

STEM

VOLUNTEER COMPONENT TOOLKIT



A Toolkit for Building Successful Volunteer Relationships between Science, Technology, Engineering and Math Professionals (STEM), and Afterschool Programs

Presented by:



United Way
of Massachusetts Bay
and Merrimack Valley



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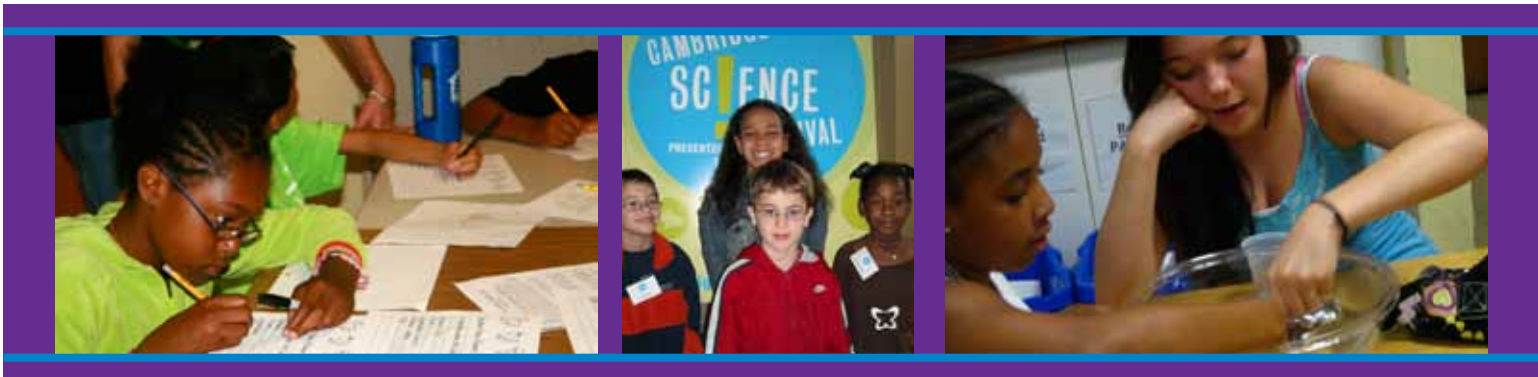
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STEM

Science, Technology, Engineering
and Math Professionals (STEM)

VOLUNTEER COMPONENT TOOLKIT



“The extraordinary challenge of helping all children learn at high levels demands an increased share of responsibility by business, higher education, and others outside the public school system.”

Business-Higher Education Forum, Winter 2001

Welcome

This volunteer toolkit is the result of a year-long project by East End House and the United Way of Massachusetts Bay and Merrimack Valley's Math, Science, and Technology Initiative (MSTi). We worked with several afterschool programs and community partners to explore creative, meaningful and effective ways to work together to benefit youth in afterschool programs.

The goal for this project is to provide specific strategies for the successful engagement of volunteers from science, technology, engineering and math (STEM) industries with afterschool programs in order to:

- Provide young people with meaningful contact with caring adults who work in science related careers
- Generate and sustain young people's interest in science
- Acquaint youth with science related careers
- Provide greater depth to the MSTi curriculum through real-life applications of science, individual mentoring and hands on support by volunteers in the execution of the curriculum

The MSTi's *Muscles, Lungs, Blood, and Guts* curriculum was designed specifically for youth in 4th through 8th grades in afterschool settings. It contains activities, scientific content, and pedagogical guidance, and it is supported by appropriate professional development. The curriculum is unique in that it incorporates volunteers from STEM industries into daily activities, thus enhancing the depth of experience for youth. It was developed (and is being revised and refined) by TERC, an internationally renowned science and math Research & Development organization based in Cambridge, MA.

Afterschool programs have a unique ability to build relationships with community resources and organizations to deliberately connect young people's learning experiences to the world around them. This guide will provide resources and inspiration for the creation, expansion, and enhancement of STEM curriculum and volunteer engagement in afterschool programs. The material included is written for both afterschool programs and community partners; while each section is dedicated to specific audiences, we highly recommend that the reader be familiar with the entire toolkit to achieve success in helping our youth discover a passion for science.

Warm Regards,

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Why science in afterschool?

Why does the community have to be involved?

After completing a literature review of publications on afterschool science programs, volunteer management and corporate investment in communities, the following points summarize how research has informed the development of the Volunteer Component:

Afterschool programs provide an ideal setting to focus on science education. Afterschool programs provide hands-on learning opportunities focused on inquiry-based education in a relaxed and fun environment with caring adults. Afterschool programs are optimal for providing engaging, hands-on science, technology, engineering and math (STEM) experiences, enabling young people to apply, reinforce, and extend skills and concepts taught in school. Afterschool programs are also particularly conducive to project-based activities where a wide variety of youth can participate in the design, construction, investigation, sense-making, and communication of science projects (Afterschool Alliance, 2006). Compared to the school day, afterschool programs have smaller groups, longer activity periods and more informal settings to do both classroom-based and community-based activities that cultivate a love of discovery (Friedman & Quinn, 2006; Friedman, 2005). Finally, afterschool programs provide experiences that build young people's capacity to succeed and offer a continuity of opportunities that prepare them to participate in STEM careers (NASA, 2006).

