn, written or both. Keep a file in the office to collect time sheets, emergency contacts and other pertinent information. Ideally, journals should be kept in the museum to avoid the problems of teens forgetting to bring them or losing them. They can be given to the participants to keep at the conclusion of their involvement with the program.
# Self Assessment Worksheet

**My Name:** __________________________ **Date:** __________ **Supervisor:** ____________________

How skilled am I in handling resources? Rate yourself.

<table>
<thead>
<tr>
<th>LOW</th>
<th>AVERAGE</th>
<th>HIGH</th>
<th>Does Not Apply</th>
<th>Comments (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have not worked on this</td>
<td>I'm starting to work on this</td>
<td>My Skills are Fair</td>
<td>My Skills are Good</td>
<td>My Skills are Excellent</td>
</tr>
</tbody>
</table>

## I. Time as a Resource

### 1. Attendance & Work Habits

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I am present each session.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>b. I am on time for each session.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>c. I am ready to start work on time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>d. I follow correct procedures for recording hours worked.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>e. I understand and follow the schedule for assigned tasks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>f. I meet deadlines without reminders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>g. I follow correct procedure when unable to work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>h. I follow correct procedure to contact my museum supervisor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>i. I keep appointments.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>j. I can calculate the number of hours I've worked weekly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>k. I can accurately estimate the amount of time required to do a specific task</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
</tbody>
</table>

### 2. Personal Planning

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I set personal goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>b. I identify steps for achieving my goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>c. I prioritize my steps for achieving my goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>d. I identify the resources needed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>e. I develop a schedule for the steps.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>f. I evaluate my progress toward the goal.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
<tr>
<td>g. I can develop realistic schedules for completing my work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 N/A</td>
</tr>
</tbody>
</table>
## III. People as Resources

<table>
<thead>
<tr>
<th>Skill Description</th>
<th>LOW</th>
<th>AVERAGE</th>
<th>HIGH</th>
<th>Comments (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have not worked on this</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I'm just starting to work on this</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My Skills are Fair</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My Skills are Good</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My Skills are Excellent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Does Not Apply</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### II. Space & Materials as Resources

<table>
<thead>
<tr>
<th>Question</th>
<th>HIGH</th>
<th>AVERAGE</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can locate and give clear directions to museum exits, stairways, restrooms, offices, sitting areas, handicapped access, water fountains, other facilities.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I can describe the museum’s exhibit halls and programs.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I understand and follow the museum's safety procedures.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I can accurately answer questions about museum hours of operation.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I follow museum rules about eating or drinking in public areas.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I follow procedure if an exhibit breaks down.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I help set up for and clean up after museum activities and programs.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I assist with general museum “housekeeping”.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I correctly calculate the amount of materials needed for an activity.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I am careful not to waste materials &amp; supplies.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I report needs — BEFORE supplies run out.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>I return equipment to its proper place.</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

### III. People as Resources

<table>
<thead>
<tr>
<th>Skill Description</th>
<th>LOW</th>
<th>AVERAGE</th>
<th>HIGH</th>
<th>Comments (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I recognize by name and position the museum director and most staff.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I can contact supervisor and at least 2 other staff by phone.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I know when to call the following persons for information or assistance with a problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1) supervisor</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2) other teen workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3) museum security</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4) admissions desk</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5) education staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6) visitor services staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7) maintenance staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
8) computer specialist  | 1 | 2 | 3 | 4 | 5 | N/A  

### IV. Money as Resource

<table>
<thead>
<tr>
<th></th>
<th>LOW</th>
<th>AVERAGE</th>
<th>HIGH</th>
<th>Comments (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I have not worked on this</td>
<td>I'm starting to work on this</td>
<td>My Skills are Fair</td>
<td>My Skills are Good</td>
</tr>
<tr>
<td>a. I can use or follow a prepared budget.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b. I can prepare a budget.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c. I keep accurate records of expenses.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>d. I know my rate of pay or amount of stipend.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>e. I can calculate my pay for a specific period.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>f. I know the amount withheld from my pay and the reason.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Goals for Improvement Worksheet

To become more competent in Allocating Resource Skills, I need to work on the following specific areas:

<table>
<thead>
<tr>
<th>SKILL</th>
<th>ACTION</th>
<th>HELP NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I will try to meet these goals by _____________________________

Signed: _____________________________  DATE: _____________________________

RESOURCES - ENTRY
LEADER’S GUIDE: Introduction to Resource Allocation Skills

Resources are time, money, people and materials. Students learn to allocate resources in many daily activities, such as developing a budget for clothing or school supplies, or scheduling time so that there is time to party and compete in sports in addition to getting to the library to research a school project and fitting in work at the museum.

Budgeting resources is also important on the job. One allocates time by identifying tasks that need to be done, ranking them as to importance, estimating the time it will take to complete them on time, developing a schedule for them and evaluating the progress and adjusting the schedule as the deadline nears. Above all, one needs to avoid wasting time.

The second skill will be allocating money. Workers must learn to prepare a budget that projects where and when the money to do the job will be obtained in addition to projecting the cost of doing the job. As the job progresses one needs to keep track of projected costs versus actual costs and be ready to take corrective action in case of cost overruns.

Allocating materials and space is the third skill. How does one get the things needed to do the job? Where will they be kept until needed? How will the finished products be distributed?

Finally a most critical skill is that of managing people—human resources—and that includes learning to assess their skills, knowledge, and potential. The student must learn to project present and future workloads, to match the talents of different individuals to assemble teams to complete tasks. Being successful will require one to monitor their performance and give them constructive reactions to that performance.

Getting started: Know the Museum

Brainstorm with the teens to generate a checklist of key areas in the museum. Take a tour of the museum asking the teens to point out restrooms, pay telephones, eating and non eating areas, first aid room, exhibit galleries, administrative offices, storage and program areas. Be sure to show them areas where demonstrations and other educational programs are presented.
You make choices everyday—how you spend your time and money. You make decisions about where you want to be and who you want to be with. Have you ever thought that what you are really doing is allocating resources?

When you're careful with your time or money, you usually get to do more with less. When you're not careful, you may have to go without something you REALLY want.

The materials in this module have been designed to help you learn how to use resources to the greatest advantage. Part of the challenge is to slow down enough to pay attention to the details. Once you start learning the strategies that will help you conceptualize and manage your resources more effectively, you'll probably find that you have more time.

Learning skills and strategies to allocate resources is going to be valuable knowledge when you’re ready for a paying position (either in or outside of the museum), going to school, and in your personal life as well.

You’ll be learning about how to manage your time, materials and facilities, money and human resources.

Have fun!
LEADER’S GUIDE: Resource Skills

INTRODUCING TEENS TO THE RESOURCE ALLOCATION SKILLS

PART ONE: Introduce the “Resources” Competence

COACHING CONNECTIONS: All departments

TIME: 15-20 minutes

MATERIALS: Flip chart/markers

Introduce the allocation and management of resources as a competency.

1. List on the flip chart the four areas of competency with resources

   We will be learning about skills four areas:
   • Managing Time
   • Managing Money
   • Human Resources (managing people)
   • Managing Materials and Space

2. Ask the teens to give thoughts on what it means to allocate or manage time, money, human resources, and materials/space. Discuss their responses.

3. Have them brainstorm a list of ways in which they could waste these resources at the museum or science center.

4. What could they do to conserve these resources?
LEADER’S GUIDE: Resource Skills

TIME ALLOCATION

PART ONE: How to keep a time sheet (Activities A, B, C)
COACHING CONNECTIONS: All of Appendix A
TIME: 30 minutes
MATERIALS: One copy of Activity A, two copies of Activity B for each participant or copies of your museum’s time sheet, one copy of Activity C for each participant or an overhead of Activity C and overhead projector, pencils.

Tell the teens that they will be held accountable for keeping track of the hours they work and explain that recording work time is a federal law when working for pay. Even when there are no paychecks, this skill is useful for documenting the number of hours devoted to volunteer service.

Emphasize that they must fill in the sheets each day they work; and the time sheets must be neat and accurate and that hours worked must be totaled.

1. Pass out copies of Activity A and review the instructions together. Review the hour conversion table and troubleshoot if necessary.

2. Ask the teens to try working individually at first, when they start having trouble then they can work in pairs. Review their answers as a large group.

3. Distribute Activity B or your institution’s time sheet and work through it with the young people and explain how they are to fill one out.

4. Ask teens to carefully check their time sheets for accuracy. You may either pass out copies of Activity C to show them what the completed time sheet should look like or you may make an overhead of Activity C and show that.

Explain that the blank time sheets they have should be used to record future hours worked and that they must always get the signature of their supervisor.

Explain when and how time sheets are to be turned in.

This is a good time to talk about the importance of attendance, punctuality, breaks and lunch, and calling when late or absent. Ask, “What happens when you are late or absent?” Guide them in seeing how their tardiness or absenteeism affects other staff members and the effectiveness of serving the museums’ visitors.

Do an activity totaling hours—showing how to subtract time to get Net then to add for Total.
TIME ALLOCATION

PART TWO: Algebra and time
COACHING CONNECTIONS: All
TIME: 15 minutes
MATERIALS: One copy of Activity D

Young people often wonder why they are required to study algebra, and some have been rather successful in avoiding it. This activity will point out the usefulness of algebraic skills in solving RATE–TIME–QUALITY problems which are so important to efficiency in the workplace.

1. Distribute Activity Sheet D and have the group read over the problem. Ask teens to try solving the problem individually. Then pair up to discuss what they did, or how they arrived at their answers and to compare answers.

2. Share the answers with the group, using the leader's guide answer sheet.

TIP FOR SUPERVISOR:
This will give you the opportunity to identify teens who may benefit from tutoring in mathematics. You cannot spend a lot of time teaching these concepts, but you may be able to contact a tutorial program for assistance or suggest one of the free online mathematics tutorial sites.
LEADER’S GUIDE: Resource Skills

ALLOCATING MATERIALS & SPACE

PART ONE: How to collect supplies & Schedule Space

COACHING CONNECTIONS: Programs

TIME: 15 minutes

MATERIALS: One copy of Activity E Part 1 & 2, one copy of requisition form for each participant.

Using Activity E (or a demonstration from your own museum if you prefer) teach teens to review a supply list, how and where to get supplies—including copies of requisition forms if required—and who should sign them.

Teens should also be shown what process they would use to schedule space in the museum. They will not need to do so for this demonstration, but will need this information for future assignments.

This is a good time to review expectations regarding use of space with youth, i.e.: respect museum property, leave area as they find it (or in better condition if possible), let other staff know if use of the area will affect them.

Remind teens to look over space ahead of time to check for accessibility, adequate seating, trash receptacles and availability of water, electricity or other resources.

PART TWO: Creating a work schedule

COACHING CONNECTIONS: All

TIME: 30 minutes

MATERIALS: Activity F/participant

- Explain that the first step before doing the demo is to plan how much time they will need.
- Discuss with the young people the importance of planning their work day so they do not waste time and so they accomplish their assigned tasks.

1. Give each teen a copy Activity F.
2. Ask them to list all the details involved in planning their demo and then to make out a work schedule (Activity F) to allow enough time to complete the demon.
3. Remind them that they will need to arrive early enough to get materials, set up materials, check out work space, etc.
4. Review the work schedules and make suggestions as appropriate.
PART THREE: Practice Demo

COACHING CONNECTIONS: Programs
TIME: 60 minutes
MATERIALS: Demo supplies.

Once supplies have been assembled teens can be paired to practice the demonstration.

Make sure teens understand to use only what is need for demonstration and avoid wasting supplies, time, etc.

PART FOUR: How to Clean-up

COACHING CONNECTIONS: All
TIME: 15 minutes
MATERIALS: Activity G for each participant

1. Review clean up checklist and provide youth with any information specific to your museum.
2. Have teens clean up after their demos.
LEADER’S GUIDE: Resource Skills

ALLOCATING HUMAN RESOURCES

PART THREE: Learning the organization
COACHING CONNECTIONS: Programs
TIME: 15 minutes
MATERIALS: One copy of your staff flow chart or organization chart per participant, flip chart, markers

1. Review staff flow chart so teens can understand the chain of command and who makes which decisions.
2. Then ask teens where to go if they need assistance. What museum person can help check out supplies? Who do they go to if they have questions or their staff supervisor is not available?
3. Using a flip chart to record answers, ask teens to list all the staff members who may be involved in helping them present a demo. This may require some coaching on your part. Remind them of those who order supplies, those who deliver them, and those who pay the bills, as well as those who keep the building clean, maintain the lighting, etc.

Emphasize that team work is required for anything to happen at the museum.

TIP FOR SUPERVISOR:
Sometimes it helps for teens to know ahead of time that they will be rewarded for participating. Consider handing out small wrapped candies, museum pencils, stickers or other inexpensive rewards when teens contribute thoughtful questions and/or comments. This may help reduce boredom or lack of attention.
## LEADER’S GUIDE: Resource Skills

### Allocating Money

**Part 1:** Discuss museum resources  
**Coaching Connections:** All of Appendix A  
**Time:** 15-20 minutes  
**Materials:** Flip chart, markers

- Lead a discussion about the monetary value of supplies, time, and other resources and why it is important to conserve them.
- Ask questions such as, What are the resources of the museum? How could we waste them? What might the consequences be?

**Part 2:** Learning to budget money: Activity H  
**Coaching Connections:** All of Appendix A  
**Time:** 20 minutes  
**Materials:** Activity H for each participant, pencils

Assist the teens in budgeting money and improving basic math skills by guiding them through this activity.

**Part 3:** Learning to allocate money: Activity I  
**Coaching Connections:** All of Appendix A  
**Time:** 30 minutes  
**Materials:** Activity I for each participant, space to perform skit

Review key dimensions of resources.
LEADER’S GUIDE: Resource Skills

THE BIG PICTURE

Learning About the Transfer of Skills

COACHING CONNECTIONS: All of Appendix A  
TIME: 35-45 minutes  
MATERIALS: Activity J for each participant, Activity K for facilitator, flip chart, markers

BACKGROUND:  
Through follow-up with YouthALIVE! participants we have learned that although the teens who participated in YouthALIVE! programs enjoyed their experiences and felt they learned a lot from them, they did not see how this information and the learned skills transferred outside the museum. The purpose of "The Big Picture" is to help teens see this relationship by showing how these skills will transfer to the workplace.

1. Review Activities in advance. Activity K is for your information and includes some ideas to help you guide the teens through this exercise.
2. Write each of the questions from Activity J on a flip chart, using one page per question.
3. Divide teens into teams of 4 - 5.
4. Ask them to choose a leader or let them draw for the “honor”. The leader will facilitate the discussion.
5. Pass out Activity J.
6. Review the instructions together and allow 15 minutes for their discussion.
7. Recording answers on the flip chart, ask each group to supply one idea at a time until all answers are covered. Ask them not to repeat something already stated.
8. Conclude by reinforcing the transfer of skills learned at the museum to other situations.
LEADER’S GUIDE: Resource Skills

ASSESSMENT

PART ONE: Review Time Sheets
COACHING CONNECTIONS: All of Appendix A
TIME: 30-60 minutes
MATERIALS: Time sheets filled out by youth, colored pencil, calendar and teen schedule

- Ask a staff person or volunteer to look over teen time sheets at least twice a month to check for accuracy, and initial them. Any discrepancies should be discussed with the teen as soon as possible.

PART TWO: Teen assessment of personal growth in Resource competency
COACHING CONNECTIONS: the youth program
TIME: 30-45 minutes
MATERIALS: Activity L for each participant, pens or pencils

- Ask youth to assess their progress in the Resource Allocation competency using Activity L. The completed form can be placed in their journal or file.

PART THREE: Teen feedback on Resource Allocation Module
COACHING CONNECTIONS: the youth program
TIME: 30-60 minutes
MATERIALS: Activity M/ participant, flip chart, markers

Explain to the teens the value of their input in helping staff and one another learn and grow and thank them for their help.

To save time with the large group discussion, ask teens to contribute new ideas or thoughts rather than reiterating what another has said.

