EXPLORE THE ADVENTURE...

Science Careers Exploring

Program Guide for Post Advisors

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Adult Leader Guide

Welcome to Exploring

You have been selected to be an Advisor or a committee participant for an Explorer post. Your role is significant. You have the opportunity to make a difference in the lives of young people, not just today but in the future as well.

Exploring is Learning for Life's career-education program for young men and women age 14 (who have completed the eighth grade) to 20 years old. Adults are selected by the participating organization for involvement in the program. Color, race, religion, gender, sexual orientation, ethnic background, economic status, and citizenship are not criteria for participation.

Local community organizations such as businesses, professional organizations, and civic groups initiate specific Explorer posts. They do this by matching the interests of young adults with the people and program resources within their own organizations. The result is a program of activities that helps youth pursue their special interests, grow, and develop.

Purpose

Exploring's purpose is to provide experiences to help young people mature and prepare them to become responsible and caring adults. Explorers are ready to investigate the meaning of interdependence in their personal relationships and communities.

Program Goals

Exploring has four specific goals for Explorers:

1. Gain practical experience in the career interest of the post.
2. Engage in program activities centered on the five emphasis areas (career opportunities, life skills, citizenship, character education, and leadership experience) to encourage the development of the whole person.
3. Experience positive leadership from adult and youth leaders and have the opportunity to take on leadership roles.
4. Have a chance to learn and grow in a supportive, caring, and fun environment.

This guide will help you understand how to develop the kinds of experiences in your Explorer post that will help you achieve the four goals.

Program Methods

To achieve the mission of Learning for Life, the following six Exploring program methods have been carefully designed to meet the developmental needs of young adults.

1. **Voluntary association.** In a voluntary association between youth and adults, youth are receptive to new ideas and experiences, a connection to new ways of thinking and acting, and a new identity.
2. **Ethical decision making.** By taking responsibility for their programs, activities, and experiences, Explorers learn how to make decisions and ethical choices.
3. **Group activity.** Exploring activities are interdependent group experiences in which success is dependent on the cooperation of all.
4. **Recognition of achievement.** Recognition comes through formal awards and acknowledgement of a youth's competence and ability by peers and adults.
5. **Democratic process.** The election of post officers is important to the post's success.
6. **Experiential learning.** Exploring is about curiosity, exploration, and adventure. Learning by doing provides opportunities for developing new skills and participating meaningfully in action-oriented activities.

Role of Adult Leadership

One of your key responsibilities as an adult leader is to work in partnership with the youth leaders of your post. To do this, it is important that you understand the role and responsibilities of each adult position and how each role relates to the youth.

The different adult roles include:

- Participating organization
- Post committee
- Advisor
- Associate Advisor (administration)
- Associate Advisor (program)
- Other associate Advisors
- Consultants

Position Descriptions

Participating Organization

- Initiates and commits to an Explorer post.
- Recruits adult leaders.
- Provides program resources.
- Secures meeting facilities.

The participating organization is a business, industry, school, labor group, professional society, government agency, civic club, or other community organization that operates an Explorer post. The program, leadership, and participation of the post are determined by the participating organization. Using the Exploring five-step plan, the participating organization agrees that it will recruit competent adult leaders, help those leaders secure program resources, and provide meeting facilities.

Post Committee

- Provides adequate adult leadership.
- Completes and maintains the post's adult resource survey.
- Secures equipment, faculties, and program resources.
- Reviews, supports, and approves the post's program plans.

The head of the participating organization recruits a post committee composed of four or more adults who serve during the post's participation year. Members meet frequently to ensure that the post has a quality program, under capable leadership, that achieves the purposes of the participating organization and Learning for Life.

The following adult positions (21 years of age or older) are mandatory for an Explorer post to be accepted:

- Post committee chair (one)
- Post committee member (minimum two)
- Explorer Advisor (one)

The following position is optional but strongly encouraged:

- Associate Advisor

One person is appointed by the head of the organization or selected by the committee to serve as its chair. The committee chair schedules and conducts all committee meetings and serves as a liaison between the Advisor and post's participating organization. The chair assigns projects to committee members and guides their efforts.