Our nation is in desperate need of scientists, engineers and technicians. "According to projections by the U.S. Department of Labor, jobs requiring science, engineering, and technical training will increase by 51 percent...four times faster than overall job growth." The United States is losing ground internationally in the fields of science, technology, engineering and math (Business-Higher Education Forum, 2005). Afterschool programs provide a unique opportunity for adults who are working in STEM careers to share their work and educational experiences with young people who might not otherwise have access to information about these careers or consider themselves to be future scientists, engineers and technicians.

Afterschool programs' connections to community organizations can enrich the opportunities provided to young people in afterschool programs and can generate a genuine enthusiasm for science. In partnership with organizations such as museums and science centers, afterschool programs can improve young people's attitudes about science and math (Afterschool Alliance, September 2006). Furthermore, interest in science careers in eighth-graders is a better predictor than test performance in determining which students will pursue careers in science (Boston Globe, May 2006). Late elementary and middle school is an ideal time to involve youth in engaging science projects. The experience has the potential to shape their future in a positive way.

Successful management of volunteers can be tremendously rewarding for afterschool programs and businesses and their employees. Although volunteer management is labor-intensive, effective management is a key success factor in balancing the work of educating our young people (Howard, 1998). Predictors for successful corporate volunteer management include: recognition, employee-friendly program structure, training, employers providing paid time-off, high levels of employee participation, and effective communication (VolunteerMatch, 2004). Finally, programs with highly trained volunteer leaders require less maintenance, increasing the potential for long-term sustainability (Snider, 1985; Smith, et al., 2004). In offering volunteer opportunities to employees, businesses gain visibility as responsible community members. Successful management of volunteer programs leads to more structured and enjoyable learning opportunities for adults and young people. For more ideas and information about benefits to businesses, please see the "additional resources" section at the end of this toolkit.

Integrating afterschool program strengths with the strengths of professionals from STEM industries is necessary for promoting STEM interest in our communities. It is clear from the research that community-based organizations must have the support of community members and organizations to be successful in achieving goals (McLaughlin, 2002). The potential for the afterschool and science fields to flourish together can be enhanced by strategic alliances (Friedman, 2005), including those with businesses and higher education institutions. There is a need for leaders in business and higher education to take on new leadership roles that provide more effective support to educators in achieving system change (BHEF, 2005; BHEF, 2001).

For Afterschool Programs



Finding Science Partners in Your Community

We know that afterschool programs provide an ideal setting to focus on science education. Many programs have discovered how fun science can be during afterschool hours: young people are not pressured to memorize facts and pass tests; activities can be focused and hands-on; and activities can be project-based and continue over longer periods of time. What is more, connections to community organizations will enrich the opportunities provided to youth in afterschool programs.

We are assuming that you are reading this guide because you are interested in or have already incorporated science into your afterschool program and are now focusing on building community connections to expose young people to science-related careers, how science is applied in daily life, and instilling an excitement about science in young people's minds. We hope that the following pages will provide you with simple, executable ways to achieve your goals.

First, here are some ideas to help you strengthen your science program offerings while you work to build community connections:

- Download science activities from the internet (we've provided many resources for you at the end of this document)
- Host an afterschool science fair
- Celebrate science daily (Was something invented today? Is this month "National _____ Month"?)
- Do your young people's parents work in science-related careers? Ask them to come to the program to talk about their jobs
- Ask school teachers to come in to speak with youth, or work together to plan a special activity that will supplement what the young people are learning in school
- Talk with other afterschool programs about their successes and challenges in implementing science activities
- Research local curriculum development companies to purchase materials or to pilot activities
- Host family-centered science activities or evening events to engage others beyond the child
- Do you have an early release day or school vacation program coming up? Schedule a science-related field trip!

To supplement afterschool science curriculum, programs should form and utilize connections with community organizations to enrich the opportunities provided to young people. Furthermore, increased exposure to community resources can instill a genuine enthusiasm for science in the participants of our programs. Your program may already have relationships with community partners who provide volunteers, resources and opportunities that supplement your science program offerings. If you do not, or if you would like to identify additional resources, consider community mapping.

Community mapping is an activity that will build your program's knowledge and awareness of community resources—specifically where science, math and technology resources exist in your community. Community mapping is the act of creating a list of potential contacts for volunteers or science-related activities for youth. This list can be accompanied by a geographical map that helps afterschool program staff think creatively about identifying resources close to the program site. The list of contacts is a starting point for creating

partnerships within the community. A community mapping exercise focuses on carefully matching the needs of young people with the resources of the community.

Before creating a community map, your team should decide on two items. The first is your motivation to build relationships with science-related businesses in your community. This may include their ability to provide volunteers, resources or field trip opportunities. The second is who to involve in the community mapping process. If your program staff is from your neighborhood or community, they might have the knowledge base necessary to create a thorough community map. Others to consider including in this process are parents of youth in your program, your organization's Executive Director, members of your organization's Board of Directors, and, of course, the young people in your program. Who knows more about what youth are interested in than the youth themselves!