Ask for a show of hands when you are looking for majority thoughts. For example, “All who agree, raise your hands. Are there any other opinions we can consider?”.
Have a synopsis of notes on flip chart typed for future reference. This information will be useful as program documentation as well as providing feedback for program refinement.
ACTIVITY A: Calculating Hours Worked

CALCULATING HOURS WORKED

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Time In</th>
<th>Time Out</th>
<th>Time In</th>
<th>Time Out</th>
<th>Total Hours Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun</td>
<td>June 8</td>
<td>1:30</td>
<td>5:30</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Tues.</td>
<td>June 10</td>
<td>3:15</td>
<td>5:30</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Thurs.</td>
<td>June 12</td>
<td>3:15</td>
<td>5:15</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Sat</td>
<td>June 14</td>
<td>9:30</td>
<td>12:30</td>
<td>1:00</td>
<td>5:30</td>
<td></td>
</tr>
</tbody>
</table>

This chart is a simplified version of sections from a time sheet. Things to remember in calculating total hours worked:

A. Units of time must be converted into hours and fractions of an hour:
   - 1 hour = 60 minutes
   - \(\frac{3}{4}\) hour = 45 minutes or .75 hour (\(3 \div 4 = .75\))
   - \(\frac{1}{2}\) hour = 30 minutes or .5 hour (\(1 \div 2 = .50\))
   - \(\frac{1}{4}\) hour = 15 minutes or .25 hour (\(1 \div 4 = .25\))
   - 1 hour and 45 minutes = 1\(\frac{3}{4}\) hours or 1.75 hours
   - 1 hour and 30 minutes = 1\(\frac{1}{2}\) hours or 1.5 hours
   - 1 hour and 15 minutes = 1\(\frac{1}{4}\) hours or 1.25 hours

B. Subtract the time in from the time out

What was the total number of hours worked on June 8? ______
Solution:

What was the total worked on June 10? ______
Solution:

What was the total worked on June 12? ______
Solution:

What was the total worked on June 14? ______
Solution:

What was the total worked for the week of June 8-14? ______
Hint: Add the total hours column.
Solution:
ACTIVITY A: Calculating Hours Worked

CALCULATING HOURS WORKED

<table>
<thead>
<tr>
<th>Day</th>
<th>Total Hours Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun</td>
<td>1:30</td>
</tr>
<tr>
<td>June 8</td>
<td>5:30</td>
</tr>
<tr>
<td>Tues.</td>
<td>3:15</td>
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<tr>
<td>June 10</td>
<td>5:30</td>
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<tr>
<td>Thurs.</td>
<td>3:15</td>
</tr>
<tr>
<td>June 12</td>
<td>5:15</td>
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<tr>
<td>Sat</td>
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<td>June 14</td>
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<td>1:00</td>
<td>5:30</td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>

This chart is a simplified version of sections from a Time Sheet. Things to remember in calculating total hours worked:

A. Units of time must be converted into hours and fraction of a hour:
   - 1 hour = 60 minutes
   - ¾ hour = 45 minutes or .75 hour (3 ÷ 4 = .75)
   - ½ hour = 30 minutes or .5 hour (1 ÷ 2 = .50)
   - ¼ hour = 15 minutes or .25 hour (1 ÷ 4 = .25)
   - 1 hour and 45 minutes = 1¾ hours or 1.75 hours
   - 1 hour and 30 minutes = 1½ hours or 1.5 hours
   - 1 hour and 15 minutes = 1¼ hours or 1.25 hours

B. You must subtract the time in from the time out
   - What was the total number of hours worked on June 8? __ 4
     Solution: From the time out 5 hours and 30 minutes past the hour
     Subtract the time in 1 hour and 30 minutes past the hour
     4 hour and 0 minutes worked
   - What was the total worked on June 10? 2¼ or 2.25 hours
     Solution: From the time out 5 hours and 30 minutes past the hour
     Subtract the time in 3 hours and 15 minutes past the hour
     2 hours and 15 minutes worked or 2.25 hours or 2¼ hours
   - What was the total worked on June 12? 2 hours
   - What was the total worked on June 14? 7½ or 7.5 hours
   - What was the total worked for the week of June 8-14? 15.75 hours or 15¾ hours
     Hint: Add the total hours column.
ACTIVITY B: Your Practice Time Sheet

Pretend that this is an employee time sheet for your museum and that your time spent in the youth program represents your work hours. Review your program schedule and use your time here in the program as the basis on which to fill out your time sheet.

**TIME SHEET**

Employee Name: __________________________________________

Employee Number: ___________  Department Number _____________

<table>
<thead>
<tr>
<th>WEEK 1</th>
<th>DATE</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>TOTAL HOURS</th>
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<table>
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<th>DATE</th>
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<th>TIME OUT</th>
<th>TIME IN</th>
<th>TIME OUT</th>
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</tbody>
</table>

**PAY PERIOD:** _____________________________  **TOTAL HOURS:** _____________________________

**EMPLOYEE SIGNATURE:** _____________________________  **SUPERVISOR SIGNATURE:** _____________________________

**OVERTIME APPROVAL:** _____________________________
**ACTIVITY C: A Sample Time Sheet**

**Science Connection Museum**

**TIME SHEET**

Employee Name: **JOE BLOE**

Employee Number: **034-7**

Department Number: **10 (Visitor Services)**

<table>
<thead>
<tr>
<th>WEEK 1</th>
<th>DATE</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>TOTAL HOURS</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
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<th>TIME OUT</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>TOTAL HOURS</th>
</tr>
</thead>
<tbody>
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<td>12:30</td>
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<td>33</td>
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</tbody>
</table>

**PAY PERIOD:** May 1 - May 13  
**TOTAL HOURS:** 61  
**EMPLOYEE SIGNATURE:** __Joe Bloe__

RESOURCES - ENTRY 1-23
SUPERVISOR SIGNATURE: ________________________________

OVERTIME APPROVAL:  NA (Does not apply) ____________
ACTIVITY D: TIME MANAGEMENT

CALCULATING TIME REQUIRED FOR A TASK

The Science Connection’s Museum Marketing and Membership Department (MM&M) has asked the Teen Work Crew to assist with a mass mailing. They want to send out 3,000 announcements about the opening of T.REX, a hot new IMAX movie.

You and 3 other Teen Workers have volunteered to work as a team, stuffing and labeling envelopes. From past experience, you know that your team works well together and can usually get 200 envelopes stuffed and labeled in an hour. Your team can work on this 5 hours a day until this task is finished. Your supervisor wants you to let her know how long you think the job will take.

Can you complete this task in one work day? __________

If not, how long will it take to complete this task. ________ hours or _______ days.

Hint: Remember your algebraic formulas!

The Rate or amount completed in an hour \( \times \) The time or total number of hours worked = Total Amount Done

OR

TIME
Total number of hours worked = TOTAL AMOUNT DONE
rate or amount completed in one hour
ACTIVITY E: Demonstration–Part 1

CREATING A GAS:
A Chemistry Demonstration

The following demonstration is a simple, but dramatic way to observe the evidence of a chemical reaction by the gas that is produced. Observers can describe what they see happening and can be asked to make inferences about the source of the gas. This activity must be practiced several times before it is presented as a demonstration.

Background Information
Chemical reactions are common occurrences in which two or more substances combine and change into new substances. When you add baking soda to vinegar, bubbles form which release carbon dioxide. You no longer have baking soda and vinegar, but an entirely new set of chemicals that includes a gas, carbon dioxide.

There are 5 indicators (evidence for) a chemical reaction having occurred. They are:
1. Temperature change
2. Color change
3. Gas given off
4. Precipitate formed (a solid substance forms and usually settles at the bottom of the container)
5. New substance formed

When one or more of these indicators is observed, a chemical reaction may have taken place.
ACTIVITY E: Demonstration-Part 2

CREATING A GAS: A Chemistry Demonstration

Instructions and Supplies Needed
- Measuring spoons (or a tablespoon)
- Measuring cup (or 1/4 cup measuring device)
- 12 oz. plastic beverage bottle
- uninflated round balloon (8” to 10”)
- small rubber band
- funnel
- 1/4 cup vinegar
- 2 tablespoons baking soda
- Safety goggles
- Paper towels

Advance Preparation
Step 1 Obtain all necessary materials
Step 2 Use funnel to pour 1 to 2 tablespoons of baking soda into the balloon
Step 3 Set up demonstration area

The Demonstration (wear safety goggles)
Step 4 Pour 1/4 cup vinegar into the beverage bottle
Step 5 Inform your observers that there is a white powder inside the balloon and that you must be very careful to place the balloon over the mouth of the bottle without letting any of the powder drop into the bottle.
Step 6 After fitting the balloon on the bottle, secure the rim of the balloon to the mouth of the bottle with a small rubber band.
Step 7 When you are ready to impress your audience with your science skills, count to three and lift the balloon to allow the powder inside to mix with the Vinegar in the bottle.
Step 8 Watch the balloon inflate
Step 9 Ask your audience to describe what they observed happening
Step 10 Summarize key evidence that a chemical reaction has taken place:
- a gas is given off (the balloon was inflated by it)
- a new substance is formed (we began with vinegar and a white powder, and ended up with a gas that inflated the balloon.)
ACTIVITY F: Work Schedule

This is a blank work schedule which you can use to record your plan for your *Creating a Gas* demo. Remember to allow time to check out supplies, set up, present demo and clean up.

8:00: ____________________________________________
8:30: ____________________________________________
9:00: ____________________________________________
9:30: ____________________________________________
10:00: ____________________________________________
10:30: ____________________________________________
11:00: ____________________________________________
11:30: ____________________________________________
12:00: ____________________________________________
# ACTIVITY G: Clean-up Checklist

**Date:** __________  **Time:** __________  **Area:** __________  **Person:** __________

<table>
<thead>
<tr>
<th>TASK</th>
<th>YES</th>
<th>NO</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>All supplies are returned to where they belong</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note made of supplies to be replenished</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counter and table tops are wiped clean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All trash is placed in proper receptacles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals are properly disposed of (If applicable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seats are restored to arrangement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lights are turned off (if needed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any and all borrowed items are returned to proper place, clean and ready to re-use</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**OTHER TASKS**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Problems or concerns with supplies or clean up:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Activity H: Allocating Money worksheet

During the monthly Science Explainers meeting, the program manager distributed the budget below and said, “We appear to have a small problem. This is the budget for our grant award, showing how we intended to spend the money that we were given for this program. Under participant support we’ve allotted a total of $40,000 for your stipends for the entire year. Now, here’s the problem—here it is the middle of April and we’ll be short $880 for participant support. On the bright side, we’re on target for the other budget items. Basically, we’re going to run out of stipend money before the end of the year. Let’s brainstorm a couple solutions so that we can pay you guys for the rest of the year. Here are the charts to help you understand what we have to work with.”

<table>
<thead>
<tr>
<th>Explainer's Budget 9/07 - 8/09</th>
<th>Debits</th>
</tr>
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<tbody>
<tr>
<td>Equipment</td>
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<td>Travel</td>
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<td>Participant Support</td>
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</tr>
<tr>
<td>Consultants</td>
<td>$1,000</td>
</tr>
<tr>
<td>Other</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$52,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Explainer's Budget 9/07 - 8/09</th>
<th>Debits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>$2,500</td>
</tr>
<tr>
<td>Travel</td>
<td>$5,000</td>
</tr>
<tr>
<td>Participant Support</td>
<td>$40,000</td>
</tr>
<tr>
<td>Materials &amp; Supplies</td>
<td>$2,500</td>
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<tr>
<td>Consultants</td>
<td>$1,000</td>
</tr>
<tr>
<td>Other</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$52,000</td>
</tr>
</tbody>
</table>

Working in a small group discuss the following options.

- Scale back the number of hours each Explainer works/month.
- Volunteer for a portion of the time already scheduled.
- Raise funds to make up the difference.
- Shift funds from other sections of the budget to compensate.
- Lay off several Explainers.
- Other — please explain!

- Which one does your group think is the best solution to the problem?
- Would a combination of solutions work better?
- How can this situation be avoided in the future?
Be sure that your group can justify and fully explain the decision you made.
Activity I: Allocating Money

The Museum Commercial

All of the museum employees have left the museum and only the youth program participants are left. The youth program participants must now run the museum and create a new image. Working in small groups, each team should decide what their new identity by choosing a new name for their museum.

Now that you have decided on the name of the museum, you must let people know about it by doing some public relations/marketing work.

Your team must develop a two-minute commercial that “sells” your new museum as the best family value that $15 can buy in town. Working as a team, decide what will be included in your two-minute message. The best commercials will find a way to include all aspects of the resources competency in the commercial–human resources; materials and space; time; and money.

Your team will have two-minutes of studio time to shoot the commercial today.
Activity J: The BIG Picture Worksheet

Although the museum is an interesting place and can be lots of fun, it is a work place. You’re learning to manage your resources of time, materials and space, money and staff. These are skills that you’ll use throughout your life—working at the museum, another job, at home or at school.

Imagine that you’ve just been hired for your first job outside the museum. You’ll be working as a cashier in a supermarket. Based on what you’ve learned at the museum, how will you manage resources in your new job?

Skill Area: Managing Time

What will my supervisor expect me to do to manage my time?

Skill area: Managing Materials

What will I need to prepare to do my job?

Skill area: Managing Staff

What other staff members will I depend on to help me do my job?
Skill area: Managing Space

Where will I do my job and what will I need to do to prepare my space so that I can better serve my customers?

Skill Area: Managing Money

What can I do to make sure I do not cost my company additional money?

Can you see how you will be using resources by allocating time, materials, staff, space, and money? These same skills will be used in all other jobs you may have as well as in school, at home and in your personal life.
Activity K: The BIG Picture-Leader’s Guide

Imagine that you’ve just been hired for your first job outside the museum. You’ll be working as a cashier in a supermarket. Based on what you’ve learned at the museum, how will you manage resources in your new job?

<table>
<thead>
<tr>
<th>TIME</th>
<th>What will my supervisor expect me to do to manage my time?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Have good attendance.</td>
</tr>
<tr>
<td></td>
<td>• Call ahead if I have to be late or absent.</td>
</tr>
<tr>
<td></td>
<td>• Be punctual.</td>
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<tr>
<td></td>
<td>• Check customers out quickly</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>What will I need to prepare to do my job?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Pick up cash drawer with money.</td>
</tr>
<tr>
<td></td>
<td>• Have tape in cash register.</td>
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<tr>
<td></td>
<td>• Have grocery bags, pens for writing checks, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STAFF</th>
<th>What other staff members will I depend on to help me do my job?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Accountant</td>
</tr>
<tr>
<td></td>
<td>• Supervisor</td>
</tr>
<tr>
<td></td>
<td>• Baggers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPACE</th>
<th>Where will I do my job and what will I need to do to prepare my space so that I can better serve my customers?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Check out counter.</td>
</tr>
<tr>
<td></td>
<td>• Neat &amp; clean.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MONEY</th>
<th>What can I do to make sure I do not cost my company additional money?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Don’t waste bags &amp; other supplies.</td>
</tr>
<tr>
<td></td>
<td>• Don’t waste time.</td>
</tr>
<tr>
<td></td>
<td>• Pay close attention when handling money, give correct change</td>
</tr>
<tr>
<td></td>
<td>• Be sure my register and cash balance</td>
</tr>
</tbody>
</table>

Can you see how you’ll be using resources by allocating time, materials, staff, space, and money? These same skills will be used in all other jobs you may have as well as in school, at home and in your personal life.
Activity L: Assessment of My Progress

Answer these questions on your own, share them in a small group with one member acting as a recorder. Finally group responses can be reported to with the whole group. Please leave your assessment sheet with your program leader.

1. Do you think you are learning valuable skills? What are they?

2. Are there better ways of helping you learn them? What would they be?

3. If you could change one thing about this program, what would it be?

4. How important is it for teens to know how to use resources?

5. Which activities did you like best? Least?

6. Is your time well spent here? Why or why not?

7. What do you want to do as an adult?

8. How can this training help you achieve your goals?

Name____________________________________ Date__________________
Association of Science-Technology Centers  
YouthALIVE! in the Workplace: a Workskills Manual

This manual was designed to facilitate the museum-based teaching and learning of the set of workplace competencies identified by the US Department of Labor’s Secretary’s Commission on Achieving Necessary Skills (SCANS). http://wdr.doleta.gov/SCANS/teaching/ and http://wdr.doleta.gov/SCANS/teaching/teaching.pdf. This Commission–composed of representatives of education, business, labor and state government–defined a common core of skills as essential to students’ job readiness even in a rapidly changing economic environment. Each module of this manual is devoted to one SCANS competency or core skill area.

## MODULE 2: INTERPERSONAL SKILLS

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<td>Establishing Ground Rules for Discussion</td>
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<td>Getting to Know Me Guide (Activity C-2 Guide)</td>
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<td>Inside Me, Outside Me Guide (Activity C-3 Guide)</td>
<td>2-19</td>
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<td>Who I Am Poem Guide (Activity C-3 Guide)</td>
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<td>Enhancing Communication Skills</td>
<td>2-21</td>
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<tr>
<td>Teaching Each Other</td>
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<td>The BIG Picture</td>
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<td>Activity C.2: Getting to Know Me</td>
<td>2-32</td>
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<td>Activity C.3: Inside Me, Outside Me; Who I Am Poem</td>
<td>2-32</td>
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<tr>
<td>Activity D: Part 2-Enhancing Communication Skills – Tips</td>
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</tr>
<tr>
<td>Activity G: The Big Picture–Leader’s Guide</td>
<td>2-39</td>
</tr>
</tbody>
</table>
As they mature teens seeks ways to develop their own individuality. They often work toward this state of independence by “separating” themselves from parents and authority figures—they may dress, talk, and behave in ways that are difficult for adults to understand. Teens also begin to develop their repertoire of interpersonal skills. Although their skills may enable them to function well in their peer group, teens need to understand that different settings and situations often require different interpersonal skills. Interpersonal skills that are both flexible and broad are not usually taught in school nor can we assume that they are being taught in the home.

This section has been designed to enhance young peoples’ interpersonal skills. It is divided into 5 skill areas:

1. working with visitors
2. participating as a team member
3. understanding ourselves and others
4. teaching others
5. exercising leadership

Each of these 5 areas has at least one LEADER’S GUIDE that gives the person leading the activity an overview of the topic and general instructions on the accompanying activity. The LEADER’S GUIDES are followed by an optional sample project. The ACTIVITY section comes next and contains all of the handouts that are mentioned in the LEADER’S GUIDES.
LEADER’S GUIDE: Interpersonal Skills

Assessment Overview & Instructions

Before you start working on this module, assess your teens’ current level of interpersonal skills.

PURPOSE:
This provides baseline documentation of the teen’s perception and your perceptions of the teen’s skills prior to this module and museum coaching. When completed again by the supervisor, after a period of coaching and learning, this instrument can be used again to determine the teen’s progress.

1. Begin work on the module by asking all teens to individually do the Self-Assessment. Make sure each teen writes his/her name, the date, and his/her supervisor’s name.

2. You should also complete a Self-Assessment for each teen.

3. When everyone has finished, ask them to go back over their responses and underline the specific skills they think they need to work on.

4. The supervisor and teen should compare their assessments of the teen’s skills and agree upon 5 specific skills to be worked on immediately.

5. The teen should then complete the Goals for Improvement sheet. When s/he has completed the Goals worksheet, the supervisor should assist and approve.