The post committee ensures that the post has an Advisor and at least one associate Advisor at all times. If a vacancy occurs, a post committee participant becomes the temporary Advisor. The committee takes immediate steps to recruit the right person to fill the vacancy. It guides and supports the post's efforts to earn money for trips, projects, or equipment and helps the post plan, budget, and properly account for all post funds. Some post committees assign specific responsibilities to each committee member on an annual basis. Other post committees operate on a task-force basis, with committee members agreeing to specific tasks on a month-to-month basis.

Advisor

- Fosters an environment within the Explorer post that has a true sense of community and encourages everyone's growth and responsibility to one another.
- Develops post officers to lead, plan, make decisions, and carry out a program of activities over an extended period.
- Encourages participation and support for the Explorer post from the participating organization, associate Advisors, post committee, parents, and other adults in the community.
- Upholds the standards and policies of the participating organization and Learning for Life.
- Provides the necessary framework for protecting post participants from abuse.
- Ensures that activities are conducted within safety guidelines and requirements.
- Seeks to cultivate within the participants of a post a capacity to enjoy life and to have fun through the Exploring experience.

The Advisor is the key adult leader and is responsible for training post officers, helping them plan a program of activities, coaching them in their leadership responsibilities, and obtaining adult help and resources as needed through the post committee. The Advisor is supported by two or more associate Advisors who serve as backup leaders and provide assistance for the program and administration of the post.

The ultimate responsibility for the post rests with the Advisor. This person is recruited by the head of the participating organization and is enrolled with Learning for Life as the primary adult leader. All information about Exploring from Learning for Life goes to the Advisor. The Advisor participates in all post meetings and activities, post officers' meetings, and post committee meetings, and conducts the annual Post Officers Fast Start Training.

As the primary adult leader, the Advisor sets the tone for the post, models the desired form of leadership, and helps officers and participants become leaders of the post. The Advisor coaches and guides, demonstrating through actions what the youth officers need to learn and demonstrate with one another and with post participants.

Associate Advisor (Administration)

- Provides backup leadership for the Advisor and assumes adult leadership of the post in the Advisor's absence.
- Supports the youth administrative vice president and assists this person specifically with post recruitment and recognition efforts.
- Knows the Advisor's responsibilities and supports those responsibilities in whatever way possible.

The primary role of the associate Advisor for administration is to partner with the youth administrative vice president. Together they coordinate the recruitment of new youth participants, sustain the interest of current youth participants, and provide recognition for the individual achievements of post youth participants.

Associate Advisor (Program)

- Supports the youth program vice president to help determine the interests of all youth participants, plan the year's program, and ensure that the post program calendar is maintained.
- Supports and coaches the activity chairs to help them plan and carry out their particular activities.
- Helps the program vice president and other officers evaluate completed activities and fine-tune the year's program of activities based on insights gained from the evaluations.

The primary role of the associate Advisor for program is to partner with the youth program vice president. They discover and survey the interests of the youth participants on an ongoing basis, plan and schedule activities for the post, and evaluate completed activities.

In addition, the associate Advisor for program should assist the activity chair of each activity to ensure that he or she experiences success in leading that activity.

Other Associate Advisors

Some posts, particularly those with large youth participation or a unique program, may have a number of adults serving as associate Advisors. Their responsibilities may include providing equipment and transportation, making parental contact, planning special activities and service projects, or helping with the superactivity. A post may recruit as many associate Advisors as it needs to carry out program plans.

Consultants

- Provide expertise to the post's program.
- Assist the post's activity committees in planning activities.

A consultant is a person whose special skills or talents are needed for a post activity or project. Usually, consultants are adults who are recruited on a one-time basis to provide expert help for a post activity or project.

Consultants may be employees of the participating organization, parents, or other adults in the community who are identified through the adult resource survey or recruited by the post committee.