There are several approaches to creating your community map. Your mapping team can choose which approach will work best for you. Options include physically walking through the neighborhood to gather information, internet research, telephone calls, personal visits to companies, and group brainstorming. Please remember, even if you are not located in a biotech-rich community, science is everywhere. Consider including the following community resources on your map: hospitals, museums, schools/colleges, research organizations, government agencies, social groups, community groups, historic landmarks, sports arenas, parks/playgrounds, repair shops, and much more.

In your research, look for businesses that have corporate volunteer programs or community relations divisions. They may already have a culture of volunteerism and may be easier to engage than those businesses that do not have these divisions in place. Many businesses that do not have corporate volunteer programs sponsor community service days in which employees are dispersed into teams throughout the community to volunteer at local organizations.

The potential for the afterschool and science fields to flourish together can be enhanced by strategic alliances (Friedman, 2005). Creating partnerships will have the following implications for your program:

- Afterschool program staff think differently about their teaching
- Afterschool program staff become more engaged in their young people's communities and begin to share a common knowledge base with students
- Young people expand their view of the community and its members
- Young people gain a connection with businesses and services with which they might not typically connect
- Community members become engaged in afterschool programs and recognize the significance of learning opportunities provided during afterschool hours
- Employers have opportunities to get to know and consider potential employees
- Partnerships promote community development—engaging local people in community enhancement efforts
- Staff shift from a deficit-based to an asset-based approach in community development—simply, staff look at the strengths of their community rather than at what the community is missing.

Implementing a Volunteer Program

The final lesson from the literature review was that *successful management of volunteers can be tremendously rewarding for afterschool programs and businesses and their employees*. Volunteer management is labor-intensive and may be beyond the scope of the daily responsibilities of an afterschool program director, but the following tips and handouts can help programs with limited resources successfully manage volunteers.

Now that you know your program's volunteer and resource needs, it's time for a crash course in volunteer management! Most volunteer management literature agrees that there are five key steps in the successful implementation of a volunteer program:

- Create a plan for the volunteer program
- Recruit and assign volunteers
- Orient, train and supervise volunteers
- Recognize volunteers
- Evaluate the volunteer program.

Create a plan for the volunteer program. While completing the community mapping exercise, you identified your program's needs and identified community resources that can help you engage youth more meaningfully in science-related activities and expose them to science-related careers. Remember, this plan should include goals for program staff, volunteers and youth.

To ensure that utilizing volunteers will fulfill your organization's needs and that everyone involved has very clear expectations about the role of volunteers, you must create detailed descriptions for all volunteer duties and responsibilities. We surveyed afterschool programs and interviewed potential business partners to find out what types of volunteer activities would be best for programs and most interesting for volunteers. Below is the list these groups suggested:

- Host afterschool groups at worksites
- Mentor a young person in an afterschool program
- Assist afterschool programs on field trips
- Be a guest speaker at the afterschool program
- Assist in afterschool activities on an ongoing basis
- Be a one-time helper for a STEM activity
- Help create curriculum for afterschool program
- Communicate regularly with youth via email
- Engage in a community service activity with youth.

In the appendix, you will find a sample job description. We have also included an option for the volunteer to create his/her own volunteer opportunity based on a specific area of expertise or experience they would like to share with youth. Each volunteer option has detailed descriptions on the reverse side of the job description; programs can customize the document to meet specific program and volunteer needs.

Recruit and assign volunteers. Now your team must decide on a strategy for recruiting volunteers. Do you want to post recruitment flyers? Do you want to develop a relationship with someone within a company to be your

“champion” for recruiting volunteers? Do you want to go to companies and do a presentation about how the employees can make a difference in your organization? Your team should decide which strategy or strategies will be most effective, given your program resources and existing relationships within the community. Any recruitment efforts should be clear, concise and include the potential benefits to volunteers. You want volunteers to reflect the interests, backgrounds, gender, ethnicity, etc., of the young people in your program. Remember, volunteers are potential role models, so recruit a variety of professionals who can relate to your diverse group of youth.

All individuals who are interested in volunteering for your organization should go through an application and background check process. The one-time volunteer application should be brief; ask for important contact information, emergency contact information, and a few short questions about why this person is interested in volunteering and what skills he or she will bring to your program. We have included a sample application in the appendix. For individuals who are interested in ongoing volunteering or mentoring (any responsibilities more than a one-time opportunity), the screening process should be more in-depth. Because ongoing volunteers will be spending much more time in the program and will be developing long-term relationships with young people, we encourage you to screen these applicants in the same manner that you would screen potential paid staff—completing reference checks and complying with licensing requirements. Once this process is complete, you are ready to orient and train the volunteers!

Orient, train and supervise volunteers. We know that volunteers can be helpful in our programs, but how can we have them meaningfully engage with young people? How do we ensure they are helping to encourage a sense of excitement about science and expose our young people to science-related careers? In addition to receiving a clearly written job description, volunteers should be oriented to your program and organization. Be sure to refer to the “For Community Partners” section, as we have included helpful tools for volunteers to acquaint themselves with childhood development theories and to prepare for their volunteer time.