6. After the teen has completed the module’s activities and after s/he has practiced these skills in one or more departments of the museum, the supervisor or coach should again complete the Self-Assessment instrument for indicators of progress toward competency.
Self-Assessment Worksheet

My Name:_____________________________  Date:_____________

Supervisor’s Name:___________________________________________

How skilled am I in interacting positively with other people?
Rate yourself.

<table>
<thead>
<tr>
<th></th>
<th>LOW</th>
<th>AVERAGE</th>
<th>HIGH</th>
<th>Does Not Apply</th>
<th>Comments (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I have not worked on this</td>
<td>I’m starting to work on this</td>
<td>My Skills are Fair</td>
<td>My Skills are Good</td>
<td>My Skills are Excellent</td>
</tr>
</tbody>
</table>

1. Working with Visitors

   a. I greet visitors in a friendly manner.

   b. I listen carefully to identify visitors’ needs and avoid misunderstanding.

   c. I handle complaints in a positive manner.

   d. I am always polite.

   e. I refer visitors to other staff when appropriate.

   f. I follow through with visitors’ needs.

   g. I try to match my presentation style to visitors’ interests.

   h. I “read” visitors’ body language

   i. I use proper grammar when speaking.

   j. I give visitors my full attention when I am with them.

   k. I am always neat, clean, and appropriately dressed for the workplace

2. Participating as a Team Member

   a. I share tasks, ideas, and materials necessary to complete a project.

   b. I encourage others in the group by listening and responding appropriately.

   c. I look for the strengths and talents of each person in the group.

   d. I try to resolve conflict so that the whole group benefits and can continue working together.

   e. I take personal responsibility for accomplishing tasks.

   f. I responsibly question rules and procedures that seem unproductive.

   g. I am learning how to recognize and understand other group members’ styles of working and communicating.
### 3. Understanding Ourselves and Others

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</thead>
<tbody>
<tr>
<td>a.</td>
<td>I respect the rights of others that may think differently or have a different perspective from my own.</td>
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<tr>
<td>b.</td>
<td>I am respectful of members of other racial or ethnic groups.</td>
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<td>c.</td>
<td>I am respectful of members of other religious groups.</td>
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<td>d.</td>
<td>I am aware of some of the challenges faced by persons with disabilities.</td>
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<tr>
<td>e.</td>
<td>I adapt to people of all ages.</td>
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<tr>
<td>f.</td>
<td>I adapt to people of all races/ethnicities.</td>
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<td>g.</td>
<td>I am aware of gender stereotypes.</td>
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<tr>
<td>h.</td>
<td>I try to understand people on the basis of their actions NOT stereotypes.</td>
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### 4. Teaching Others

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</thead>
<tbody>
<tr>
<td>a.</td>
<td>I help others learn new concepts through interpreting exhibits or doing presentations.</td>
<td></td>
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<tr>
<td>b.</td>
<td>I help others learn through coaching.</td>
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<tr>
<td>c.</td>
<td>I use questions as a way to help others learn.</td>
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<tr>
<td>d.</td>
<td>I provide the learner with constructive feedback.</td>
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<td>e.</td>
<td>I constantly look for ways to improve my teaching skills.</td>
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### 5. Exercising Leadership

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</thead>
<tbody>
<tr>
<td>a.</td>
<td>I can recognize problems in the museum and suggest appropriate solutions.</td>
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<tr>
<td>b.</td>
<td>I can recognize problems in my group and suggest appropriate solutions.</td>
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<tr>
<td>c.</td>
<td>I can get a group of people to work together as a team.</td>
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<tr>
<td>d.</td>
<td>I show people how to do a task that is new to them.</td>
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<tr>
<td>e.</td>
<td>I encourage people to try new solutions.</td>
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<tr>
<td>f.</td>
<td>I am a good listener and a good speaker.</td>
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<td>g.</td>
<td>I can express myself well in writing.</td>
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<tr>
<td>h.</td>
<td>I can clarify problems and resolve conflicts.</td>
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<td>i.</td>
<td>I know when to make a reasonable compromise.</td>
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</table>
### Goals for Improvement

To become more competent in Interpersonal Skills, I need to work on the following specific areas.

<table>
<thead>
<tr>
<th>SKILL</th>
<th>ACTION</th>
<th>HELP NEEDED</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>3.</td>
<td></td>
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<td>4.</td>
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<tr>
<td>5.</td>
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</tbody>
</table>

I will try to meet these goals by __________________________ DATE __________________________

Signed:________________________________ DATE:________________________
LEADER’S GUIDE:
Introducing Interpersonal Skills

At work, home or play we continually interact with other people. From birth on, children interact with family members and playmates. Later they have other opportunities for interaction in sports and extracurricular activities. While schools have not included the development of these skills in the academic curriculum typically, most adults intuitively recognize the importance of interpersonal skills in succeeding in work and life.

The most important interpersonal skill in the workplace is being a team member. One will need to share the tasks necessary to complete a project, encourage fellow team members, recognize the individual strengths of team members, and be able to resolve differences effectively so that the entire time benefits. It will also mean that workers need to take personal responsibility for their part of the project properly and on time. Students will also need to learn how to challenge existing procedures, policies or authorities that hamper the effectiveness of the team.

The next two skills are being able to teach others and effectively work with clients or customers.

To teach others, workers must be able to help others apply concepts, recognize who needs training and in what areas; help others see how concepts are relevant to what they are doing; and determine how much progress students are making and provide encouragement and feedback.

“The customer is always right,” may be an oversimplification sometimes, and downright untrue at other times. However, it does describe the attitude employees should have in the workplace. Good performance means a worker must be able to listen to the customer/client to identify the real problem or need while avoiding misunderstandings; communicate in a positive manner; and be familiar with ways to satisfy the customers’ needs.
Leadership skills
Making positive use of the rules and values of the workplace, being able to justify a position, establishing personal integrity, and considering everyone’s viewpoint—are critical to pulling the team together and getting the job done.

There are three broad categories of leadership styles: diagnostic (problem solving, critical and creative thinking), perceptual (good verbal and listening skills), and behavioral (teamwork, team building, negotiation, motivation, and delegation). The most critical of leadership skills is knowing which style of leadership will work in a particular situation and being able to apply it.

Workers must also be skilled in the art of negotiation. While people have made the acquisition of effective negotiation skills a life long pursuit, this module hopes to cover a few basics:
- researching the history of the conflict
- setting realistic goals
- presenting the facts objectively
- hearing what both sides have said
- adjusting to new facts and ideas quickly
- proposing and examining options; and
- making reasonable compromise

Finally, with a global economy and an expanded local diversity, our interpersonal skills must include understanding ourselves so that we might begin to understand others. Not only must we learn to identify and appreciate our own cultural identities, but we must move beyond this to recognizing, understanding and appreciating the similarities and differences of people from other cultural groups.

These diverse groups include those whose identities may be framed by race, ethnicity, gender, age, sexual orientation, physical abilities, socio-economic class, job status, religion, immigrant status, language and nationality. Individual and organizational success in the midst of such diversity necessitates the cultivation of positive attitudes toward social change and multiculturalism.
We’re continually learning to get along with other people. We all have a set of skills that we continuously revise to solve problems and achieve goals. We began perfecting our interpersonal skills by interacting with family members and neighbors. We continued to expand our interpersonal skills when we went to school.

As we grow older, we may join groups where we’ll meet new people and acquire the interpersonal skills that are appropriate for getting along with people in that particular group. When we enter the work force we’ll be working with people from many different backgrounds. It becomes very important at this point to know how to work well with others even if we don’t understand or agree with them.

Becoming more aware of interpersonal skills and continually developing them is an incredibly useful life skill. Not only will it make your job easier to do, it will also make your environment a much nicer place to be.

The information in this section will help you develop some of these interpersonal skills. You’ll be able to practice working with visitors, participating as a team member, working with people from different backgrounds, teaching others, and being a team leader.

Tips for Teens

Observe an adult you admire and pay attention to how that person interacts with other people.

If an activity in this section seems difficult to do, you might consider practicing that skill beyond the session. Make a conscious effort to practice the skill wherever you can and reward yourself when you do.

Remember, “practice makes perfect.”
LEADER’S GUIDE: Interpersonal Skills

PREPARING FOR LEADERSHIP

Learning to be a Leader

**DEPARTMENT:** Programs/Visitor Services  
**TIME:** 15-20 minutes  
**MATERIALS:** 1 copy of Sign-up for Leadership form, pencils, flip chart, markers

This activity will provide the participants with the opportunity to take turns acting as a team leader and will continue throughout the Interpersonal Competency segment.

1. Divide the participants into teams of 4 or 5.
2. Give each of them a copy of the Leadership Sign-up Sheet which contains the names of all the exercises in this segment which require a team leader.
3. Explain that each team member is to choose one exercise and sign his/her name on the line next to the exercise. Don’t try to explain at this time what these exercises are. The point is that each team member has an opportunity to be a leader at least once.
4. Collect these sheets and keep them for your records.
5. Ask the students to define the responsibilities of a team leader and record these on a flip chart. These may include: keeping team members on track and focused, reporting back to the larger group, making assignments, etc.
6. Ask the students what they can each do to help their team leaders and record answers on flip chart, i.e., pay attention, contribute to discussion, etc.
7. Ask the students to make posters for these lists and display them prominently where they will be working.

TIPS FOR SUPERVISOR

Emphasize that not everyone is comfortable being a leader but it is a good learning experience and will help them in their other activities. Be aware that you may need to closely monitor and assist those who are shy and uncomfortable with this role.
Leadership Sign-up sheet

One copy for each team

One of the Interpersonal skills that you’ll be learning is being a leader. A leader has a lot of responsibilities and has to use lots of different skills to get the job done. Like all skills, the more you practice doing them—the better you do them. The purpose of this activity is to give everyone in your team the chance to practice being a leader. The main responsibility of the leader of each activity is make sure that the activity gets done in a timely and efficient way without making it tedious.

Choose an activity and sign your name next to it.

<table>
<thead>
<tr>
<th>Activity</th>
<th>I’ll be the team leader for this activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
</tr>
<tr>
<td>F/G</td>
<td></td>
</tr>
</tbody>
</table>
LEADER’S GUIDE: Interpersonal Skills

PARTICIPATING AS A TEAM MEMBER

PART ONE: Identifying personal skills that contribute to a team effort
DEPARTMENT: All
TIME: 10-15min to complete sheet + 30min for discussion
MATERIALS: 1 copy of Activity A per participant, pencils, pens

This activity helps the participants assess what skills they have acquired that will make them good team members.

1. Distribute Activity A sheets and pens/pencils.
2. Review the instructions together.
3. Give participants adequate time to complete the questionnaire.
4. Lead the discussion by asking what the participants have learned about themselves that they would like to share. Ask them to give one another feedback regarding their skills, potentials, and decisions.

QUESTIONS FOR GROUP DISCUSSION

- What skills are needed to be a good team member?
- Which ones do you already have?
- What do you need or want from other team members?
- Why is it important to know how to work well in a team?
PART TWO: Team building activity

DEPARTMENT: Education and Youth Programs

TIME: 60-90 minutes depending on group size

MATERIALS: instruction sheet, pipe cleaners, paper clips, modeling clay, straws, cardboard, popsicle sticks, bamboo skewers, yarn, glue, scissors, rocks, pine cones or acorns, florist wire, construction paper

NOTE: There should be one “building material” item per participant

This exercise will help students learn to follow instructions and work together as a team in solving problems.

1. Explain to the participants that they are going to build an imaginary habitat for themselves. They need only their imaginations and the “building supplies”.

2. Using ONLY the “building supply” that they were each given, give them 10 minutes to begin creating their habitat.

3. Announce that they may team up with one other person.

4. After another 15 minutes, allow teams of two to join another team. Instruct each group to select a spokesperson.

5. Teams can consolidate once again if all team members agree.

6. Allow an additional 10-15 minutes to finish the project.

7. Ask each group to explain the habitat and describe the process that led to its creation.

Questions to stimulate discussion:

- What was it like for you to try to create a structure alone?
- What was it like for you to have only one material resource to work with when you knew others were nearby?
- Was it easy or difficult to combine two ideas when you selected a teammate?
- Did it get easier or more difficult as the resources and the number of people increased?
- What did you learn about group communication? Is it easier to communicate in groups or on-to-one?
- Why is it important to know how to work well in a group?
LEADER’S GUIDE: Interpersonal Skills

WORKING WITH VISITORS

Learn the Do’s and Don’ts of dealing with visitors

**TIME:** 20-30 Minutes
**MATERIALS:** Activity B for each participant, flip chart

It’s important for young people to understand that dealing with visitors in the museum should be their top priority. In order to do this effectively they must learn what is and is not appropriate behavior.

1. Begin this exercise by asking them to think about how they like to be treated when they go to a movie theater, restaurant, shop, or theme park.
2. Ask them to divide into their assigned teams and remind them who the team leaders are for this activity. Give each team a piece of paper from the flip chart.
3. Have the team leader make 2 columns and write “do” at the top of one column and “don’t” at the top of other column. Ask each group to make a list of what they should and should NOT do when working with visitors.
4. Tell them that they have 10 minutes to complete the exercise.
5. Bring the groups together to share their lists. Generate a main list from the suggestions from each group.
6. Distribute Activity B. Compare and contrast the items on Activity B with the list that they generated.

Conclude the exercise by reminding them of the Golden Rule “do unto others as you would have them do unto you.”
UNDERSTANDING OURSELVES AND OTHERS

Goal: To help teens learn about themselves and their peers by engaging in introspective processes that identify the characteristics and group affiliations contributing to self-concept.

DEPARTMENT: All
TIME: Activity C.1 (15-25 minutes)
MATERIALS: Flipchart, markers

Note:
Activities presented in this section are ordered in the ideal order. The activities can be completed over a succession of several days, but be sure that the context is set for each activity and that there is a review from previous discussions or activities that would be helpful as you move from one activity to another.

“As we grow in awareness of one another…a wonderful thing begins to happen: we begin to care for the other as if the other is part of us. This is the interconnectedness that binds us together in love and appreciation.”

–Scott A. Hunt

Understanding ourselves is the first step toward understanding those around us. By exploring the multi-dimensional characteristics that make us who we are, we begin to gain a deeper meaning of what makes us who we are; how we define ourselves and how we are potentially perceived by others. As one engages in such a self-exploration, one begins to realize the social group identities that are a part of their identity that cannot be changed and others that are more fluid and can be altered.
DIVERSITY AND MULTICULTURALISM

Diversity extends beyond the original definitions from years ago that focused almost exclusively on culture. For insight on this evolution, we turn to VISIONS, Inc, the organization that helped the YouthALIVE! Network begin its diversity work.

VISIONS believes that “multicultural organizations and communities can be created and nurtured. …Our aim is to take Diversity to the next level—Multiculturalism. Our mission is to create environments where differences are recognized, understood, appreciated and leveraged for equitable benefit of all members of a system or group, and where all can perform to their full potential.”

http://www.visions-inc.org/vis-who.htm

“Multiculturalism means the accepting of differences and operating from a position of genuinely appreciating one’s own cultural identity and that of others.”

“ …Multiculturalism is “a process of change by which we learn to recognize, understand and appreciate our own cultural identities, as well as the similarities and differences of people from other cultural groups. These cultural groups can be based upon several characteristics and can include race, ethnicity, gender, age, sexual orientation, physical abilities, class, job status, religion, immigrant status, language and nationality.”

http://www.visions-inc.org/multi-c.htm
ESTABLISHING GROUND RULES:

Discussing multicultural issues such as the ones in this section can place teens in a vulnerable state. If the youth are made to feel guilty, or are ridiculed for their beliefs, the value of this exercise will be LOST!

• It is imperative that a safe environment is created where participants can share freely.
• Create a list of ground rules at the start of this section and solicit input from the teens to come to an agreed upon set of rules by all participants.
• Establishing such ground rules will begin to set an expectation of respect.
• On a flip chart sheet of paper or dry erase board write the title “GROUND RULES.”
• Start the list with maybe two points from the list and then solicit potential rules from the teens. If you feel that some points have been left out, be sure to incorporate them by filling in the blanks and again, solicit acceptance of the rules from the teens.

The ground rules should include the following:
1. No talking when others are talking.
2. When speaking, speak for yourself by using “I” and not a generalized “we,” “they,” or “you.”
3. No personal attacks.
4. The goal is not to agree—it is about hearing and exploring different perspectives.
5. Be aware of body language; it can be just as disrespectful as words (e.g. no sighing, no rolling eyes, no smacking of lips, etc.)

• Decide on how you are going to manage participation—raising hands versus speaking free.
• Make certain that you are taking into account the boisterous teen versus the more introverted teen in your decision.
• Be sure that there is a respect for those that reserve the right to pass and share only what they are comfortable with. As the facilitator adhere to the rules.
• Enforce the rules from the beginning and confront violations to ensure their integrity.
• Set the stage by sharing VISION’s statements on Diversity and multiculturalism.

• Using this broader context of diversity, as a group, complete the Understanding Ourselves and Others, Activity C.1.

• Write the letters for DIVERSITY GAME (Activity C-1) down the side of a sheet of flipchart paper or board and collect words that start with each of the letters. There can be several words per letter. Ask the teens to think about words or short phrases they would use to define diversity and encourage them to be creative. Prompts: What are broad terms you would use to define yourself? Write down a term or two from the list to get things started.
GETTING TO KNOW ME GUIDE

Time: 30-45 minutes (Activity C.2)
Materials: note cards, pencils/pens

Goal: To allow participants an opportunity to be introspective about their cultural profile and group affiliations and determining its relevance and importance to their own self-identity.