For example, if the post's Explorer activity interest survey indicates that a number of youth would like to learn to snow ski, the post committee reviews the adult resource survey or contacts others with snow-skiing expertise. It recruits someone to serve as a consultant for the snow-skiing activity.

This consultant works with the post activity chair to plan the details of the activity. Consultants are recruited for their expert skills and might not know much about the post. The activity chair is responsible for explaining the interests and abilities of the youth participants and for planning an activity participants will like.

Many adults can serve as consultants to a post. Some are unable to serve as post leaders, but most are willing and flattered to serve as an expert consultant for an Explorer activity.

Key Factors for Success

1. **Use post resources.** Conduct the adult resource survey. This is an inventory of information about adults related to the participating organization and parents who are willing to provide program help to the post. This program help may involve their career knowledge, special skills, contacts, facilities, or ideas.
2. **Get parents involved.** Encourage parents to become involved in Exploring activities whenever possible. You may suggest that they serve on the post committee or provide transportation, equipment, chaperoning, counseling, or planning to support activities.
3. **Seek youth input.** Have each post participant complete the Explorer activity interest survey. Conduct the survey on a regular basis to check the interests of new participants.
4. **Guide youth leadership.** Youth officers are elected and trained to lead, plan, and make decisions regarding the implementation of post programs and activities. They should serve long enough to have successful experiences.
5. **Hold regular post meetings.** A minimum of two Explorer post meetings should be held each month. Discuss important business first. Reserve the remaining time for a planned hands-on activity. The post president conducts post meetings. A detailed written agenda should be developed for each meeting. The program vice president and activity chair make reminder phone calls to program presenters or consultants. The president should ensure that all post meetings start on time. Guests should be introduced and made to feel welcome.
6. **Train and develop youth officers.** The post officers' Fast Start training is a training and planning session for newly elected officers. It is led by the Advisor, youth president, and associate Advisors. Successful training provides a clear road map for the coming months and enables the officers to begin assuming leadership in their post.
7. **Give recognition for achievement.** Young adults expect to be rewarded for their accomplishments. There are several recognition programs and scholarship opportunities available for Explorers.
8. **Maintain a well-rounded program.** Use the five program of emphasis areas as a guide to plan programs that will help maintain interest and meet the goals and objectives of the Exploring program. A variety of program helps are available to assist you in developing and carrying out an effective program.

Learning Through Experience

Exploring is experiential learning with lots of fun-filled, hands-on activities. It promotes the conditions necessary for the growth and development of adolescents. Young people need experiences that allow them to:

1. Interact with peers and acquire a sense of belonging.
2. Gain decision-making experiences.
3. Discuss conflicting values and formulate their own value systems.
4. Reflect on self in relation to others and discover more about themselves by interaction.
5. Experiment with their identities.
6. Participate as a responsible member of a group.
7. Cultivate a capacity to enjoy life.

Exploring can provide these experiences in wholesome, well-planned programs run by youth participants.

Problem-Solving Model

The way young people learn to reason, solve problems, and make choices will stay with them for the rest of their lives. Explorer Advisors can do a great deal to help youth in posts learn a simple decision-making process that can help them make choices and resolve problems.

Explorers can use this practical three-step process to solve problems:

1. **Empathy.** Put yourself in the other person's place.
2. **Invention.** Invent as many solutions to the problem as you can, without trying to decide which is best.
3. **Selection.** List the advantages and disadvantages of each option, and then select the one that comes closest to meeting the needs of everyone involved.

Quality Control

How do you know when your post is successful? Exploring has a built-in quality control system—the youth participants themselves. If they don't like the program, they simply don't participate in the activities or attend the meetings. Stable and growing participation is a sign of success.

Reflection

Reflection is looking back at experiences once they are over in order to understand what happened and using this understanding in looking forward to the next action and new experiences.