Consider the following steps to help you prepare volunteers for their experience:

- Greet the individual warmly! If you have a receptionist, make sure he/she knows that the individual is arriving and can say “Welcome aboard!” (Ellis, 1999)
- Take volunteers on a tour of your facility
- Create a volunteer handbook that orients the volunteer to the program and organizational policies
- If time allows, have volunteers spend time observing the program prior to his/her start date
- Have a task prepared for the volunteer each day
- Provide volunteers with a copy of your program schedule
- Be prepared to provide additional literature and resources if the volunteer asks for information on youth development, afterschool programs, etc. Many great resources are listed in the references section of this guide
- Be present at the end of the volunteer’s first few shifts. Review how the day went, answer any questions, and verify when you will expect to see the volunteer next. Do not forget to say a sincere, “Thank You!”

Remember that, like your program staff, ongoing support and supervision is critical to assuring the success of your volunteers.

Helpful hints:

- Prepare your program staff for the volunteers. Provide staff with background information about the volunteer—what their interests and strengths are, what to expect them to be able to do, why this person is an important asset to the program, etc.

- When volunteers start, prepare the young people for a “special guest.” Reinforce that this guest does not have to be in the program but that he or she wants to come to visit the program/get to know the kids/show us around his or her workplace
- Encourage program staff to use young people’s names frequently to help the volunteer learn names
- Going on a site visit or field trip? Ask your host to share the agenda with you prior to the trip so that you can prepare the youth and ensure that the topics are age-appropriate for your group.

Recognize volunteers. Be creative in the ways that you thank volunteers. Most days a simple “thank you” is enough, but especially for those volunteers who dedicate a great amount of time to our programs, we should show our gratitude frequently, not just during April—National Volunteer Month. The web is full of ideas for volunteer recognition, particularly www.energizeinc.com; here are a few of our favorite (simple!) recognition activities:

- Write a thank you note from the program staff
- Have the youth make a thank you card
- Bake cookies for volunteers
- Give volunteers “Life Savers” candy and attach a nice note about the value the volunteer adds to the program
- Create a volunteer bulletin board with photos and quotes
- Provide volunteers with young people’s artwork
- Take photos of the experiences, and give them to the volunteers
- Celebrate anniversaries—keep in mind that long-term volunteers often are people who found out about your organization through a one-time experience.

Evaluate the volunteer program. Evaluation is important to assure that volunteers are meeting the expectations of the program and gaining skills; young people in the program are gaining the experiences outlined above; programs are involving volunteers effectively; and your volunteer program meets its overall goals. Programs must gather feedback from program staff, participants and volunteers about the experiences afforded by volunteer involvement.

The W.K. Kellogg Foundation published a very thorough program evaluation handbook that is available online and is a useful tool in conducting a formal program evaluation; the web address is included in the additional resources section of this guide. Program evaluation can be a daunting task, but there are several simple steps you can complete to keep on target to achieve goals. Strategies for volunteer program evaluation include, but are not limited to:

- Brief surveys after one-time volunteers visit to gain a better understanding of how volunteers experienced the program and how they could have been better prepared. (Don’t forget to also ask program staff and young people for their feedback!)
- Periodic assessments of volunteer job descriptions and handbooks to ensure that the information provided remains meaningful and pertinent to the volunteer program’s goals
- Annual performance evaluations for volunteers
- Revisit goals of your volunteer program plan.

As with all evaluations, programs should use the results of the evaluations to plan for the next year!

For Community Partners *and* Afterschool Programs



How to Use This Section

Once the volunteers have completed the application and orientation process, they are ready to begin working with the afterschool program. This section is designed to help program staff, youth and volunteers have a great experience together. The tips in the following pages will help prepare volunteers and afterschool program staff for working together, and could also serve to refresh experienced volunteers' knowledge.

Establishing Clear Expectations

Having clear expectations between volunteers and afterschool programs is a key component in ensuring that the program's needs are met and the volunteer has an enjoyable experience. Expectations were discussed previously in the "Implementing a Volunteer Program" section.

Afterschool programs should expect volunteers to:

- Show up on the days for which they have signed up
- Call ahead if they are going to miss a scheduled day
- Be on time
- Be prepared
- Follow the program's policies
- Adhere to the job description
- Be respectful, kind and fair to youth and staff
- Observe confidentiality of privileged information about young people, staff, volunteers and others involved with the program
- Ask questions, make suggestions and discuss concerns.

Afterschool programs SHOULD NOT expect volunteers to:

- Discipline youth
- Call parents
- Lead an activity alone.

Volunteers should expect to:

- Be welcomed and introduced
- Be trained regarding roles of volunteers and rules of the program
- Discuss program expectations and procedures with program staff
- Receive assignments that use and develop the volunteer's skills
- Have fun!

A Day in the Life of an Afterschool Program

While no two afterschool programs are alike, many programs share similar successes and challenges. Here is what community partners should know about afterschool programs in general:

- Program staff are part-time employees who often work at other jobs or are enrolled in college or high school
- In most programs, the only full-time employee is the Program Director
- Program staff often have very little preparation time before the young people arrive at the program, as little as 15 minutes
- Staff to child ratios in afterschool programs can be as low as 1 to 5 and as high as 1 to 20
- When a staff person is out sick or on vacation, programs are often forced to cancel or amend scheduled activities
- Programs operate on a tight budget and may lack resources for expensive field trips and equipment
- Typical program hours are 1:30-6:00; hours vary according to the time schools are dismissed (some programs operate for as few as 2.5 hours per day)
- In many programs, young people spend the first part of the program day completing their homework
- Afterschool activities supplement what young people learn in school, but with an extra focus on building relationships, experiential learning, developing social skills and providing arts and physical activities
- Most afterschool programs are co-ed and give all youth opportunities to explore a range of activities
- Most young people live in the neighborhood in which their afterschool program is located
- Youth spend at least six hours in school every day. Afterschool is often the only time they get to spend with their friends.