Part One:
1. Distribute the note cards so that each participant has 8-cards each.
2. Ask each participant to keep private their responses to each of the statements that you will read.
3. Read each category, listed below and ask the participant to write their answers on a separate card per category. (See Activity C.2)
4. Once the participants has provided answers for each of the categories, instruct them to now take each card and rank order them as far as its importance to them, personally.
5. Ask the group if anyone would like to share the category that they deemed most important to them and why.
6. Ask the group for similar explanations of the category or affiliation they felt were the least important to their self–identity.

NOTE:
• Leaders should engage in this ranking activity before hand for themselves to contribute their own personal stories to the group.
• Some categories may solicit varying levels of discomfort. Be cognizant of the group’s dynamic and overall tone of the discussion and be sure to re-enforce the ground rules of respect and the idea of exploring different perspectives and not necessarily to agree. Encourage discussion/explanations, but be sure not to pressure or allow participants to pressure individuals if they are unwilling to share beyond a certain point.
• Close out the activity by explaining to the group that there are a number of group affiliations and characteristics they contribute to who we are. The categories in this activity are not exhaustive, but only a select few of the things that represent the core of how one defines oneself.
INSIDE ME, OUTSIDE ME GUIDE

Time: 60 -90 minutes  (including the following activity and C.3)
Materials: Copies of old magazines of all types, scissors, glue, manila file folders, music

Part I
Goal: To allow participants an opportunity to create a pictorial representation of who there are by exploring things about themselves that most people may know or assume about them (depicted on the outside of the folder); and those characteristics, traits or interests that are only known to those closest to them (depicted in side the folder).

1. Pass out one file folder per person. Explain to the group that they are going to create a folder that expresses who they are by creating a pictorial representation of themselves.

2. Place a variety of magazines in a common pile that participants can refer to and cut from them as they desire. Provide also scissors and glue sticks.

3. Instruct the group to find pictures that represent things that are readily known about them and things that people may assume about them. (e.g. the outside of the folder may include: a person of their same gender/ethnicity, their favorite food or sport, favorite foods, etc.)

4. Instruct the group to find other pictures, words or representations of things that are not readily known about themselves that would represent them (e.g. words that express their love of poetry writing, pictures that may represent a career/academic goal, representation of things that have had serious impacts on their lives such as death, birth, illness, etc.).

5. Create a very relaxed environment and play music during the time the group is engaged in this activity. (Note: Prior to the activity you might solicit song titles from the participants and compile the songs on a playlist that is then played from an mp3 player, ipod system or other digital media (i.e. online radio channels, etc.).

6. Once the pictorial identity folders are complete solicit volunteers to explain their work.

7. Keep some of the folders on display with the permission of the creators.
Part II: WHO I AM POEMS

Goal: To create a poem that is a self-expression of who the teens are by creating a poem starting each line with “I am…” (See Activity C.3)

- This activity provides a creative outlet for them to define who they are and what is most important in how they see themselves and how they would like others to see them.
  - If the group is unsure of where to start suggest the following prompts: where they’re from regionally, interests/hobbies, favorite phrases, family traditions, etc. (Note: A sample poem can be found in Activity C.3.)
  - Leaders are encouraged to create their own “I Am” Poems in order to participate in the activity and contribute personally to the activity.
  - Once the activity is complete invite participants to share their poems with the group.
  - This activity is ideal for a LAST activity in a series focusing on diversity and multiculturalism. This activity requires high levels of trust among group members and a safe environment.

TIP FOR THE SUPERVISOR:
The more you are willing to share about you, the easier it will make it for the teens to share about themselves.

At the conclusion of the exercise, invite teens to reflect in their journals.

This activity was developed by Paul C. Gorski and EdChange: ww.edchange.org
ENHANCING COMMUNICATION SKILLS

PART ONE: Body Language
DEPARTMENT: All
TIME: 30-45 Minutes
MATERIALS: Activity D- Part 1/participant; 1 envelope with the emotions from Activity D-Part 2

1. Start a discussion with the participants about the different ways we communicate with each other. Ask if people always interpret what we say from our voice.

2. Is someone says “body language”, ask them to define “body language”. Otherwise, introduce the term and then elicit a definition.

3. Ask them to get into their assigned team and remind them who the team leader is for this activity.

4. Give each team leader an envelope which contains the different emotions.

5. Ask each team member to choose one of the emotions from the envelope and communicate that emotion to the group without using words. Team members should try to guess the emotion.

6. If time permits, allow them to choose again.

7. Hand out Activity D–Part 2 and discuss. Ask for a volunteer to make a new list of good communication skills based on Activity D and the discussion.

TIPS FOR SUPERVISORS

Ask a volunteer or staff member to make an appearance inappropriately dressed and using poor body language. Invite teens to critique and offer ideas for making a better first impression. Use this opportunity to discuss how different organizations have different standards for dressing, behavior, etc.
TEACHING EACH OTHER

Teaching each other to work with visitors

**DEPARTMENT:** All  
**TIME:** 30 - 60 minutes  
**MATERIALS:** Activity E, envelopes, scissors

1. You will need one set of each scenario per group. Put each description in an envelope and label it, i.e.: Visitor 1, Employee 1.
2. Divide group into assigned teams and remind them of the team leaders.
3. Explain that they will each be given a scenario that could take place in the museum and that each team member will have the opportunity to role play as a museum employee.
4. Quickly review what they have learned about tone of voice and body language. The team will then provide constructive feedback as to how well the person handled the situation.
5. Explain that the leader will be responsible for handing out the scenarios and making sure that each team member (including the leader) has an opportunity to role play as an employee.
6. Give the team leader the envelopes
7. Walk around the room and monitor the exercise.
8. If time permits, each young person should have the opportunity to role play an employee in two different scenarios.
9. To conclude the exercise, bring the young people back into one group and discuss the best ways to handle each scenario. Ask if there’s any new information they would add to Activity D.

**TIP FOR SUPERVISOR:**  
Some young people may find it difficult or embarrassing to do role playing. Some may also have a tendency to ridicule others because of their own embarrassment. Spend some time initially talking about this and reminding the teens to treat their team mates as they would like to be treated. This activity can be fun if it is approached in a positive way.
LEADER’S GUIDE: Interpersonal Skills

THE BIG PICTURE

BACKGROUND:
Through follow-up with YouthALIVE! participants we have learned that although the teens who participated in the YouthALIVE! Program enjoyed their experiences and felt they learned a lot from them, they did not see how this information and the learned skills transferred outside the museum. The purpose of "The Big Picture" is to help them see this relationship by showing how these skills will transfer to the workplace.

Learning about the transfer of skills

DEPARTMENT: ALL
TIME: 35 - 45 minutes
MATERIALS: Activity F/participant, flip chart, markers copy of Activity G for facilitator (you)

1. Review Activity F-G in advance. Activity G is for your information and includes some ideas to help you guide the teens through this exercise.
2. Write each of the questions from Activity F on a flip chart, using one page per question.
3. Divide teens into teams of 4 - 5.
4. Ask them to choose a leader or let them draw for the "honor". The leader will facilitate the discussion.
5. Pass out Activity F. Each team will discuss the questions and use the Activity F sheet for their notes.
6. Explain the work scenarios and the instructions for completing Activity F. Allow 15 minutes for their discussion.
7. Recording answers on the flip chart, ask each group to supply one idea at a time until all answers are covered. Ask them not to repeat something already stated.

Conclude by reinforcing the transfer of skills learned at the museum to other situations.
The activities in this module have provided the participants with the opportunity to take turns acting as a team leader. Now, it may be helpful to have them review the list of responsibilities they created at the beginning of the module and reflect on their experiences as team leaders.

1. Pass out the Leadership Sign-up sheets that the participants completed at the beginning of the module.
2. Ask the students to review the responsibilities of a team leader as recorded previously on the flip charts.
3. Questions to stimulate reflection are:
   - When was it most difficult to meet your team leader responsibilities?
   - When was it easiest to meet these responsibilities?
   - What did you learn about yourself as a result of being a team leader?
   - What advice about leadership would you give someone who wants to develop that skill?
LEADER’S GUIDE: Interpersonal Skills

ASSESSMENT

There are many ways of assessing growth in Interpersonal Competencies. Please use the ones listed below, as well as any of your favorite methods.

**OPTION:** Video tape teens enacting Activity E

**DEPARTMENT:** AV

**MATERIALS:** Flip Chart, marker, video camera

- Video tape teens as they act out museum scenarios.
- Use the playbacks to offer feedback and support to one another. Allow constructive suggestions only.
- Allow teens to operate the camera when possible or appropriate.

Even though teens may be shy at first, continue to video tape. Most teens love seeing themselves on camera and some bloom quickly in the spotlight.

**OPTION:** Journaling

**OPTION:** Youth Programs

**TIME:** 20-30 minutes + staff time to read comments

**MATERIALS:** One copy of Self-Assessment for group project for each participant, Teen SCANS journals, writing and drawing instruments

- Ask teens to write or draw one page in their journals about the Interpersonal module.
- Using the Self-Assessment as a guide, ask teens to: a) discuss in small groups, or b) elaborate on their responses in their journals. Staff may ask to see the forms before they are placed in the notebooks if desired.
- Ask for comments (either verbal or written) specifically on the five basic Interpersonal skills, i.e.:
  - Working with Visitors
  - Participating as a Team Member
  - Understanding Ourselves and Others
  - Teaching Others
  - Exercising Leadership

Be sure to respond to what the teens write, even if it's just a sentence or two of encouragement.
Interpersonal Skills

SAMPLE PROJECT

**TIME:** 45 - 75 minutes

**MATERIALS:** Flip chart, markers, paper, pencils

The following project combines many of the skills that the teens have already learned.

One of the problems that museums have had to deal with consistently is to keep visitors happy while they're waiting in line. This project will help the teens determine if this is a concern for visitors and, if so, what can be done about it.

**INSTRUCTIONS:**

1. Explain the problem above and ask teens to devise a questionnaire to poll visitors about the possible problem. Elicit what types of question to ask, How many questions to ask (not too many to tire the visitor), How to record the visitors' responses.

2. Agree on the questions to be asked and write them on the flip chart.

3. After constructing the questionnaire, have the participants do a practice run BEFORE using it with visitors.

4. Ask them to divide into their teams and to divide the tasks amongst themselves. Review communication skills and discuss the best way to approach the visitors.

5. Assign each team one area of the museum (at least one group should cover the admissions area). Tell them they have 30 minutes to talk to visitors and get their responses to the questions.

6. When they return, help them tally their findings, and then discuss what they have learned.

7. If the general consensus is that a problem does exist, brainstorm some strategies and solutions.

8. Write down all the suggestions on the flip chart without comment.

9. Once the brainstorming is over, discuss the suggestions and agree on two or three strategies.

10. Ask someone in the group to write these down and to send them or give them to the appropriate staff person who might be able to review them.
ACTIVITY A: Working in a Team

Look over the activity sheet.

Place a ✓ next the skills you now have. You don't have to be a world class swimmer to circle “I can swim”; but you do need to be able to do more than doggie paddle! Use a ⬗ to indicate the skills that you would like to strengthen.

Once you’re aware of your skills, see if you can add new ones that you can continue to develop.

Share information about yourself that you feel comfortable sharing. It's okay to pass if things seem too personal, but try to stretch out of your comfort zone a little bit every now and then.

Remember to support your team mates by not ridiculing answers or embarrassing them with rude comments.

Think of ways to provide your team mates with positive feedback when you see them working on developing their skills.

CIRCLE THE SKILLS YOU KNOW YOU HAVE NOW:

☐ I am a good organizer. ☐ I am punctual.
☐ I cook well. ☐ I can drive a car safely.
☐ I am a good swimmer. ☐ I can administer CPR.
☐ I am bilingual. ☐ I have good math skills.
☐ I am computer literate. ☐ I can type.
☐ I can sew, knit or crochet. ☐ I am trustworthy.
☐ I read well. ☐ I can style hair.
☐ I am honest. ☐ I can fix mechanical things.
☐ I can play sports well. ☐ I am dependable.
☐ I work well with children. ☐ I work well with animals.
☐ I follow instructions well. ☐ I sing well.
☐ I am a great dancer. ☐ I am an excellent friend.
☐ I listen well. ☐ I am artistic.

☐ ☐
Three of my strongest skills are:
1.
2.
3.

Three skills I would like to further develop are:
1.
2.
3.

In your opinion, which of the skills from the list are most important for being a good team member?
1. 4.
2. 5.
3. 6.

Questions for group discussion or personal reflection:

- Can you see new skills you have that you have never thought of?
- How can these skills translate into useable skills as an employee?
- How will the skills you wish to further develop help you?
- Which skills would you want members of your team to have?
- Which of them do you already have?
- Which ones do you want to further develop?
- Are there any additional skills that can be valuable to you?
- How can you best develop them?
### ACTIVITY B: Working with Visitors

#### DO'S AND DON'TS OF WORKING WITH VISITORS

<table>
<thead>
<tr>
<th>☺ DO ☺</th>
<th>☹ DON'T ☹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome them.</td>
<td>Don’t let visitors upset you.</td>
</tr>
<tr>
<td>Listen actively and communicate.</td>
<td>Don’t lose your patience.</td>
</tr>
<tr>
<td>Use good body language.</td>
<td>Don’t argue (EVER).</td>
</tr>
<tr>
<td>Dress appropriately and wear a uniform when required.</td>
<td>Don’t tell visitors you'll do something which you can't or won't do.</td>
</tr>
<tr>
<td>Help them promptly.</td>
<td>Don’t interrupt or rush the visitor.</td>
</tr>
<tr>
<td>Make them feel special.</td>
<td>Don’t touch someone without asking their permission.</td>
</tr>
<tr>
<td>Follow up if you say you'll do something.</td>
<td>Don’t pretend to listen when you’re not.</td>
</tr>
<tr>
<td>Learn as much as you can about the museum and your area.</td>
<td>Don’t use slang the visitor won't understand.</td>
</tr>
<tr>
<td>Use common courtesy.</td>
<td>Don’t ignore the visitor.</td>
</tr>
<tr>
<td>Show willingness to help.</td>
<td>Don’t act annoyed or bothered.</td>
</tr>
<tr>
<td>Be sensitive to the needs of different people</td>
<td>Don’t complain to the visitor!</td>
</tr>
<tr>
<td>Keep work area neat.</td>
<td>Don’t daydream.</td>
</tr>
<tr>
<td>Ask questions.</td>
<td>Don’t lie to a visitor or make excuses.</td>
</tr>
<tr>
<td>Say, “I'll find out”, if you don't know.</td>
<td>Don’t say, “I don't know,” or “That's not my department.” FIND OUT!!</td>
</tr>
<tr>
<td>Remain calm.</td>
<td></td>
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</tbody>
</table>
Activity C.1: Understanding Ourselves and Others

Write the letters for DIVERSITY GAME down the side of a sheet of flipchart paper or board and collect words that start with each of the letters. There can be several words per letter. Examples of responses are given below.

(Note: Use this as a leader’s guide; do not distribute to participants)

D = disability, different styles
I = individuals, intelligence
V = varying, various, variety
E = education, economic status
R = race, religion
S = similarities, sexual orientation, social class
I = individuals, intelligence
T = thought processes, team efforts, traits
Y = youth, years

G = gender, geographical origins
A = age difference
M = multicultural
E = education, economic status
Activity C.2: Understanding Ourselves and Others

(Note: This form is a guide for facilitators only and should not be distributed to participants.)

Read aloud each category below, allowing time for each participant to write a statement for each of the categories. Encourage participants to self-define the categories for themselves, but a list of suggestions/prompts are listed below.

Name: (This can be first name only; first, middle and last; or last name only)

Race/Ethnicity:

Occupation: (In most cases the response is student, but may differ)

Socio-economic Status: (Working, middle, upper)

Gender:

Religion/Spirituality: (Category or general philosophy if any)

Age:

Sexual Orientation:

Ability: (This can include a physical/emotional disability; sight, hearing, etc.)
ACTIVITY C.3: Understanding Ourselves and Others

Sample “I Am” Poem

I am a singer on a Broadway stage.  
I am a new found lover of preschool jingles and dance.  
I am one unit of a multi-ethnic family.  
I am an advocate for social change.  
I am a novice cooking enthusiast.  
I am a voice of reason.  
I am the calm after a storm.  
I am a mountain climber at the middle point of its destination on a steep hill in a windstorm.  
I am a pint of “Everything but the kitchen sink” Ben & Jerry’s ice cream.  
I am a McDonald’s Chocolate shake and French fries.  
I am a person of action.  
I am collard greens, sushi and brie.  
I am...
ACTIVITY D: Part 1-Communication Skills

Make one copy this sheet for each team.

For each team, cut along the dotted lines and place all the slips of paper in an envelope.

Give an envelope of the slips with the words to the leader of each team.

Ask each team member to choose one of the slips of paper from the envelope and communicate that emotion to the group without using words. The other team members try to guess the emotion that is being acted out.

Distribute Activity D and discuss.

<table>
<thead>
<tr>
<th>happy</th>
<th>sad</th>
<th>angry</th>
</tr>
</thead>
<tbody>
<tr>
<td>depressed</td>
<td>nervous</td>
<td>afraid</td>
</tr>
<tr>
<td>tired</td>
<td>pretending to be happy</td>
<td>pouting</td>
</tr>
<tr>
<td>embarrassed</td>
<td>excited</td>
<td>satisfied</td>
</tr>
<tr>
<td>confused</td>
<td>curious</td>
<td>frustrated</td>
</tr>
<tr>
<td>anxious</td>
<td>bold</td>
<td>thoughtful/pensive</td>
</tr>
<tr>
<td>surprised</td>
<td>amazed/awestruck</td>
<td>lost</td>
</tr>
<tr>
<td>timid</td>
<td>self-conscious</td>
<td>impatient</td>
</tr>
</tbody>
</table>
ACTIVITY D: Part 2-Communication Tips

We communicate with others on many levels — speaking, the way we dress, and our body language. Occasionally, people pay less attention what we’re saying and focus on how we’re saying something through our tone of voice and body language. Spend some time focusing on how we use words, voice, and body language to communicate. Practice with a friend and let him/her tell you how you look and sound.