We facilitate reflection by asking questions that cause people to think, *questions such as*

- **Listening skills.** *What listening skills did we use?*
- **Participation.** *Was participation in th*e *activity equally shared among post participants*?
- **Building commitment.** *How did the post get everyone's commitment to the solution?*
- **Trust.** *In what ways did participants demonstrate trust or distrust of each other?*
- **Use of influence and power.** *Did post participants use their influence in ways that contributed to group success? Why or why not? What kinds of influence were used in this activity?*
- **Conflict.** *In what ways were th*e *disagreements and conflicts helpful o*r *unhelpful*?
- **Concern for others.** *In what ways did we make sure everyone was cared for?*
- **Leadership.** *Who was a leader and why?*
- **Evaluating.** *What evaluation skills did we use?*
- **Decision making.** *How were decisions made? Was it an effective process?*
- **Planning.** *Did we plan adequately? Why or why not?*

Post Bylaws

The post president may appoint a committee chaired by the administrative vice president to draft the post bylaws. The draft is to be reviewed and approved by the officers, then approved by the post youth participants. Subsequent additions and revisions can be made at a regular officers' meeting and presented for approval at the next post meeting.

The elected post officers are expected to live by and enforce the post bylaws. New youth should be given a copy and asked to sign or otherwise indicate that they understand and agree to them.

The Explorer motto should be the preamble to the post bylaws. (See Guide, Suggested Post Bylaws at *www.learning-for-life.org/exploring*.)

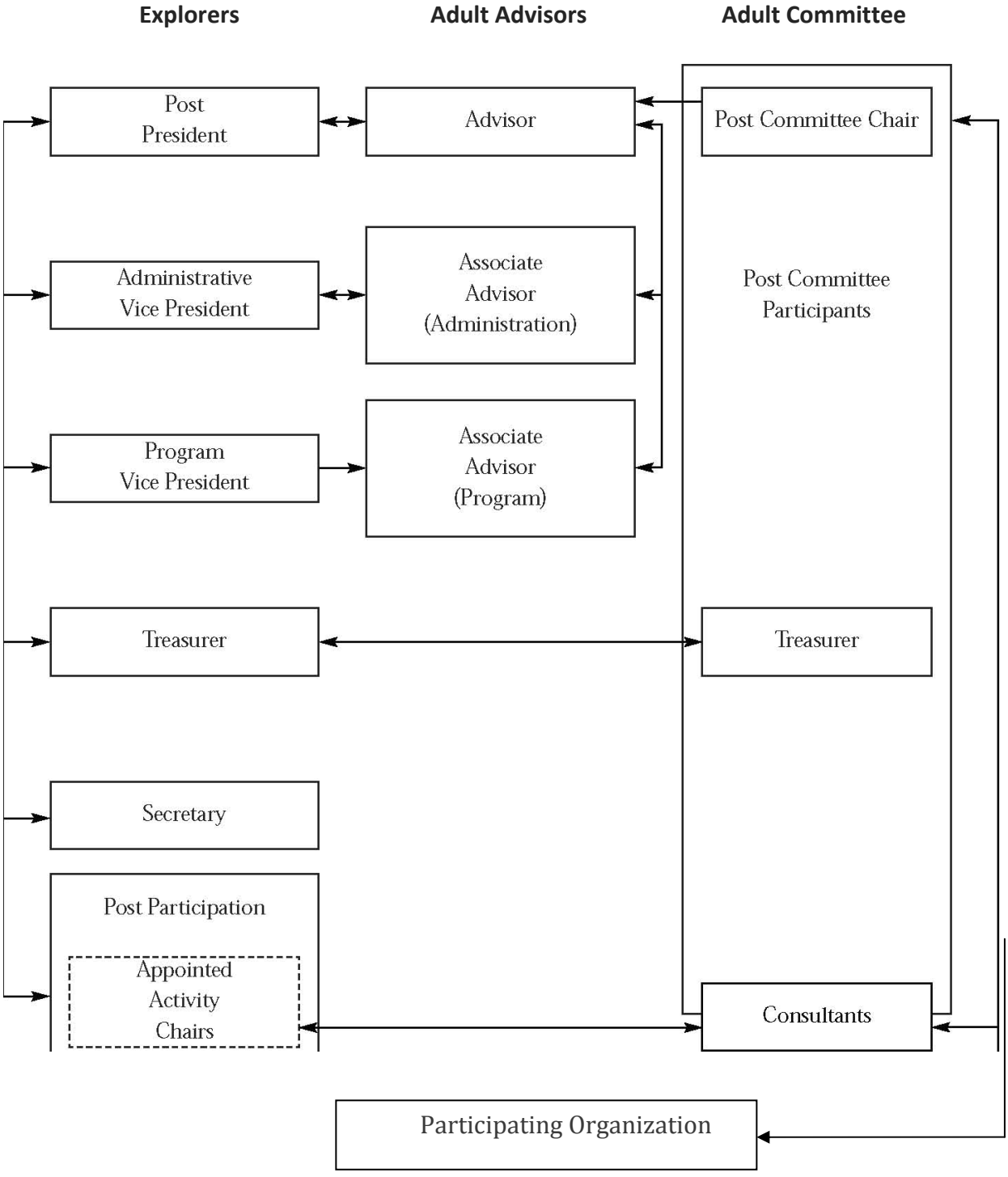
The Explorer Motto
Our best today for a better tomorrow!