Please see “Why Science in afterschool?” (pages 6-7) for more information about why afterschool programs are the ideal paces for young people to engage in hands-on science activities.

For additional research-based facts about afterschool, see:

www.communityschools.org/afterschoolfactsheet.html

www.bostonbeyond.org/aboutus/OST-fact-sheet.html

www.gse.harvard.edu/hfrp/content/projects/afterschool/resources/factsheet.pdf

http://www.niost.org/publications/Factsheet_2003.PDF

Learning Standards in School

Regardless of your time commitment or role as a volunteer, if you are going to be working with young people, particularly in science-related activities, you should be aware of what youth are learning in school. Below is a summary of math, science and technology learning standards from the Massachusetts Department of Education. If you would like more information, refer to:

<http://www.doe.mass.edu/frameworks/>

	Math	Science/Technology/Engineering
Grades 3-5	<ul style="list-style-type: none"> • Read, write and use numbers up to 100,000 • Know multiplication tables up to 12 x 12 • Use words, graphs, tables, and other strategies to describe and solve real-life math problems • Understand 2-D and 3-D shapes and predict what a shape will look like from different perspectives • Plot and identify points on a coordinate graph • Predict the probability of outcomes (e.g., probability of a coin toss ending in heads) 	<ul style="list-style-type: none"> • Ask questions and make predictions that can be tested • Recognize simple patterns in data and use data to make reasonable explanations for the results • Collect, organize and display data using observations, measurements, surveys or experiments • Conduct trials to test a prediction and compare results to predictions • Select and use appropriate materials, tools and technology (e.g. meter sticks, calculators, scales, balances, computers) to extend our ability to solve problems • Understand life cycles of plants and animals
Grades 6-8	<ul style="list-style-type: none"> • Solve simple algebraic expressions • Compare, order, estimate and translate among integers, fraction, decimals and percents • Identify, describe and analyze linear relationships between two variables • Use several graphical representations of data (circle graphs, Venn diagrams, stem-and-leaf plots, etc.) • Determine when an estimate rather than an exact answer is appropriate and apply in problem situations 	<ul style="list-style-type: none"> • Emphasis on research and problem solving • Formulate a testable hypothesis • Design and conduct an experiment using variables • Offer explanations, critiques and revisions of procedures • Begin to study biology, including cellular structures • General understanding that the human body's organs work together to maintain life • Begin to study power and energy • Basic understanding of engineering

Tips for Working with Young People

Before You Begin:

- If you will be a guest speaker and are planning on utilizing technology for your activity, be sure to ask the afterschool program if they have what you need. It might be best to bring your own technology.
- Do you worry that you will not know how to be most useful in the afterschool program? Please remember that often afterschool staff do not have adequate time to prepare for the day and may be in a hurry to get things set up for themselves so may not be thinking about keeping you engaged. Feel free to introduce yourself, tell the staff when you will be available to assist them, and ask them what you can do to help right now. Additionally, you could ask program staff questions that begin, "Would it help if I...?" or "What do the youth usually do in...?"

Relationship Building:

- Learn the names of the youth with whom you are working. You can play name game ice breakers before activities begin. If you do not remember a young person's name, feel free to say, "I'm sorry, could you remind me what your name is? Since I'm new, I'm trying to learn lots of names all at once."
- Try to remember little things about the youth with whom you are working. On your next visit you will have a jumping off point for a conversation.
- Have you traveled to the country that the young person is from? Most young people love to talk about their heritage! Do you speak a foreign language? See if any of the young people share your language.
- Bring an interesting object to share. Are you working on something cool at work? Do you have photos of your pet? Kids?

While in the Program:

- Try to use simple, youth-friendly words when explaining things.
- Quizzes and other games are fun for young people; play them at the start and end of the activity. Have a few extra games (or rounds of a game) ready just in case you need a break or have some down time in your activity. If possible, give little prizes for participation.
- Need a quick way to get everyone's attention? Try silently raising your hand in the air; the rest of the group should follow; snap/clap different rhythms until the group joins you in the rhythm; say, "If you can hear my voice, clap once" until the entire group claps one time together.
- If you see someone who is not participating in an activity, go sit with the young person and do the activity together. Youth love one-on-one attention!
- Ask open-ended questions: "What do you think?" "Why?" "What do you suppose would happen if...?"

Hosting Young People at Your Workplace

Before You Begin:

- If using slide shows or other handouts, or if you have an agenda, share them with the Afterschool Program Director prior to the visit. The Director can help to ensure that your presentation will be youth-friendly.
- If possible, provide a snack to the young people. Please remember that many youth have nut allergies!
- Does your company have a bus or van, or have funds to pay for a coach service? Could you provide transportation to the program?
- Does your company have extra promotional materials? Young people love take-aways—pens, key chains, mouse pads, etc. One company gives youth groups Rubik's cubes, which is a huge hit with the youth and a great way to have them remember your company's name and products!