Here are some suggestions on how to improve your communication skills. Can you think of more?

WORDS

When speaking with a visitor use mainstream words, not slang or jargon.
When you’re on the floor of the museum, try to learn the correct scientific names of exhibits, props, etc.
Avoid saying, “Uh,” “You know,” “Um.”
Use two of the most powerful phrases in the English language—“THANK YOU” and “PLEASE”—whenever you can.
Be aware of words and phrases that may offend people and avoid using them.

VOICE

Sit in a secure place where you can hear people speaking. Close your eyes and focus on their voices. How do they sound—happy, enthusiastic, and confident, angry, unhappy, or bored?
What is your reaction to someone whose voice is too loud or too soft?

BODY LANGUAGE

Look visitors in the eye.
Listen!! Give the visitor your complete attention.

Smile, even when you don’t feel like it!
Show you're listening by nodding your head and leaning forward.
Show confidence by standing up straight, but comfortably.
Leave your arms at your side or in front of you (crossed arms sometimes indicate that you're not listening).
Stay alert! you never know when visitors are watching!
ACTIVITY E: Teaching Each Other

Listed below are several scenarios that could happen in the museum. Divide up as directed by the supervisor and role play each scenario. In each scenario one person will be a visitor and the other will be a staff member or volunteer. Each of you should practice handling each of these situations involving visitors.

Scenario 1

Visitor 1
You are a first time visitor to the museum. You are interested in the exhibits, but you are looking somewhat puzzled. A staff member approaches you to ask if s/he can help. You ask a couple of general questions that you know s/he can answer and then some questions that s/he can't answer.

Employee/volunteer 1
A visitor is looking at an exhibit and appears to be interested but is having some problems understanding how the exhibit works. You approach the visitor to ask if you can help.

Scenario 2

Visitor 2
You're an angry visitor. You just had a fight with a friend before you came and you're not in a good mood. A staff member approaches you and offers you help. You are rude to her/him because you want to be left alone.

Employee/volunteer 2
You see a visitor looking at the exhibits and you approach him to ask if you can help.

Scenario 3

Visitor 3
You're a young visitor and you're very excited about the museum. You're running through the museum. A staff member asks you to stop running. You stop for a while, but then you start running again.

Employee/volunteer 3
The museum is very crowded and you see a young visitor running. You ask him/her to stop running and s/he does but then you see him/her doing it again. What do you do now?
### Scenario 4

**Visitor 4**  
You're a member of the museum trying to work with some of the exhibits, but you've discovered that several are broken. A staff member approaches to ask if s/he can help. You're very annoyed that the exhibits are broken and you let the staff person know it.  

**Employee/volunteer 4**  
You see a visitor who is looking at the exhibits. S/he seems to be upset. You approach her and offer your help.

### Scenario 5

**Visitor 5**  
You're visiting the museum alone when suddenly you feel sick. A staff person approaches you and you tell him/her you feel like you're going to faint.  

**Employee/volunteer 5**  
You see a visitor who appears to be ill. You approach to offer your help.
ACTIVITY F: The BIG Picture Worksheet

Here you have been learning to manage your time, materials, space, staff, and money. Now imagine that you have a job as a cashier in a store. As in the museum, working with customers is one of your most important responsibilities. How can you apply the interpersonal skills that you’ve been learning and practicing at the museum in your new job?

---

Skill area: Working with Visitors
What are some of the most important things you can do in working with your customers in the store?

---

Skill area: Participating as a Team Member
What will you need to do to work well as a team member in your new job as a cashier?

---

Skill area: Understanding Ourselves and Others
What sorts of things should you be aware of when working with different types of people?
ACTIVITY F: The BIG Picture Worksheet Continued

**Skill area: Teaching Others**

What opportunities would you have to teach others in this job?

**Skill area: Exercising Leadership**

What are the ways that you might show leadership in this job?
## ACTIVITY G: The BIG Picture—Leader’s Guide

<table>
<thead>
<tr>
<th>Working with Visitors</th>
<th>What are some of the most important things you can do to work with your customers?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Meet customer needs first.</td>
</tr>
<tr>
<td></td>
<td>• Use good communication skills, body language, etc.</td>
</tr>
<tr>
<td></td>
<td>• Be courteous. Say “please” and “thank you”.</td>
</tr>
<tr>
<td></td>
<td>• SMILE!</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participating as a Team Member</th>
<th>What will you need to do to work well as a team member in your new job as a cashier?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Cooperate and help each other.</td>
</tr>
<tr>
<td></td>
<td>• Ask questions.</td>
</tr>
<tr>
<td></td>
<td>• Talk to supervisor, co-workers, customers to find out their needs, Listen and follow instructions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Understanding Ourselves and Others</th>
<th>What do you need to know about working with different types of people?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Help customers with special needs.</td>
</tr>
<tr>
<td></td>
<td>• Be polite and friendly to everyone.</td>
</tr>
<tr>
<td></td>
<td>• Realize that just because someone is different doesn’t mean s/he is “weird”.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching Others</th>
<th>What opportunities would you have to teach others in this job?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Explain how a promotion works.</td>
</tr>
<tr>
<td></td>
<td>• Answer customer questions.</td>
</tr>
<tr>
<td></td>
<td>• Train a new employee.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exercising Leadership</th>
<th>What are the ways that you might show leadership in this job?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Recognize problems and offer solutions to management</td>
</tr>
</tbody>
</table>
Association of Science-Technology Centers  
YouthALIVE! in the Workplace: a Workskills Manual

This manual was designed to facilitate the museum-based teaching and learning of the set of workplace competencies identified by the US Department of Labor’s Secretary’s Commission on Achieving Necessary Skills (SCANS). This Commission—composed of representatives of education, business, labor and state government—defined a common core of skills as essential to students’ job readiness even in a rapidly changing economic environment. Each module of this manual is devoted to one SCANS competency or core skill area.

MODULE 3: UNDERSTANDING SYSTEMS

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KEY DIMENSIONS: Elements of a system
SCANS Competencies

The dictionary provides the following definition for the word system:
“a set or arrangement of things so related as to form a unity or organic whole.”
Another way of saying it is that a system is a collection of people, objects, or activities, which—by continuously influencing one another—create a whole unit.

The whole unit has a set pattern of behavior or performs a set job. Although this whole unit is larger than the parts or components that make it up, it is totally dependent on the connections or interactions between the parts. When one component is no longer interacting with another one, the system is likely to slow down to cease to operate.

Whether we are studying a social system like the family, an organizational system like the museum, a technological system like the telephone system, a biological system like the food chain, or an economic system like the banking industry we should be aware of several important elements common to any system:
1) interrelationships,
2) patterns of change,
3) cause and effect activity, and
4) feedback.
These terms imply that systems are dynamic and that change can occur in any of the parts. When applied to a work place setting, the concept of systems implies a shared responsibility for problems generated by or in that system.

According to SCANS, the most valuable workers in the future will be able to understand systems, monitor and correct performance within them, and even be able to improve upon or design them.
For entry level participants, the related skills are:

- to understand systems by learning the organizational structure of the museum;
- how to operate within that structure;
- and to understand the consequences of one’s actions on visitor, the museum staff, and on oneself.

Like the other SCANS modules in this manual, the Systems module offers LEADER’S GUIDES that give the person leading the activities an overview of the topic and general instructions on the accompanying activities. The ACTIVITY section contains all of the handouts that are mentioned in the LEADER’S GUIDES.
LEADER’S GUIDE: Systems Skills

Assessment Overview & Instructions

Before you start working on this module, assess your teens’ current level of skill in understanding systems and working within them.

PURPOSE:
This self-assessment provides baseline documentation of the teen’s perception and your perceptions of the teen’s skills prior to working in this module and museum coaching. When completed again by the supervisor, after a period of coaching and learning, this instrument can be used again to determine the teen’s progress.

1. Begin work on the module by asking all teen to individually do the Self-Assessment. Make sure each teen writes his/her name, the date, and his/her supervisor’s name.

2. You should also complete a Self-Assessment for each teen.

3. When everyone has finished, ask them to go back over their responses and underline the specific skills they think they need to work on.

4. The supervisor and teen should compare their assessments of the teen’s skills and agree upon 5 specific skills to be worked on immediately.

5. The teen should then complete the Goals for Improvement sheet. When s/he has completed the Goals worksheet, the supervisor should assist and approve.

6. After the teen has completed the module’s activities and after s/he has practiced these skills in one or more departments of the museum, the supervisor or coach should again complete the Self-Assessment instrument for indicators of progress toward competency.
Self-Assessment Worksheet

My Name: ____________________________ Date: ____________
Supervisor’s Name: ____________________

How skilled am I in understanding and working with SYSTEMS?
Rate yourself.

<table>
<thead>
<tr>
<th>LOW</th>
<th>AVERAGE</th>
<th>HIGH</th>
<th>Does Not Apply</th>
<th>Comments (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I’m not comfortable with this</td>
<td>I’m starting to work on this</td>
<td>My Skills are Fair</td>
<td>My Skills are Good</td>
<td>My Skills are Excellent</td>
</tr>
</tbody>
</table>

1. Understanding Systems
   a. I understand how systems represent organizations/processes/etc.  
      1  2  3  4  5 N/A
   b. I know how to interpret a chart or diagram that represents a system.  
      1  2  3  4  5 N/A
   c. I can identify the major components of a system.  
      1  2  3  4  5 N/A
   d. I understand how each component depends/works with other components.  
      1  2  3  4  5 N/A
   e. I understand how to work effectively and well with/in different systems.  
      1  2  3  4  5 N/A

2. Monitors & Corrects Performance
   a. I can predict the impact of my actions on a system.  
      1  2  3  4  5 N/A
   b. I can identify problems within systems.  
      1  2  3  4  5 N/A
   c. I can diagnose problems.  
      1  2  3  4  5 N/A
   d. I can devise solutions to problems.  
      1  2  3  4  5 N/A
   e. I can implement solutions.  
      1  2  3  4  5 N/A
   f. I can assess how effective solutions are.  
      1  2  3  4  5 N/A

3. Improves & Designs Systems
   a. I can assess systems to determine usefulness.  
      1  2  3  4  5 N/A
   b. I can research alternative/new systems  
      1  2  3  4  5 N/A
   c. I can improve/design system to meet needs better  
      1  2  3  4  5 N/A
Goals for Improvement

To become more competent in Systems skills, I need to work on specific areas.

<table>
<thead>
<tr>
<th>SKILL</th>
<th>ACTION</th>
<th>HELP NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I will try to meet these goals by ___________________________ DATE

Signed:__________________________________ DATE:__________________
Introducing: Systems Skills

We live in a world comprised of systems. One definition of a system is a set or arrangement of things so related or connected as to form a unity or organic whole.

Another way of saying it is that a system is a collection of people, objects, or activities, which—by influencing one another—create a whole unit. This whole unit has a set pattern of behavior or does a set job.

Although this whole unit is larger than the parts that make it up, it is totally dependent on the connections or interactions between them. When one part is no loner interacting with another, the system is likely to slow down or stop.

Whether we are studying a social system like the family, an organizational system like the museum, a technological system like the telephone system, a biological system like the food chain or an economic system like the banking industry, we should be aware of several important elements common to any system:

• interrelationships
• patterns of change,
• cause and effect activity, and
• feedback.

These terms infer that systems are dynamic and that change can occur in any of the parts. Perhaps it helps to begin by thinking about some systems that are probably very familiar to teens:

- Solar system
- Human digestive system
- A flashlight
- A basketball team
- An ecosystem
- Human circulatory system
- A School system
- A cell phone

What is the purpose or goal of each of these systems?
What components make up each system?
How do the components interact with each other?
How do you know when the system is working the way it was meant to work?
What happens if one of these components malfunctions, is damaged, or is missing?

We encounter systems in the home, the workplace, the media, and throughout our daily lives. Understanding systems makes it easier to understand how many processes in the world take place. When applied to a workplace setting, the concept of systems infers a shared responsibility for problems generated by or in that system.
Learning to identify systems, understanding how they work and determining one’s place in a system (when appropriate) are important skills that students can begin acquiring through working with this module.

According to SCANS, the most valuable workers in the future will understand systems, monitor and correct performance within systems, and even improve or design systems.

For participants in museum-based youth programs, the systems-related skills are:

- learning the organizational structure of the museum
- learning how to operate within that structure
- understanding the consequences of one’s actions on visitors, the museum staff and on oneself.

SCANS has determined that, in addition to understanding systems, tomorrow's workers need to monitor and correct performance in a system and improve or design systems.

Key Dimensions of the SCANS Systems Skills

Each of the SCANS systems skills has at least two key dimensions. A more detailed discussion of these dimensions may be useful as a first step in developing curricula.

1) The first skill, understanding systems, involves basic knowledge of:
   - social, organizational, and technological systems; and
   - how to operate effectively within them.

Although the SCANS definition of understanding focuses on systems–social, organizational, and technological–that are especially prominent in the workplace, there are many other natural and man-made systems.

From kindergarten on, there will be many opportunities to introduce students to systems. Moreover, developing knowledge of different kinds of systems should help to inculcate the habit of “systems thinking,” as discussed below.

To operate effectively in an organization, the worker must know how an organization's structures relate to its goals, which people to ask for information or resources, how to respond to the demands of the organization, and how to function within its formal or informal codes.

2) The second systems skill, monitoring and correcting performance, has four dimensions:
   - distinguishing trends,
   - predicting impacts on system operations;
   - diagnosing deviations in systems' performance; and
   - correcting malfunctions
The first dimension rests on the SCANS foundation skills of reading, listening, and seeing things in the mind's eye. The last three dimensions—predicting, diagnosing, and correcting—call for application. To make predictions and diagnose deviations in a system's performance, one must already have knowledge of how the system works.

3) The third skill, **improving, or designing systems**, has two dimensions:
- suggesting modifications to existing systems; and
- developing new or alternative systems to improve performance.

Improving or designing systems involves making suggestions, recommending alternative system designs, and, sometimes, responsibly challenging the status quo. In many situations, good oral and written communication skills, part of the SCANS foundation, are necessary for effectively presenting system improvements.

Finally, improving or designing systems requires **synthesis**, insightful combination of previously acquired forms of knowledge. People who can improve or design systems are likely to have in-depth understanding of several similar systems. Above all, they are likely to have had multiple opportunities to try to improve or design a real system.

**What It Takes to Be Ready for Work**

Another way to look at systems skills is to consider what it takes to be ready for work. Below are descriptions of actual work tasks illustrating the three systems skills. These examples from *Teaching the SCANS Competencies* confirm the importance of the systems skills and dimensions for some common occupations. They carry, in addition, implications about some specific skills that high school graduates would do well to acquire.

**SCANS Skills at Work:**

A medical assistant working in a clinic must *understand* the system of the organization and know how to operate effectively within it. The assistant needs to:
- understand the organization's ultimate goal (i.e., excellent patient care);
- maintain knowledge of the clinic's organization, including the organizational chart; keep up with changes;
- respond to demands of the system when assignment changes occur;
- keep current on which departments in the system handle what specialties; and
- learn which resources outside of the clinic offer patient services.

Implicit in these requirements is a complex organization that continually changes staff assignments and the responsibilities of different departments. To facilitate both initial learning a job-entry and later keeping track of the changes, it would be most helpful if the high school graduate knew how to draw and interpret an organizational chart.

A travel agent must *monitor and correct performance* to ensure that all customers are well-served in a timely manner.
- monitoring the performance of other travel agents as well as oneself to ensure that
- correcting one's own mistakes, as well as those of other agents; and
- contacting customers to inform them of any mistakes or changes in travel.
This description indicates that the travel agent needs to develop an effective monitoring process. This could take different forms, such as surveying customers or periodically reviewing sample of itineraries. In addition, understanding and tracking trends in travel preferences to improve the agent's effectiveness.

A traffic shipping in and receiving clerk maybe required to improve or design a system:

- determining more efficient ways to stack merchandise;
- observing the processes involved in loading, unloading, and moving merchandise
- developing ideas for performing these activities more efficiently; and
- sharing the ideas with the supervisor, and implementing changes which ultimately save money or prevent damage to merchandise.

These examples of how different professionals use systems to make their job easier are just a few applications of systems. Understanding systems can help make any job much easier to do.

For a complete discussion and further examples of applications of skills in working with systems see Teaching the SCANS Competencies http://wdr.doleta.gov/SCANS/teaching/teaching.pdf
There are lots of ways to explain how the world works. Basically, the world is made up of systems. A system is essentially any collection of people, objects, activities, or ideas that continuously influence one another. Because of this constant interaction, the parts or components of a system become one unit. For the system to work well, the components must stay connected. When a part of a system breaks down or is removed, the entire system may be affected.

Thinking in terms of systems often makes it easier to understand how a complex organization or process works.

To begin this module you’ll be doing some research. Use the next week to observe and collect information on examples of systems at work in your immediate environment.

<table>
<thead>
<tr>
<th>System</th>
<th>Components</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>At home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At the museum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the community</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LEADER’S GUIDE: Systems Skills

IDENTIFYING AND UNDERSTANDING SYSTEMS

PART ONE: Introducing the concept of systems

COACHING CONNECTIONS: All

TIME: 40 Minutes (approx.)