Post bylaws often include:

- Participating organization policies
- Post meeting and operation plan
- Youth leadership standards
- Participation standards
- Behavior standards, expectations/resolution
- Meeting pattern
- Dress code
- Financial or money-earning expectations
- Purpose and mission of post
- Adult leader organization

Helpful Exploring Tools at www.learningforlife.org/exploring

Typical Post Organization Chart



What Is Science Careers Exploring?

The Science Careers Exploring program's primary goal is to expose youth ages 14 to 20 to the multidimensional aspects of and the varied occupations in science. Begun in 1972, Science Careers Exploring is a nationwide program for male and female students interested in pursuing a science career. Learning for Life conducts the Science Careers Exploring program, along with other career-related and character-development programs.

Science Careers Exploring helps youth explore career fields, assists in character development, and helps them develop social and life skills. Science Careers Exploring is an action-learning program. By providing hands-on, work-related activities to students, members of the science professions and organizations help youth "explore" the skills, intricacies, demands, and needs of various science careers.

Nationwide Workforce Shortages in Science Professions

Today, more than ever before, the science profession is experiencing nationwide workforce shortages across the board.

Projections Data for Science Careers

Occupational Title	Employment 2006	Projected Employment 2016	2006–2016 Percent Change
Biological scientists	87,000	95,000	9 percent
Biochemists and biophysicists	20,000	23,000	16 percent
Microbiologists	17,000	19,000	11 percent
Medical scientists	92,000	110,000	20 percent
Epidemiologists	4,500	5,100	14 percent
Medical scientists, except epidemiologists	87,000	105,000	20 percent
Chemists and materials scientists	93,000	102,000	9 percent
Chemists	84,000	91,000	9 percent
Materials scientists	9,700	11,000	9 percent

Source: U.S. Department of Health and Human Services. Data in table is rounded.

Science Careers Exploring Addresses Need to Increase Science Workforce

The challenge to increase the science workforce is daunting, but Science Careers Exploring is uniquely positioned to help stem shortages in this career field. Youth participants in Science Careers Exploring work with employees in science-related organizations to explore and learn about a wide array of science careers. Twice a month throughout the year, youth meet with employees at the worksite to get hands-on experience and exposure in a particular science career. Program activities in Science Careers Exploring are planned and executed by employees of the organization/institution and the youth participants involved in the program.

Many of the youth participants in Science Careers Exploring go on to successful careers in science.