While Hosting:

- Do not forget to talk about what your company is and what you do. Does your company have "products"? Be specific about what you produce: a computer program, medicine, etc., and try to avoid your industry's "buzzwords," as kids most often do not know what they mean.
- Young people do not understand complicated words, but they do understand concepts. For example, they know that a pill treats people who are sick, but may not know what a pharmaceutical company is.
- Try to use simple, youth-friendly words when explaining things.
- Include hands-on activities; both boys and girls like them.
- How does the work your company does apply to the real world? Tell the group all about it!
- Quizzes and other games are fun for young people; play them at the start and end of the activity. Have a few extra games (or rounds of a game) ready just in case you need a break or have some down time in your activity. If possible, give little prizes for participation.
- Do you have nice artwork and brightly colored hallways? Do you have state-of-the-art computers or labs? How about a large conference room or an employee cafeteria? Even if all of your employees work in cubicles, young people love seeing these things.
- What do your employees do together for fun during the workday? Feel free to show youth the fun aspects of working for your company.

Appendix



VOLUNTEER JOB DESCRIPTION

TITLE: Afterschool Science, Technology, Engineering and Math (STEM) Volunteer

SUPERVISOR: Afterschool Program Director (or whomever organization designates)

PURPOSE OF POSITION: In addition to providing greater depth and enrichment to the “Muscles, Lungs, Blood, and Guts” curriculum, STEM volunteers help students generate and sustain an interest in science and acquaint youth with science related careers. Volunteers help afterschool program staff by exposing young people to a broader range of topics and real-life applications of STEM subjects, provide youth with opportunities to develop relationships with caring adults, and provide greater hands-on support in the execution of the afterschool program curriculum.

RESPONSIBILITIES: Work with youth in grades 3 – 8 in an afterschool program assisting with a math, science and technology curriculum. We have several options for volunteering which include, but are not limited to:

- | | |
|---|---|
| <input type="checkbox"/> Host afterschool groups at your worksite | <input type="checkbox"/> Assist in afterschool activities on an ongoing basis |
| <input type="checkbox"/> Mentor a young person in afterschool | <input type="checkbox"/> Be a one-time helper for a STEM activity |
| <input type="checkbox"/> Assist afterschool programs on field trips | <input type="checkbox"/> Help create curriculum for afterschool program |
| <input type="checkbox"/> Be a guest speaker at afterschool program | <input type="checkbox"/> Communicate regularly with youth via email |
| <input type="checkbox"/> Other: _____ | |

(See reverse side for specific expectations and responsibilities)

QUALIFICATIONS: Individuals with a background in math, science and technology, and enjoy working with young people are especially encouraged to apply. Before volunteering, individuals must complete application, provide references, complete CORI (background check), and interview with _____. Must be able to work within the hours and the structure of the afterschool program and be able to interact with young people in a positive, encouraging manner. Must be friendly, caring, patient, open-minded, flexible, enthusiastic about and comfortable working with young people, supportive of _____ mission and must be ready to have fun!

(program/organization name)

TRAINING: Orientation to _____
(program/organization name)

policies and guidelines; orientation to Math/Science Curriculum; additional training as available.

AFTERSCHOOL PROGRAM HOURS: _____
(program hours)

LENGTH OF COMMITMENT: Depends on volunteer’s availability. Opportunities range from one-time visits to long-term commitments, as can be found in the responsibilities section above.

LOCATION: _____

VOLUNTEER SIGNATURE

DATE

SUPERVISOR SIGNATURE

DATE

SPECIFIC EXPECTATIONS AND DUTIES (page 2)

Host afterschool groups at your worksite

- Host a group of youth and afterschool teachers during program hours
- Prepare a short presentation about your company, using youth-friendly language
- Introduce youth to different jobs within your company
- When possible, give youth a hands-on opportunity to “work” at your company
- Provide transportation, if possible
- Provide a facility tour to afterschool group
- Provide snack
- _____

Mentor a young person in an afterschool program

- Commit to at least _____ months in the afterschool program
- Support a young person through an ongoing relationship; serve as role model and friend
- Have weekly supervised meetings, at minimum, with the young person at the program
- Assist the young person with homework, be a good listener, etc.

Assist afterschool programs on field trips

- Supervise a group of _____ (#) youth on field trip to assure safety at all times
- Assist afterschool staff in behavior management
- Must commit to the entire length of trip
- Answer questions and provide real-world connections to help youth understand the focus of the trip

Be a guest speaker at an afterschool program

- Work with afterschool program staff to schedule visit to program
- Attend program for at least _____ (# hours)
- Prepare a presentation that is appropriate for young people
- Answer questions from youth about your career, education, work experience, similar life experiences
- Prepare handouts, games, etc., that are youth-friendly

Assist in afterschool activities on an ongoing basis

- Commit to _____ (#) hours weekly to assist program staff in the implementation of activities
- Communicate with program staff prior to activity regarding the day’s lesson plan
- Actively engage youth in the activities
- In some cases, work one-on-one with youth having a difficult time participating in the activity
- Develop relationships with program youth and staff