MATERIALS: Activity A and Teen Tract for each participant

Use the introductory material to open the discussion of “systems” as a critical concept in today’s world, particularly the workplace. From this initial discussion several points must be understood about a system:

• It is comprised of parts which interact with each other.
• The parts influence one another to create a whole.
• The whole is bigger than its parts.
• For the system to operate effectively the parts must remain connected, with either information, energy, or products flowing between the parts.
• When one part of a system breaks, the entire system may malfunction.
• Because systems are dynamic, and not static, they change.
• Social, organizational, and technological systems are particularly important in work force preparation.
• Other types include economic, political, biological, and physical systems.

1. Divide the group into teams.
2. Distribute copies of Activity A.
3. Ask teams to study the 2 examples of systems sketched on the activity sheet, and sketch a system of their choosing.
4. Instruct them to remove one component from this system and describe the impact on the system.
5. Each team should take 3 minutes to present its system to the other teams.
6. Distribute Teen Tract and ask teen to bring in their research findings for the next session.
LEADER’S GUIDE: Systems Skills

UNDERSTANDING MUSEUM’S ORGANIZATIONAL STRUCTURE

PART ONE: Who Does What?

COACHING CONNECTIONS: All

TIME: 60 Minutes (approx.)

MATERIALS: Copies of your institution’s current organizational chart; if you don’t have access to your institution’s organization chart, a generic one is included at the very end of this module, Activity B for each participant, flip chart, markers, paper and pencils for participants.

PREPARATION:

Ask one staff person in each department to allow teens to interview him/her for 15 minutes. Schedule appointments for the day or session after the exercise. Interviews can be conducted simultaneously.

- Review the meaning of “system”. Ask teens to briefly report on systems they identified at home, school, the museum, and in the community. Explain that a large well-run business has an organizational system.

1. Distribute Activity B and the museum’s organizational chart. Working in small groups, give them 5-10 minutes to complete Section 1. Review their answers.

2. Have the teens reconvene into their small groups and give them 10-15 minutes to complete Section 2. Review their responses.

3. Have the teens reconvene into their small groups and give them 10-15 minutes to complete Section 3. Review their responses.

4. Assign teens/groups their interviewees. Brainstorm a list of questions about the organization of the museum that each teen/group can ask their interviewee. Remind the teens that they have only 15 minutes to interview the staff member and to take notes so that they can report back to the whole group.

5. When everyone has reconvened, review the teens’/groups’ findings.

6. Ask the teens to make an organizational chart for their youth program.
UNDERSTANDING SYSTEMS

PART TWO: Operating within structure
COACHING CONNECTIONS: All
TIME: 30-45 Minutes (approx.)
MATERIALS: Activity C for each participant, organizational chart, flip chart, paper and pencils.

1. Distribute Activity C and review the instructions together.
2. Give the teens 15 minutes to complete section 1.
3. Ask the participants to share their responses and record them on the flip chart.
4. Discuss what the participants learned about their place in the museum system.
5. Collect the worksheets for use in the next session.
LEADER’S GUIDE: Systems Skills

**MONITORING AND CORRECTING PERFORMANCE**

**PART ONE:** Reflecting on performance and its impact

**COACHING CONNECTIONS:** All

**TIME:** 30-60 Minutes (approx.)

**MATERIALS:** Completed Activity C worksheets.

1. Return the completed Activity Sheets.
2. Ask teens to split into groups of 4 - 6 persons.
3. Explain that teens are to review their roles in the museum as they described them in Section 1 of Activity C. Give them 15 minutes to complete Section 2.
4. Record their findings on the flip chart.
5. Discuss what the participants learned about their place in the museum system.

**Tip for the Supervisor**

You may wish to extend the conversation by asking teens the following questions:

- How do you feel when someone tells you they’ll do something and then doesn’t follow through?
- Have you ever told someone you would do something and then not done it? Why? How did you handle it? How did they handle it? How did you feel about yourself?
- What’s the best thing to do if you know you’re not going to be able to do what you said you’ll do?
LEADER’S GUIDE: System Skills

THE BIG PICTURE

BACKGROUND:
Through follow-up with youth program participants we have learned that although the teens who participated in these programs enjoyed their experiences and felt they learned a lot from them, they did not see how this information and the learned skills are transferable outside of the museum. The purpose of "The Big Picture" is to help them see this relationship by showing how these skills will transfer to the workplace.

Learning about the transfer of skills

DEPARTMENT: ALL
TIME: 35 - 45 minutes
MATERIALS: Activity D for each participant, copy of Activity E for facilitator, flip chart, markers

1. Review Activity Sheets D and E in advance. Activity E is for your information and includes some ideas to help you guide the teens through the Activity D exercise.

2. Write each of the questions from Activity D on a flip chart, using one page per question.

3. Divide teens into teams of 4-5.

4. Ask them to choose a leader or let them draw for the "honor". The leader will facilitate the discussion.

5. Pass out Activity D.

6. Explain the work scenarios and the instructions for completing Activity D. Allow 15 minutes for their discussion

7. Recording answers on the flip chart, ask each group to supply one idea at a time until all answers are covered. Ask them not to repeat something already stated.

Conclude by reinforcing the transfer of skills learned at the museum to other situations.
LEADER’S GUIDE: Systems Skills

**ASSESSMENT**

**TIME:** 30 Minutes

**MATERIALS:** Construction paper, scissors, crayons, glue

1. Arrange supplies beforehand.
2. Read the instructions below and allow teens to work individually.
3. Ask teens to share their work.

Instructions for teens:

Using everything you know about systems, create an imaginary system that might be used to run a small business. Be sure to think about and answer the following questions as you work:

- What is the main purpose of the company you have created?
- What components will be needed?
- How many people will be involved?
- What will their roles be?
- How do the various components support each other, the purpose of the business and the people involved?
ACTIVITY A: Identifying Systems

1. Working in a small group, study the 2 examples of systems given below and identify the components of each one. Remove one of the components and describe the impact this has on the system.

2. Still working as a team, decide on a system to sketch and create a diagram that illustrates and clearly explains how the different components of your system work together.

Examples:

Krystals Drawing of a bulb plant lifted from the soil
(YES Teen Program, St. Louis Science Center)

Simple electrical circuits
ACTIVITY B: Understanding Organizational Charts

In a small group, take a look at the organizational chart for your institution. An organizational chart is a visual representation of a system.

Section 1
What can we learn from looking at an organizational chart? Place a check next to the information that you can find from looking at the chart.

☐ how many people work here.  ☐ how people communicate here.
☐ who does what.  ☐ the chain of command.
☐ where departments are located in the museum.  ☐ how big the institution is.
☐ how each department impacts the other departments.  ☐ Other: please specify __________________________

Section 2
Answer the following questions using your institution’s organization chart.

A visitor asks you, “who do I speak to if I want to make a donation to this museum?”

Your community partner asks you, “who do we contact to arrange a group visit?”

A visitor tells you that the water fountain doesn’t work. Who do you contact?

A visitor asks, “which day is the admission free?”

A visitor inquires, “where do I go to become a member of the museum/zoo?”

Section 3
Where do you fit into the organizational chart?

Explain the purpose of the system called a “museum”, “zoo”, “aquarium”, or botanic garden.
ACTIVITY C: Understanding Systems

Name:___________________________  Date:____________________________

SECTION I

Imagine that figure in the middle of the page is you. On the surrounding lines, list all the jobs you have in the museum. Be sure to hand this in to a staff member as it will be needed for the next activity.

__________________________________________________
__________________________________________________
__________________________________________________

SECTION II

Now list how the following will be affected if the job you normally do is not satisfactorily completed, (meaning on time and correctly done)

<table>
<thead>
<tr>
<th>Youth Program Staff</th>
<th>Museum Visitors</th>
<th>Other Museum Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>both paid &amp; volunteer</td>
</tr>
</tbody>
</table>
ACTIVITY D: The BIG Picture Worksheet

You have been working at the supermarket for a couple of weeks. What can you apply from the SCANS Systems module that will help you understand the systems in the supermarket better? How can understanding systems help you at home, at school, in other places and situations? Answer the questions below using your knowledge of systems.

**Understanding Systems**

- Could the grocery store be considered a system?
- Identify 2 systems (or sub-systems) that operate in a grocery store.
- What happens if one of those systems breaks down?

**Monitoring & Correcting Performance**

- As a cashier, where do you fit into the system?
- What would happen if you were late or didn’t show up for work?
- How would it affect you if someone else didn’t show up to work?
- Imagine you overcharge a customer. What would be the best way to correct the problem?
- Whose performance would you spend the most time monitoring & correcting?
- Why?
ACTIVITY E: The BIG Picture Leader’s Guide

Understanding Systems
1. Explain why the grocery store can be considered a system?
2. Identify 2 systems (or sub-systems) that operate in a grocery store.
3. What happens if one of those systems breaks down?

| 1. The store’s various departments serve as components that function together to meet customers’ food purchasing needs. |
| 2. Systems or sub-systems might include—payroll department, accounting department, produce department, bakery, deli, meat department, employees scheduling department, distributing paychecks, inventory & stockroom, customer service, etc. |
| 3. The entire business operates less effectively and may even have to shut down until the system is repaired. Profits will be affected. |

Monitoring & Correcting Performance
1. As a cashier, where do you fit into the system?
2. What would happen if you were late or didn’t show up for work?
3. How would it affect you if someone else didn’t show up to work?
4. Imagine you overcharge a customer. What would be the best way to correct the problem?
5. Whose performance would you spend the most time monitoring & correcting? Why?

| 1. There are several different perspectives, one might be from the point of view of customer service. The customer interfaces with the cashier, charging the customer for the items, receiving the money, giving back change and passing the payment on the accounting office. |
| 2. Another person might have to stay late or come in on their day off. It could result in customer dissatisfaction. It might mean you’re overlooked for a raise or promotion, or even result in getting fired. |
| 3. Turn the tables for #2. |
| 4. Apologize to the customer and explain the problem and what you’re going to do. Contact your supervisor. She’ll help you fix the problem. |
| 5. Your own! That’s the only performance you can affect right now. |
RIVERSIDE SCIENCE AND NATURE MUSEUM

Board of Trustees

Museum Director

External Affairs
- Development
- Public Relations
- Special Events
- Membership
- Visitor Services

Internal Affairs
- Business
- Human Resources
- Security
- Maintenance

Exhibits
- Exhibit Design
- Fabrication
- Bio Science
- Physical Science
- Technology

Education
- School Programs
- Youth Programs
- Camps & Classes
- Outreach
- Family Programs

Special Events
- Business
- Human Resources
- Security
- Maintenance

Exhibit Design
- Fabrication
- Bio Science
- Physical Science
- Technology

School Programs
- Youth Programs
- Camps & Classes
- Outreach
- Family Programs
TOOLS FOR HELPING TEENS SUCCEED

Teens can benefit from many kinds of support as they mature. It is important to guide them in self-awareness so that they can make positive choices. Many teens are unable to answer even the simplest questions about personal preferences or goals. Some have never even thought about their lives in proactive. One way of helping them think about their direction is to administer a Personal Profile Inventory. This can give them a concrete focus as they see information about themselves in writing. Once preferences are identified teens can proceed to set appropriate short and long term goals for themselves. As goals are achieved, their self-esteem is increased and teens gain a sense of control over their destiny. This is vitally important for teens who may have given up hope of having the life they desire. In effect, we are helping teach them how to create their future. In order to do so, they may require mentoring, guidance and support in reaching their goals. Peer coaching can be another effective tool to assist teens in giving feedback and encouragement to their counterparts. It also helps develop self esteem and confidence, as they see the results of their work.

This section of the module provides the tools needed and includes:

- A personal survey to help teens identify their preferences
- A goal setting activity to establish short & long term goals
- Peer Coaching information
- Sample Job Descriptions
- Looking for a job
- Interviewing tips for teens
TEN OPPORTUNITIES TO HELP TEENS SUCCEED

As teens mature, there may be many issues they must work to sort out and resolve. One way to assist them is to provide a safe, yet stimulating environment outside of the home; an environment where they can continue to grow and develop, where they can take risks and not be in jeopardy and where they can learn about themselves and their world through direct experience. The following opportunities are valuable in helping teens develop into mature competent adults.

1) **Feeling safe and secure** - Teens need to know they are safe both physically and emotionally. Create work environments and program formats that are safe and secure.

2) **Developing high self-esteem** - Research shows that one way people can develop better self esteem is to establish both long and short term goals. Allow teens to self-assess themselves in attaining their progress to also build higher self-esteem.

3) **Practicing respect for self and others** - Discussions of respect for self and others along with staff modeling desired behavior can have an impact on teen behaviors. Set up the expectation that teens will be treated as young adults as long as they act accordingly. Be aware that teen behavior can vary from moment to moment. This practice can also help teens develop relationship bonds and trust.

4) **Making decisions**. Whenever possible allow teens a choice. This provides opportunities for teens to accept the rewards of good decisions and handle the consequences of the bad ones (provided you don’t rescue them from experiencing the results.)

5) **Developing strong personal values**. Staff can best help teens develop personal values by conducting discussions on values and ethics (how many come from the media, from peers, etc.) and from leading exercises in values clarification.

6) **Experiencing hope and excitement about life itself**. Too many teens have lost hope. Goal setting and attainment can help teens feel empowered. Also create opportunities for the teens to have fun by planning recreational and social events. Include some cultural enrichment also.

7) **Developing broad horizons and global perspectives**. This can be tied in to setting long term goals, career exploration and academic planning. Also plan activities to help teens understand teen issues in other parts of the world along with current global issues of any nature. Focus on cooperation and positive effects rather than what is wrong with the world.

8) **Knowing and using good basic communication skills**. These skills include listening, speaking, writing, and reading. It also includes being able to communicate using technology such as a fax machine or computer. Teens that are
unable to communicate well using various modes will be at a great disadvantage as adults.

9) **Being able to think critically.** Teens will need to know how to use critical thinking and problem solving skills to survive in the world of the 21st century. Help them develop these skills by engaging them in inquiry-based learning, math and science related activities throughout the museum.

10) **Overcoming physical and mental challenges.** Along with vigorous physical activity teens need to be challenged mentally. Give them problems to solve and keep them active. They need positions in the museum that encourage them to think and be on their toes. Teens are strengthening their muscles by overcoming obstacles. Keep them challenged to prevent boredom.
MY PERSONAL INVENTORY
Part I

Planning for your future will be more successful if you can identify your interests and strengths. To help figure out what you like and what you do well, try answering these questions.

My Likes and Dislikes

1. What I most like about people is:__________________________________________
   ______________________________________________________________________
   ______________________________________________________________________

2. My favorite person is:___________________________________________________
   because_________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________

3. What I most dislike about people is:_____________________________________
   ______________________________________________________________________
   ______________________________________________________________________

4. What I like most about school is:________________________________________
   ______________________________________________________________________
   ______________________________________________________________________

5. What I dislike most about school is:_____________________________________
   ______________________________________________________________________
   ______________________________________________________________________

6. What I like most about working or learning at the museum is:________________
   ______________________________________________________________________
   ______________________________________________________________________

7. What I dislike most about working or learning at the museum is:_______________
   ______________________________________________________________________
   ______________________________________________________________________

8. My favorite activities are:_____________________________________________
   ______________________________________________________________________
   ______________________________________________________________________

9. My least favorite activities are:_________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
Adapted from *Majoring in High School: Survival Tips for Students* by Carol Carter pp 34-38.
MY PERSONAL INVENTORY
Part II
What Interests Me

1. I am curious about: _____________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________

2. I spend time thinking about: ____________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________

3. I am concerned about: _________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________

4. I am fascinated by: ____________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________

5. I like to read/write about: _____________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________

Adapted from Majoring in High School: Survival Tips for Students by Carol Carter p 36.
MY PERSONAL INVENTORY
Part III

My Talents and Skills (at the museum, at school, at home - anywhere)

1. I feel most confident about myself when I am
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

2. I am usually considered among leaders when I am
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

3. People compliment me when I
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

4. The things I get encouraged to do most often are
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

5. My best skills, ranked first to last, are
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

6. The skills I don’t have and want to acquire, ranked first to last, are
   ___________________________________________________________________
   ___________________________________________________________________
Adapted from *Majoring in High School: Survival Tips for Students* by Carol Carter pp 36-37.
Looking for Patterns in Your Inventory

Just for fun, try to code your responses to Parts II and III of your Personal Inventory using the following system:

1. Put a \texttt{AP@} next to any answers that involves you with \texttt{people}. For example, \texttt{Ateaching little kids@}, \texttt{Aanswering visitors@ questions@} or \texttt{Aselling in the gift shop@}.

2. Put an \texttt{AI@} next to any answer that is about \texttt{information or ideas}. For example, \texttt{Areading about animals@} or \texttt{Alearning about the science of the exhibits@}.

You will have some responses that will require more than one code. For example, \texttt{Aanswering visitors@ questions@} is about people and information, so you would place \texttt{AP@} and \texttt{AI@} next to it.

3. Put an \texttt{AO@} next to any answer that shows you have an interest in \texttt{objects}. For example, \texttt{Ausing the microscope@} or \texttt{Aorganizing materials for exhibits@}.

4. You and your friends may want to agree on adding another category if all of your interests and talents will not fit into these categories.

Now study your \texttt{AP@} answers as a group. Do the same thing for your \texttt{AI@} answers and \texttt{AO@} answers. Do you have more answers in any one particular category. Do you seem to prefer working with people, or ideas and information or with objects? Can this information assist you in thinking about what kinds of careers you might like or NOT LIKE?
GOAL SETTING FOR SUCCESS

*Going through life without goals is like driving a car with a blindfold on.*

Brian Tracy - The Psychology of Achievement

It has been proven that people who establish and strive for goals are 7 times more likely to succeed than those who don’t but for some reason, only a small percentage of the population set and accomplish goals. Helping teens set goals for themselves is valuable because it can enable them to plan their lives rather than merely responding to outside stimuli.

Before starting to teach the SCANS competencies, lead the teens in the goal setting activity by following the instructions on the following page. This exercise can help the teens see the personal relevance of the training.

WITHOUT GOALS TO GUIDE US,
WE MAY BE JUST GOING AROUND IN CIRCLES.
GOAL SETTING ACTIVITY FOR TEENS

BEFOREHAND: Be sure there is a blank paper, 3 copies of the Goals statement sheet (3-hole punched) on the next page, and a pencil for each teen.

You may wish to complete the exercise yourself so you can respond to student questions and participate in sharing.

1. Ask teens to take the personal inventory they have completed and review the answers on the final question sheet.

2. Now, ask them to write down everything they want to Be, Do, or Have, on a blank sheet of paper.

3. Ask them to prioritize by placing #1 by the most important, #2 by the next in importance and so on.

4. Have teens circle the 2 most important long term goals (anything that will take over 6 months to accomplish) and their first priority short term goal.

5. Distribute 3 copies of the Goal Statement sheet to each teen and ask them to complete a sheet for each one of their 3 goals.

6. Ask teens to select a partner to share with (allow 5 minutes per person).

7. Reconvene group, then ask teens to close their eyes and pictures themselves achieving one of their goals.

8. Ask teens to share their thoughts and feelings.

9. Explain that teens can do this exercise with as many goals as they like.

10. Inform participants that they will revisit this goal with their sharing partner at the next group meeting. (Note this and add 10 minutes to next meeting agenda)

11. Explain that goals can be rewritten or adjusted along the way if needed.

12. Have teens place the goal statements in their portfolios.
GOAL STATEMENT

STATE GOAL BELOW:

________________________________________________________

________________________________________________________

Answer these five questions.

1. Is this really my goal?
2. Is it morally right and fair to everyone concerned?
3. Will reaching this goal help me become who I want to be?
4. Can I emotionally commit myself to reach this goal?
5. Can I visualize myself reaching this goal?

All five questions need to be answered YES for each goal in order to proceed. If they are not, select another goal instead.

The benefits of achieving this goal are:

The obstacles to overcome in achieving this goal are:

These people or groups can help me reach this goal:

I will need these skills or knowledge to reach my goal:

This is how I will proceed:

I will meet this goal by this time:
WHAT ABOUT YOUR RÉSUMÉ?

Can you summarize yourself, your accomplishments and your skills in one page? It may not be easy, but if you can create a good résumé, it can often be the key to an interview for college or for a job.

What should your résumé look like?
$ always typed  $ concise  $ neat and clean  $ well-organized

What should your résumé include?

1. Personal information
   $ Your full name, address, telephone number and social security number should be placed at the TOP OF THE PAGE.

2. Job Objective or Educational Goal
   $ What kind of job or responsibilities are you seeking?

3. Work Experience
   $ List the jobs that you have had, with a description of responsibilities for each one listed. This gives you a chance to indicate the skills you utilized in doing the job. For each job, in addition to your job title and what you did there, you must also name the organization and the dates you worked there. The jobs should be listed chronologically. Begin your list with our most recent job, and finish the list with your earliest job.

4. Education
   $ Identify your high school and the number of years you have been a student there. If you have attended more one high school, be sure to list the other high schools. Also list academic summer programs in which you have participated, your museum activities, and if you have been on the honor role, indicate it. If you are seeking a job with this resumé, and you have been accepted into a college, include that and any information about scholarships that you may have been awarded.

5. Activities and Honors
   $ List teams, clubs or organizations to which you belong, noting those in which you are an officer. Indicate community service projects in which you have been involved. List all honors or awards you have received in high school, in the community or in the museum.

6. References
   $ At the bottom of your résumé, type  
   $ Personal references are the names of people who know you well and can talk about your skills, your attitude, your sense of responsibility, your self-discipline, or even the kind of
employee you have been: a teacher, supervisor, a relative, a friend, a minister, etc. Be sure to include one of the museum staff persons with whom you work.

These names should be typed on a separate page, along with the organizational affiliation, address and phone number for each. This way, you will have this important information ready if you are asked for it during an interview.

**What if you have never had a job?**
If you have never had a job, instead of Work Experience you can create a section on Skills. Think about all the things you can do well, the tasks and how you perform them at the museum, at home, in the neighborhood and at school. Are you well organized? Do you work well with children? What equipment can you operate? What kinds of real life problems do you solve easily? Are you an avid reader? Are your very good with numbers? Do you get along well with all kinds of people? Are you a highly motivated volunteer? What can you do with computers and other technological tools? Describe the things you do well. These are your skills.

**How do I get started?**
Begin your résumé by reviewing What should your résumé include? and then listing everything that you would like to include in your résumé. You will then narrow your list down to those things that will be impressive enough to make the reader want to meet you. You can ask your mentor or friends to help you select the most important accomplishments. REMEMBER--ONE PAGE ONLY! Now you are ready to prepare a draft of our résumé! Get others to critique (review) your first draft, and think carefully about their comments. Use your reviewers’ comments to improve your résumé as you make your second draft. Check the spelling and grammar before your return to one or two or your reviewers. When you feel that your résumé is as good as it can be, you are ready to print out the official version.

*Note: Since this is your first résumé, and you are at the beginning of a lifetime of accomplishments, you should plan to update or revise your résumé annually. (Yes, over the years it will probably outgrow one page, even when you begin to delete your earliest accomplishments.)*
An Equal Opportunity Employer - M/F/H

APPLICATION FOR EMPLOYMENT

PERSONAL

<table>
<thead>
<tr>
<th>Last name</th>
<th>First</th>
<th>Middle Initial</th>
<th>Phone</th>
<th>Street address</th>
<th>City</th>
<th>State</th>
<th>Zip Code</th>
</tr>
</thead>
</table>

Social Security Number

How do you plan to get to work?

- mass transit
- auto
- other

Name and phone of person to be notified for emergency

is your citizenship or immigration status such that you can lawfully work in the U.S.?  
- yes
- no

If hired, continued employment may be dependent upon proof of citizenship or presentation of an alien registration number.

Age group

- Under 14
- 14-15
- 16-17
- 18 or older  
(if under 18, proof of age must be provided prior to hiring).

EDUCATION

<table>
<thead>
<tr>
<th>Name of school and address</th>
<th>Dates</th>
<th>Graduated</th>
<th>Number of college credit hours</th>
<th>Major</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>from (Mo/Yr) to (Mo/Yr)</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- junior high
- high school
- college
- other

extracurricular activities

- currently enrolled in high school or study program
- yes
- no

GENERAL/ACTIVITIES

STARTING WAGE DESIRED

$________________________ PER HOUR

DATE AVAILABLE TO START

DAYS AND

<table>
<thead>
<tr>
<th>DAY</th>
<th>SUNDAY</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
</tr>
</thead>
</table>
WHAT INTERESTED YOU IN GENERIC COFFEE, INC.?

WHAT ARE YOUR HOBBIES, SPECIAL INTERESTS, AND ACTIVITIES?
(Do not include those indicating race, creed, nationality or religion)

Answer the following question in New York State or Massachusetts or: If conviction occurred more than seven (7) years ago: in Washington state, a record or conviction does not disqualify you from employment consideration. Have you been convicted of a felony or misdemeanor other than a traffic violation? 

If yes, state charge, court, date and disposition of case

EMPLOYMENT/WORK EXPERIENCE

<table>
<thead>
<tr>
<th>Company no. 1 (present or most recent employer)</th>
<th>Address/phone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed (month &amp; year) to</td>
<td>Rate of pay ending</td>
</tr>
<tr>
<td>Average number of hours worked per week</td>
<td></td>
</tr>
<tr>
<td>Positions held</td>
<td>Supervisor’s name/position</td>
</tr>
<tr>
<td>Describe your duties</td>
<td></td>
</tr>
<tr>
<td>May we contact this employer? G yes G no</td>
<td>Days lost from work</td>
</tr>
<tr>
<td>Reason for leaving</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company no. 2 (previous employer, if any)</th>
<th>Address/phone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed (month &amp; year) from to</td>
<td>Rate of pay ending</td>
</tr>
<tr>
<td>Average number of hours worked per week</td>
<td></td>
</tr>
<tr>
<td>Positions held</td>
<td>Supervisor’s name/position</td>
</tr>
<tr>
<td>Describe your duties</td>
<td></td>
</tr>
<tr>
<td>May we contact this employer? G yes G no</td>
<td>Days lost from work</td>
</tr>
<tr>
<td>Reason for leaving</td>
<td></td>
</tr>
</tbody>
</table>

The information I am presenting in this application is true and correct to the best of my knowledge, and I understand that any falsification or misrepresentation here in could result in my discharge. In the event I am employed by Generic Coffee, Inc., I authorize Generic Coffee, Inc. or its representatives to contact all former employers and to further inquire as to any information given by me on this application.

Applicant’s signature ____________________________ Date __________

Do not write below this line – for Perfect Pets, Inc. use only

<table>
<thead>
<tr>
<th>Company No. 1 Reference Check</th>
<th>Applicant eligible for rehire G yes G no</th>
<th>Dates of employment verified G yes G no</th>
<th>Good G Good</th>
<th>Average G Average</th>
<th>Poor G Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checked by</td>
<td>Contacted</td>
<td>Date</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company No. 2 Reference Check</th>
<th>Applicant eligible for rehire G yes G no</th>
<th>Dates of employment verified G yes G no</th>
<th>Good G Good</th>
<th>Average G Average</th>
<th>Poor G Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checked by</td>
<td>Contacted</td>
<td>Date</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WHAT YOU'LL FIND IN THE HELP WANTED ADS

Employers use HELP WANTED ads to describe the positions they want to fill. There are four different parts to most HELP WANTED ads. These are: 1) job title; 2) training/experience requirements and on-the-job tasks; 3) hours, wages, descriptions of work place and benefits; and 4) how to contact employer.

1. Look at the HELP WANTED ads below. Write the names of the occupations of the job titles of each in these spaces.

Ad #1 ___________________________ Ad #2 ___________________________

**CLERICAL**

**MARKETING ASSOCIATE**
Non-profit Foundation seeks detail oriented individual to provide administrative support for Department that markets a civic education program for adults. Successful candidate will possess a high school diploma, some college and/or 2 years office procedures experience. Must be skilled in computers, organization and telephone operations. Excellent benefits and metro accessible. Salary $17,200 with advancement potential. EOE/AA Send cover letter and resume to: Close Up Foundation, 44 Canal Center Plaza, Alexandria, VA 22314. Attn: HR/AEEO

Two pos. at Greenbrier Animal Hospital, Fairfax, Va. AM & PM Shifts, both incl. some wknds & some animal care. Fax resume to: GAH 703-631-4281 or call 703-378-8813.

2. The requirements and on-the-job tasks are listed next in order of their importance. Requirements are things like training, experience, or personal qualities needed on-the-job. Tasks are sometimes listed too, but often, we must use the requirements listed to help us infer or figure out what the job tasks are.

Look at the HELP WANTED ads above. Name 3 requirements for job #1.

a. ___________________________  b. ___________________________  c. ___________________________

What can you infer about the on-the-job tasks at job #1?

____________________________________________________________________

*Three requirements* for job #2 are:
a. ________________  b. ________________  c. ________________

Name *two-on-the-job tasks* that you have inferred from the ad for job #2
JOB DESCRIPTION: INTERPRETIVE STAFF*

Job Title: Interpreter

General Overview
An interpreter is responsible for presenting and assisting in the interpretation of programs/events for exhibit areas, outreach and special programs/events. As an employee of The Science Connection, it is the interpreter’s responsibility to present programs in an enjoyable manner. You the interpreter are most likely the only person at The Science Connection who deals directly and exclusively with the visitor.

Responsibilities
$ Interact with visitors, explaining exhibits and encouraging visitor involvement.
$ Present demonstrations and activities on the museum floor as assigned or needed.
$ Participate in ongoing training for demonstration techniques and content.
$ Stay abreast of new information disseminated with regards to exhibits, programs, presentation styles and techniques.
$ Complete set-up, breakdown and clean of demonstration or presentation.
$ Work schedule as assigned or needed. This will include weekends, holidays and special events.
$ Assist in the development of all types of interpretive programs as needed.
$ Participate in prototyping programs.
$ Assist the planning and evaluation teams as needed.
$ Record and report broken exhibits and supply needs.
$ Adhere to all safety regulations.

Requirements
$ Genuine interest in working with varying audience types.
$ Strong public presentation skills.
$ Excellent interpersonal skills.
$ Ability to work cooperatively as a team member.
$ Ability to work well with minimum supervisor.
$ Strong self-motivation.
$ Flexibility.

Qualifications
$ Strong interest or educational background in science.
$ Theatrical or teaching experience.
(The Science Connection is a fictional interactive science museum.)
Adapted from Interpretive Staff Job description prepared by the Orlando Science Center; July 1991.
JOB DESCRIPTION: SECRETARY TO MARKETING DEPARTMENT  
(Part-time)

Function: working as a member of the marketing team of a auto parts manufacturing company.

Responsibilities:  
$ data entry  
$ word processing (letters)  
$ photocopying  
$ preparing and sending/mail/facsimiles  
$ filing and maintaining project records  
$ processing incoming correspondence  
$ mass mailings  
$ answering phone  
$ coordinating supply orders for marketing department

Strong Qualifications  
(essential):  
$ writing and speaking skills  
$ strong math skills  
$ excellent teamwork skills  
$ strong listening skills  
$ computer fluency (Database, WordPerfect 6.0 preferred)  
$ Other equipment skills: fax machines, photocopier, calculator, scanner, telephone console (familiar with at least 2 of these)

Works Schedule  
$ 5 days/week, Monday through Fridays  
$ 2:30 pm to 5:30 pm

Compensation: $8/hour
INTERVIEWING HINTS FOR TEENS

Whether you apply for a job at the museum or somewhere else, it is important for you to know how to conduct yourself properly during an interview. The purpose of this section is to help you prepare for the interview, and to feel more comfortable during this process. Here are some guidelines to help you.

**Punctuality**

It is very important to be on time for an interview. If you are late for the interview, the interviewer may think you are not really interested in the job and that you may show up late for work if you are hired. When someone calls you and asks you to come in for an interview, write down the name of the person you are to see and the person’s address and telephone number. Ask directions if you don’t know where the office is. Repeat this information to make sure it is correct. You should also repeat the date and the time of the interview and write that down. You may forget it or go on the wrong day or time if you don’t write it down.

**Dress and Grooming**

It is also very important to make a good appearance for your interview. This means you should take a bath, use deodorant, wash and comb your hair, and wear clothes that are neat and clean and do not have holes in them. This is the time to put your best foot forward and look your best. This tells the interviewer that you think this job is important. Make sure that you do not wear too much perfume, make-up or aftershave lotion and that you do not wear too much jewelry, especially bracelets that clang together.

**Dressing Tip:** Try to dress like the person you are going to meet dresses—to the extent that you can. If most of the women in that organization wear skirts or dresses, so would a wise job applicant. If most of the men usually wear shirts with ties, a young man applying for a job would not appear in bagging jeans and an oversized tee shirt.

**Preparation**

Before you go to the interview think about the job you are applying for. If you know any other teens in the museums who are already doing the job, you might want to talk to them and learn as much about it as you can. Write out some questions you want to ask the interviewers about the job and take the questions with you. This shows the interviewer that you have prepared for the interview and that you are really interested in the job. You will also be less nervous if you know something about the job and can answer questions better.
THE INTERVIEW

When you go in for the interview, the interviewer may wish to shake your hand. If he/she puts out a hand, shake it firmly. Listen carefully to the questions that are asked and answer them the best way you can. If you don’t know the answer, be honest and say so or ask if you can think about it for a few seconds. Don’t be afraid to ask the interviewer to repeat the question or explain it if you don’t understand it. Speak in a clear voice that is loud enough to be heard. Allow the interviewer to finish speaking before you speak.

Sit straight up in your chair and make sure you smile during the interview. Look at the person who is interviewing you. If you find yourself looking at the floor or the ceiling, look back at the interviewer. This shows that you are interested.

Do not chew gum, candy or anything else during the interview.

When the interview is over, thank the interviewer and tell him/her that you are interested in the job and that you know you could do a good job. This is the time to show that you have self-confidence even if you don’t feel that you do.

Now you’re ready for your interview. Good Luck!

TIP FOR SUPERVISOR: You may wish to allow teens to practice interviewing. Develop three sets of ten interview questions for a typical job in the museum that a teen might apply for. Divide the teens into groups of three. Ask one to be the interviewer, one to be the applicant and one to be the coach or observer. Give one list of questions to each person in the group. They will take turns interviewing someone else. The coach should take notes of how well the applicant does and discuss these with the applicant after the interview is over. You can ask them to switch roles so that each teen has an opportunity to be interviewed.
APPENDIX C
Interviewing Skills for Supervisors

Many museums are able to provide a limited number of paid positions for teens. If your museum hires teens, this information will be helpful for the supervisor who will do the hiring.

The hiring process should be viewed as a learning process for the teens which will provide them with interviewing skills that can be used in the future. However, the teens should also be informed that it is to their advantage to take the process seriously and prepare for it.

If you will be hiring teens, it is important to set your criteria in advance. This is especially important if you have a limited number of paid positions available for teens and you have several teens applying for the positions. Some things to consider are: performance evaluations from the staff members who supervised the teens’ volunteer performance, the minimum age you will hire, the teen’s attendance and dependability, a completed application, and an interview by the staff responsible for hiring decisions. Whatever criteria you develop should be used consistently to avoid any hint of discrimination or favoritism. The criteria should also be made very clear to the teens before the process begins.