Be a one-time helper for a STEM activity

- Commit to _____ (#) hours to assist program staff in the implementation of activities
- Communicate with program staff prior to activity regarding the day’s lesson plan
- Actively engage young people in the activity
- In some cases, work one-on-one with youth having a difficult time participating in the activity

Help create curriculum for afterschool program

- Use your education/job experience to create hands-on science opportunities for youth
- Work with afterschool program staff to develop lessons
- Observe lessons to improve or adjust lesson plan as necessary

Communicate regularly with youth via email

- Exchange emails with youth in afterschool programs _____ (# times) per month
- Topics could include homework assistance, career exploration, sharing life experiences
- Schedule in-person meetings and celebrations with youth at least _____ (# times) year

VOLUNTEER APPLICATION

NAME: _____

ADDRESS: _____

EMAIL ADDRESS: _____

PHONE: _____ (w) _____ (h) _____ (c)

I'M INTERESTED IN working with youth in grades 3 – 8 in an afterschool program assisting with a science, math, engineering and technology (STEM) curriculum. My options for volunteering include, but are not limited to:

- | | |
|---|---|
| <input type="checkbox"/> Host afterschool group at my worksite | <input type="checkbox"/> Assist in afterschool activities on an ongoing basis |
| <input type="checkbox"/> Mentor a young person in afterschool | <input type="checkbox"/> Be a one-time helper for STEM a activity |
| <input type="checkbox"/> Assist afterschool programs on field trips | <input type="checkbox"/> Help create curriculum for afterschool program |
| <input type="checkbox"/> Be a guest speaker at afterschool program | <input type="checkbox"/> Communicate regularly with youth via email |
| <input type="checkbox"/> Other: _____ | |

(Please indicate your activity preferences. See separate job description for expectations and responsibilities)

DAYS/TIMES I'M AVAILABLE: _____

WHY I'M INTERESTED IN VOLUNTEERING: _____

MY SPECIAL SKILLS/TALENTS ARE: _____

MY EXPERIENCE WORKING WITH YOUNG PEOPLE INCLUDES: _____

IN CASE OF EMERGENCY, CONTACT: _____

RELATION: _____ PHONE: _____

Reference 1: _____

NAME

PHONE NUMBER

Reference 2: _____

NAME

PHONE NUMBER

Reference 3: _____

NAME

PHONE NUMBER

VOLUNTEER SIGNATURE

DATE

VOLUNTEER REFERENCE FORM

Name of potential volunteer: _____

Name of reference: _____

Phone #: _____ Date: _____

How long have you known the applicant and in what capacity? _____

What three words would you use to describe the applicant? _____

Do you feel the applicant would be reliable/dependable in this volunteer position?: _____

Strengths and limitations of the applicant: _____

Other remarks: _____

VOLUNTEER HANDBOOK OUTLINE

The following outline is a suggestion for items to include in your volunteer handbook. A volunteer handbook is essentially a simplified version of your organization's personnel policies and the level of detail included is at the program's discretion.

- 1. Welcome Letter**
- 2. History of Organization**
 - Mission, Vision, Beliefs, Process of Organization
- 3. Organization Policies**
 - Non-discrimination
 - Sexual Harassment
 - Mandated Reporting
 - Drug and Alcohol Abuse
 - Emergency Evacuation Procedures
 - Emergency Weather Conditions
 - Location of Fire Extinguishers
 - Location of First Aid Kits
 - Making Personal Phone Calls
 - Appropriate Dress
- 4. Volunteer Policies**
 - Evaluation
 - Conflict Resolution
 - Conflict of Interest (i.e., volunteers are prohibited from receiving or seeking money or gifts from program participants)
 - Youth Volunteers (i.e., if under the age of 18, must have written consent from parent or guardian)
 - Insurance (are volunteers covered by organization's policy?)
 - Health (volunteers must be free of communicable diseases)
- 5. Volunteer Rights and Responsibilities**
 - Expectations
- 6. Steps to Becoming a Volunteer**
 - Complete Forms (Application, CORI, Medical form if necessary)
 - Meet with Afterschool Program Director (or appropriate person)
 - Tour Facility
 - Observe Program
 - Review and Sign Job Description
 - Arrange Volunteer Schedule
 - Ongoing Assessment and Evaluation
- 7. Job Description(s)/Types of Volunteer Opportunities Available at Organization**

CHECKLIST FOR IMPLEMENTING A VOLUNTEER PROGRAM

- Establish clear goals for volunteer program
- Identify program's volunteer needs
- Community mapping exercise
- Create plan for the volunteer program
 - Detailed volunteer job descriptions
- Recruit and assign volunteers
 - Volunteer application
- Orient, train and supervise volunteers
 - Create volunteer handbook
 - Plan for ongoing supervision/support
- Recognize volunteers
- Evaluate the volunteer program

CHECKLIST FOR VOLUNTEER ORIENTATION

- Complete forms
 - Application
 - References
 - CORI
 - Medical form (if necessary)
- Meet with afterschool program director
- Tour facility
- Observe program
- Review and sign job description
- Review volunteer handbook
- Share information provided in this guidebook
- Arrange volunteer schedule

SAMPLE SURVEY

References

Works Consulted

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Afterschool programs: At the STEM of learning, Afterschool Alliance, September 2006. www.afterschoolalliance.org/issue_briefs/issue_STEM_26.pdf