The Interview

The interview should be conducted by the hiring supervisor and any other staff member as defined by your hiring policy. Even though these are young people being hired and interviewed, the same hiring procedures should be used as those used for hiring other staff. Remember that although it is unlikely that the hiring process will be reviewed, it is subject to legal challenges from government regulatory agencies such as the EEOC. It is also important to remember that poor hiring decisions are costly to the museum; therefore, those doing the hiring should be well prepared for the process. Make sure you check with your human Resources Department if you have one, or with your manager to review the museum’s hiring policies.

The interview can be divided into three phases: preparation, conducting the interview, and evaluation. This section will walk you through this process.

Preparation

The hiring supervisor should prepare for the interview by:

- Developing a job description which includes the essential job functions; the skills, knowledge and experience required; the work-related behaviors required; and the physical and mental requirements necessary to do the job.
- Scheduling the interview.
- Reserving a place to have the interview where you will not be interrupted.
- Preparing the interview questions.
- Reviewing the applications.

Developing the Job Description
Define the essential functions of the job.
- What are the responsibilities of this job?

Define the specific skills or abilities needed to succeed in this job.
- What must this teen be able to do to meet the minimum requirements of the job?

Define the training and experience needed.
- How much experience or training should this young person have? (Make sure these requirements are realistic and can be justified.)

Define the work-related behaviors needed.
- What behaviors must the young person have to be successful in the job? (For example: cooperation, good people skills, dependability, good communication skills, etc.)

Define the physical and mental characteristics needed.
- Does this person have to bend, lift, climb a ladder, have the ability to use certain technology, have the ability to speak clearly, have the ability to listen, etc.

Developing Interview Questions
Your goal through the interview process is to gain as much information as possible from the applicant to help you choose the best candidate for the job. Therefore, it is vital that you develop the questions which will help you find out what you need to know. Those doing the hiring must use the same format with each applicant and must develop a core set of interview questions. These questions should help determine those who can best meet the essential functions of the job as well as those who have shown through past experience that they will perform on the job as expected. Other questions which are not on the list may be asked to follow up or clarify answers that an applicant has given as long as the questions are job related and are not used to discriminate or show favoritism.

The best kind of questions to ask a job candidate are behavioral-based questions. We know that the best predictor of future behavior is past behavior; therefore we want to ask questions which require the applicant to describe something he/she has actually done. Although most of these young people will probably not have had any paid jobs, you can ask questions related to their experience in the museum as well as experience in school or other organizations which would be relevant to the job for which they are applying. Be careful, and do not ask any questions that are not job related.

Behaviorally-based questions might begin like this:
- “Tell me a time when...”
- “What did you do when...”
- “Tell me the most difficult thing...”
- “Describe a time...”
- “Give me an example of...”
- If the teen does not have a lot of experience you may wish to present a hypothetical situation and ask: “How would you handle this situation...”

In order to avoid any hint of discrimination, the interviewer must
be extremely cautious when asking questions. The interviewer can only ask questions that are job related.

These are some questions to avoid:
- Questions about birthplace, nationality, lineage, ancestry, national origin of applicant or family. You can ask if the applicant, after employment, can submit verification of legal right to work in the U.S.
- Questions about religion, race, skin color
- Questions about arrests or arrest records
- Questions about clubs and organizations that would indicate applicant’s race or religious creed, national origin or ancestry
- Questions about medical conditions or disabilities
- Questions about applicant’s native language. You can ask what languages the applicant can read and write if use of language other than English is relevant to the job for which the applicant is applying.
- Any questions that is not job related or necessary for determining an applicant’s eligibility for employment.

Conducting the Interview

The following steps should be followed when conducting the interview:

**Step One**
Review the applicant and the job description before the interview begins.

**Step Two**
Set a positive tone. Remember that the teen may never have been through a formal job interview before and he/she will probably be very nervous. Therefore, it is very important to make the applicant feel as comfortable as possible. You can do this by introducing yourself and trying to build rapport with the teen and help him/her feel relaxed. This can be done by using some introductory-chit-chat. Make sure it is not job related and does not touch on subjects which cannot legally be discussed.

**Step Three**
Give an overview of the interview. Tell the applicant what is going to happen. One of the best methods is to indicate that you will be asking some questions, you will take some notes, then you will tell the applicant about the job and will ask him/her if he/she has any questions.

**Step Four**
Ask your interview questions. Remember that your aim is to learn as much about the applicant as possible. The best way to do this is to listen more than you talk. One of the biggest mistakes we make when we interview is to talk too much. A good rule of thumb is to let the applicant do 80% of the talking. Be sure to use your list of questions and not to try to “wing it”. Listen carefully and take notes. Be sure to keep the applicant on track and answering the questions. Don’t be afraid to use silence.

**Step Five**
Explain the job duties and ask the applicant if he/she has any questions.

**Step Six**
Close the interview.
Tell the applicant what the next steps are in the interview process. Will he/she have to be interviewed by someone else? When will you make a decision and how will he/she be notified? Thank the applicant for coming in.

**Making the Decision**
- J Review the job qualifications
- J Review the applications and your interview notes.
- J Is the application neat and complete?
- J Does the applicant have the training, skills and personality characteristics needed?
- J Was the applicant on time and appropriately groomed and dressed?
- J Did the applicant answer questions properly?
- J Select the top candidates who best meet qualifications
- J Decide which candidate(s) is (are) the best match for the position
- J Conduct reference checks (Talk to museum staff who have supervised or work with the teen. Call other job references if available.)
- J Conduct any pre-employment tests required by the museum such as drug tests, etc.
- J Call the teen and make the job offer (Only those authorized to make job offers should do this).
- J Document the interview and your decision
- J Check with your Human Resources Department, or your manager to see what type of documentation is required. Some museums have interview checklists which can be filled out. You may wish to check with the Human Resources Department of ASTC for examples.
- J Notify candidates who are not selected
- J Make sure information about the applicants is kept confidential and discussed only with those directly involved in the hiring process.

**NOTE**
The information provided here is merely a guide and should not be construed as legal advice. Be sure to follow the hiring procedures as outlined by your museum.
**Assessment Tools**

How will you know if your youth participants are acquiring work skills and at what level? The assessment tools that follow are designed to help you and your young people assess what skills they have and to measure their growth in skill development over time.

Each handbook module includes an assessment tool for each of the five skill areas. The assessment tools in this section are comprehensive and encompass all five competency areas. These tools can be used by staff who directly supervise the young people and by the young people themselves as self-assessment instruments. Even if the young people assess their own job skills, there should always be a follow-up discussion with the youth programs manager.
# Assessment #1

**NAME:** __________________________

**JOB TITLE:** __________________________

**SUPERVISOR’S NAME:** __________________________

**DEPARTMENT:** __________________________

**DATE:** __________________________

<table>
<thead>
<tr>
<th><strong>COMPETENCY OR SKILL</strong></th>
<th><strong>OPPORTUNITY</strong></th>
<th><strong>TASKS</strong></th>
<th><strong>PERFORMANCE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The know-how the worker should learn, followed by examples.</td>
<td>Was the worker given a chance to learn this?</td>
<td>List specific tasks that the worker performed.</td>
</tr>
<tr>
<td></td>
<td><strong>Responsibility</strong> EX: Complete assigned tasks</td>
<td><strong>YES</strong></td>
<td><strong>NO</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Self-Esteem</strong> EX: Take pride in work</td>
<td><strong>YES</strong></td>
<td><strong>NO</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Appearance</strong> EX: Dress appropriately</td>
<td><strong>YES</strong></td>
<td><strong>NO</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Social</strong> EX: Get along with coworkers</td>
<td><strong>YES</strong></td>
<td><strong>NO</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Self-Management</strong> EX: Work independently when needed</td>
<td><strong>YES</strong></td>
<td><strong>NO</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Integrity/Honesty</strong> EX: Report work hours accurately</td>
<td><strong>YES</strong></td>
<td><strong>NO</strong></td>
</tr>
</tbody>
</table>

**PERSONAL QUALITIES/WORK HABITS**

**BASIC SKILLS**

EX: reading, writing, math, listening, speaking

**THINKING SKILLS**

EX: problem solving, creativity, reasoning

**INFORMATION**

EX: Read directions, ask questions, do research

**PERFORMANCE**

1 = Beginning 2 = Improving 3 = Mastering

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**APPENDIX C**

C - 6
<table>
<thead>
<tr>
<th><strong>COMPETENCY OR SKILL</strong></th>
<th><strong>OPPORTUNITY</strong></th>
<th><strong>TASKS</strong></th>
<th><strong>PERFORMANCE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The know-how the worker should learn, followed by examples.</td>
<td>Was the worker given a chance to learn this?</td>
<td>List specific tasks that the worker performed.</td>
<td>How well did the worker perform?</td>
</tr>
<tr>
<td>Organize &amp; Maintain</td>
<td>YES</td>
<td>NO</td>
<td>1 = Beginning</td>
</tr>
<tr>
<td>EX: File, update and retrieve records</td>
<td></td>
<td></td>
<td>2 = Improving</td>
</tr>
<tr>
<td>Communicate</td>
<td>YES</td>
<td>NO</td>
<td>3 = Mastering</td>
</tr>
<tr>
<td>EX: Answer questions, write instructions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use computers</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>EX: Use word processing software to produce report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYSTEMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understand</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>EX: Make a flowchart</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor &amp; Correct</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>EX: Find and correct error in instructions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design or Improve</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>EX: Streamline work plan for more efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TECHNOLOGY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select Tools</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>EX: Choose equipment for a project</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use Tools Properly</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>EX: Follow safety instructions</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Maintain &amp; Troubleshoot</td>
<td>YES</td>
<td>NO</td>
<td></td>
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<tr>
<td>EX: Clean and fix equipment</td>
<td></td>
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<tr>
<td>INTERPERSONAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work on Team</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>EX: Cooperate with co-workers, provide help</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>COMPETENCY OR SKILL</td>
<td>OPPORTUNITY</td>
<td>TASKS</td>
<td>PERFORMANCE</td>
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<tr>
<td>The know-how the worker should learn, followed by examples.</td>
<td>Was the worker given a chance to learn this?</td>
<td>List specific tasks that the worker performed.</td>
<td>How well did the worker perform?</td>
</tr>
<tr>
<td>Teach Others</td>
<td>YES NO</td>
<td></td>
<td>1 = Beginning</td>
</tr>
<tr>
<td>EX: Explain a task, demonstrate a skill</td>
<td></td>
<td></td>
<td>2 = Improving</td>
</tr>
<tr>
<td>Serve customers</td>
<td>YES NO</td>
<td></td>
<td>3 = Mastering</td>
</tr>
<tr>
<td>EX: Greet clients, resolve complaints</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lead Others</td>
<td>YES NO</td>
<td></td>
<td></td>
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<tr>
<td>EX: Make a presentation to motivate co-workers</td>
<td></td>
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<tr>
<td>Negotiate</td>
<td>YES NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX: Agree on activities, schedules, or prices</td>
<td></td>
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</tr>
<tr>
<td>Cultural Diversity</td>
<td>YES NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX: Work with people of other ethnic groups or ages</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>RESOURCES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>YES NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX: Schedule activities, use time effectively</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Money</td>
<td>YES NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX: Budget accurately for events</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>YES NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX: Determine supplies needed for activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Space</td>
<td>YES NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX: Select meeting location, organize room</td>
<td></td>
<td></td>
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<tr>
<td>Staff</td>
<td>YES NO</td>
<td></td>
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</tr>
</tbody>
</table>
General Comments:
**ASSESSMENT #2**

NAME: ___________________________ DATE___________________________

**Rate each skill 1 = Beginning  2 = Improving  3 = Mastering**

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>INFORMATION</th>
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</thead>
<tbody>
<tr>
<td>Allocates Time</td>
<td>Acquires and Evaluates Info</td>
</tr>
<tr>
<td>Allocates Money</td>
<td>Organizes and Maintains Info</td>
</tr>
<tr>
<td>Allocates Material/ Facility</td>
<td>Interprets and Communicates Information</td>
</tr>
<tr>
<td>Resources</td>
<td></td>
</tr>
<tr>
<td>Allocates Human Resources</td>
<td>Uses Computers to Process Information</td>
</tr>
</tbody>
</table>

**COMMENTS**

<table>
<thead>
<tr>
<th>INTERPERSONAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Participates as team member</td>
<td>Negotiates to make decisions</td>
</tr>
<tr>
<td>Teaches Others</td>
<td>Works with Cultural Diversity</td>
</tr>
<tr>
<td>Personable with public</td>
<td>Exercises Leadership</td>
</tr>
</tbody>
</table>

**COMMENTS**
<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>SYSTEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selects technology</td>
<td>Understands systems</td>
</tr>
<tr>
<td>Applies technology to task</td>
<td>Monitors and corrects performance</td>
</tr>
<tr>
<td>Maintains and troubleshoots technology</td>
<td>Improves and designs systems</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>COMMENTS</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>

Student Signature: ____________________________ Supervisor Signature: ____________________________

DATE: ____________________________
This questionnaire is designed to help you assess your job skills. Rate yourself based on your own thoughts about your experience with each skill.

### Resources

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
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<tr>
<td>Uses time well - keeps schedules, avoids wasting time, does things in the right order</td>
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<tr>
<td><strong>Money</strong></td>
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<tr>
<td>Uses budgets, keep records, predicts need for money</td>
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<tr>
<td><strong>Materials and space</strong></td>
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<tr>
<td>Collects needed materials in a timely fashion, keep what is needed, plans ahead</td>
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<tr>
<td><strong>People</strong></td>
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<tr>
<td>Assesses what skills others have and calls on them appropriately</td>
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</table>

### Interpersonal

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<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</thead>
<tbody>
<tr>
<td><strong>Works well in a team; share in group effort</strong></td>
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<tr>
<td><strong>Teaches new skills to others</strong></td>
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<tr>
<td><strong>Enjoys trying to satisfy customers or clients</strong></td>
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<tr>
<td><strong>Shows leadership</strong></td>
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<tr>
<td>Explains ideas, inspires others to follow willingly; looks for better ways to do things</td>
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<tr>
<td><strong>Negotiates</strong></td>
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<tr>
<td>Tries to reach agreements with others; works out compromises</td>
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<tr>
<td><strong>Works with diversity</strong></td>
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<tr>
<td>Gets along well with people from other groups, both male and female</td>
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### Information

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<tr>
<th></th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</thead>
<tbody>
<tr>
<td><strong>Finds needed information</strong></td>
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<td><strong>Keeps information organized</strong></td>
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<tr>
<td><strong>Understands information and can explain it to others</strong></td>
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<tr>
<td><strong>Use computers</strong></td>
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</table>

NAME: ___________________________ DATE___________________________
### Systems

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<thead>
<tr>
<th>Knows how to work with different kinds of teams, various types of organizations, and a variety of technical situations</th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</thead>
<tbody>
<tr>
<td>Fits in; sees what works and what doesn’t in various situations, and makes adjustments accordingly</td>
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<td>Looks for ways to make the system work better; suggests improvements</td>
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### Technology

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<tr>
<th>Chooses the right tool or equipment, including computers, for the job to be done</th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</thead>
<tbody>
<tr>
<td>Knows how to use the equipment to get the job done</td>
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<tr>
<td>Takes care of equipment, prevents problems or solves problems with equipment, including computers, machines and other technologies</td>
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PAY STRUCTURES/WORK PERMITS

FEDERAL MINIMUM WAGE
The Fair Labor Standards Act (FLSA) establishes minimum wage and overtime pay. The Wage and Hour Division administers and enforces FLSA.

All teens hired by the museum would be covered by the laws established by FLSA. They are entitled to a minimum wage of not less than $5.15 an hour effective September 1, 1997 with the exceptions explained below.

Employees under 20 years of age may be paid $4.25 per hour during their first 90 consecutive calendar days of employment with an employer.

Certain full-time students, student learners, apprentices, and workers with disabilities may be paid less than the minimum wage under special certificates issued by the Department of Labor.

OVERTIME PAY
Overtime pay at a rate of not less than one and one-half times their regular rates of pay is required after 40 hours of work in a workweek.

CHILD LABOR
An employee must be at least 16 years old to work in most non-farm jobs and at least 18 to work in non-farm jobs declared hazardous by the Secretary of Labor. Youths 14 and 15 years old may work outside school hours in various non-manufacturing, non-mining, non-hazardous jobs under the following conditions:

- No more than -
  - 3 hours on a school day or 18 hours in a school week;
  - 8 hours on a non-school day or 40 hours in a non-school week.

Also, work may not begin before 7 a.m. or end after 7 p.m., except from June 1 through Labor Day, when evening hours are extended to 9 p.m. Different rules apply in agricultural employment.

Rest periods of 5 to 20 minutes are to be counted as hours worked. Meal periods are not counted as hours worked if the employee is completely relieved from duty for the purpose of eating a meal. Ordinarily, 30 minutes or longer is enough for a bona fide meal period. An employee does not have to be permitted to leave the premises if he/she is otherwise freed from duties.
WORK PERMITS
Young people under the age of 18 must have a work permit before they can be hired. These are generally issued by the Department of Social Services or may be acquired through the local Board of Education. The permit must be filled out by the employer. The young person then takes the permit to the proper agency along with a birth certificate. The parent or guardian must also sign the permit. These work permits must then be returned to the employer and kept in the young person's personnel file.

NOTE:
This information in this section was taken from publications developed by the US Department of Labor, Employment Standards Administration, Wage and Hour Division. If you have questions or need additional clarification, call your local Wage and Hour office. You do not have to identify the name of your museum when you call. You may also call 202-219-8743 and ask for WH Publication 1282.

This information refers to federal laws only. In some states, there are additional state laws that apply. You will need to check with your State Department of Labor to determine state requirements.