Basken, P., "Early education key to scientific career choice," *Boston Globe*, May 29, 2006. www.boston.com/news/education/k_12/articles/2006/05/29/early_education_key_to_scientific_career_choice/

Commitment to America's Future: Responding to the Crisis in Mathematics & Science Education, Business-Higher Education Forum, January 2005. <http://bhef.com/MathEduReport-press.pdf>

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Friedman, L., & Quinn, J. (February 2006). *How After-School Programs Can Nurture Young Scientists and Boost the Country's Scientific Literacy*. *Education Week* 25(24), pp. 45, 48, 49. http://www.tascorp.org/mediacenter/media_coverage/edweekscience

Friedman, L. (June 2005). *Where is After-School Headed and How do Science Learning Opportunities Fit Into the After-School Landscape*. http://tascorp.org/publications/catalog/ASScience/AS_and_Science.pdf.pdf

Howard, J. (1998). *Guide to Using Volunteers*. http://www.bgci.org/education/guide_to_using_volunteers/

McLaughlin, M.W. (2002). *Community counts: How youth organizations matter for youth development*. http://eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/10/fb/09.pdf

Measuring Corporate Volunteerism. (2004). http://www.volunteermatch.org/business/resources/LBG_one_sheet.pdf#search=%22%22measuring%20corporate%20volunteerism%22%22

Sharing Responsibility: How Leaders in Business and Higher Education Can Improve America's Schools. Business-Higher Education Forum, Winter 2001. http://www.bhef.com/includes/pdf/sharing_responsibility.pdf

Snider, A. (1985). The dynamic tension: Professionals and volunteers. *Journal of Extension*, 23(3). <http://www.joe.org/joe/1985fall/sa2html>

Smith, M., Meehan, C., Enfield, R., George, J., & Young, J. (2004). Improving county-based science programs: Bringing out the science teacher in your volunteer leaders. *Journal of Extension* 42(6).

<http://www.joe.org/joe/2004december/a5.shtml>

Tindle, K., Leconte, P., Buchanan, L., & Taymans, J.M. (April 2005). Transition Planning: Community Mapping as a Tool for Teachers and Students. <http://www.ncset.org/publications/viewdesc.asp?id=2128>

Walker, G., Wahl, E., & Rivas, L., "NASA and Afterschool Programs: Connecting to the Future." http://education.nasa.gov/pdf/113900main_NASAAfterschool_508_3_reduced.pdf

Additional Websites and Articles of Interest

Volunteer Management & Corporate Volunteer Programs

<http://www.uwmb.org/volunteer/index.html>

<http://www.energizeinc.com>

<http://www.pointsoflight.org>

<http://www.pointsoflight.org/networks/business/ncwv/>

<http://www.managementhelp.org/staffing/outsrcng/volnteer/volnteer.htm>

<http://www.volunteermatch.org/>

<http://www.volunteerist.org/index.html>

<http://www.wkkf.org/Pubs/Tools/Evaluation/Pub770.pdf>

Youth in Science

http://www.nc4h.org/greenlight/lrfa_back_lit.php

<http://www.astc.org/pubs/dimensions/2000/nov-dec/afterschool.htm>

http://www.tascorp.org/mediacenter/media_coverage/edweekscience

http://www.ja.org/files/polls/kids_careers_2004.pdf#search=%22mentors%20influence%20children's%20career%20choices%22

<http://www.awsn.com/OpMin/2005results.pdf#search=%22mentors%20influence%20children's%20career%20choices%22>

<http://www.afterschool.org/sga/pubs/whatweknow.pdf>

http://education.nasa.gov/pdf/113900main_NASAAfterschool_508_3_reduced.pdf

http://www.boston.com/news/education/k_12/articles/2006/05/29/early_education_key_to_scientific_career_choice/

<http://www.awsn.com/OpMin/2005results.pdf#search=%22mentors%20influence%20children's%20career%20choices%22>

Science in Afterschool

<http://www.uwmb.org/uwmv/mst/docs/activity-guides.pdf>

East End House

East End House is a multi-serve community center that has been serving residents of Cambridge and surrounding communities since 1875. We currently offer a wide variety of programs that serve residents of all income levels, ages, ethnicities, and backgrounds. Our programs include nationally accredited Child Care and School Age Programs, an Out of School Time Program for Middle School Youth, a Family Support and Engagement Initiative, an Emergency Food Program, an Infant Necessities Program, Community Workshops and Events, and Senior Activities. East End House is also home to grassroots community groups and, in conjunction with the Cambridge Police Department, created a Crime Prevention and Community Policing group open to all community members.

East End House is also committed to developing and implementing quality Science, Technology, Engineering, and Math (STEM) programming for youth of all ages. The agency launched Generating and Evaluating New Adventures in Science Afterschool (GENASAS) in 2007. GENASAS creates opportunities for youth to become more engaged in STEM programming through creative and age appropriate curriculum, mentors from the STEM sector, field trips to local companies and museums, guest speakers, and participation in science fairs and other competitions. The overall goals of the program are to complement school day learning with interactive projects and activities, as well as to expose youth to careers in the STEM field they may not have otherwise known existed or were accessible to them.

For more information about the programs East End House offers to the community, check out our website at www.eastendhouse.org.