Additional Projections Data for Science Careers			
Occupational Title	**Employment 2006**	**Projected Employment 2016**	**2006–2016 Percent Change**
Environmental scientists and hydrologists	92,000	114,000	25 percent
Environmental scientists and specialists, including health	83,000	104,000	25 percent
Hydrologists	8,300	10,000	24 percent
Astronomers and physicists	18,000	19,000	7 percent
Conservation scientists and foresters	33,000	35,000	5 percent
Foresters	13,000	14,000	5 percent
Geoscientists, except hydrologists and geographers	31,000	38,000	22 percent
Aerospace engineers	90,000	99,000	10 percent
Biomedical engineers	14,000	17,000	21 percent
Marine engineers and naval architects	9,000	10,000	11 percent
Nuclear engineers	15,000	16,000	7 percent
Petroleum engineers	17,000	18,000	5 percent

Source: U.S. Department of Health and Human Services. Data in table is rounded.

Mutual Benefits of Collaboration Between Science Careers Exploring and Local Science-Related Organizations

- Increase awareness and interest in science careers.
- Stem the workforce shortages in science professions.
- Develop future employees for the sponsoring organizations.
- Make a visible commitment to the welfare of the local community.
- Have a positive impact on the nation's educational process.
- Develop future responsible and caring citizens.
- Prepare young adults for the transition into career training and the workforce.
- Serve others.
- Build a cooperative relationships between adults and youth.

Working together, Science Careers Exploring and local science-related organizations can begin new and sustained collaborations of mutual benefit.

Organizing a Science Careers Explorer Post

Each year, Learning for Life requests support from business, industry, military, professional, service, and other community-based organizations across the country to operate Explorer posts.

Organizations interested in Science Careers Exploring are known as participating organizations. They provide program assistance for post meetings, activities, and trips through caring adult volunteer leaders recruited from the organization.

The Five Areas of Program Emphasis and Ideas for Science Post Programming

The Exploring program matches the interests of young adults with the resources and adult expertise of their participating organization. The following suggested ideas are specific elements that Explorer post leaders might use when planning a well-balanced Science Careers program around Exploring's five experience areas.

1. CAREER-RELATED ACTIVITIES. Activities that increase a youth's knowledge of a particular career field, build self-confidence, and help him or her experience success at school and work.

Suggested Activities and Ideas

- Plan programs and activities that feature a better understanding and appreciation of America's economic, business, and governmental systems through insight and practical experiences in careers.
- Review the variety of science careers in public and private agencies.
- Plan programs on careers in meteorology, aviation, air pollution control, law forensics, science journalism, agriculture, maritime weather, biometeorological effects, research and teaching, atmospheric science, geology, mining, land use, production, mineralogy, energy, petroleum, conservation, solid waste disposal, environmental science, recreation recycling and research, science health and safety, information systems, marketing and sales, science law, history, technology, small business and government, commercial fishing, navigation, Navy, Coast Guard, marine geology, and aquaculture, game, and fish management.
- Discuss the education, skills, and training needed for these careers. Use the **Career-Related Activities Work Sheet** (see sample and blank work sheets in the appendix) to plan out these types of programs. Review the **Science Careers Exploring Achievement Award** (see appendix).

2. LEADERSHIP EXPERIENCE. Programs that help youth develop leadership skills to fulfill their responsibilities in society. Advisors should encourage activities that provide exposure to different leadership styles.

Suggested Activities and Sources of Information

- Study the effects of science on the community, state, and nation.
  Study the history and development of weather forecasting, geology, conservation, chemistry, oceanography, wildlife management, and zoological parks and aquariums.
  Plan a program regarding the purposes and programs of the National Oceanic Atmospheric Administration and National Weather Service.
- U.S. Geological Survey, Department of Energy, American Petroleum Institute, and local school earth science courses where feasible.
- Local beautification and environmental organizations.
- The Department of Energy.
- American Chemical Society and the Chemical Manufacturers Association.
- National Wildlife Federation, Fish and Wildlife Service, the Wildlife Society, International Association of Fish and Wildlife Agencies, and Wildlife Management Institute.
- The American Association of Zoological Parks and Aquariums.

At the **Post Activities Program Development Meeting,** make sure to elect officers. Schedule the **Post Officers' Fast Start Training** to train the new officers. Get all Explorers involved with leadership by having youth chairs for all meetings and activities. Attend the **Post Leaders Workshop** conducted by your local Learning for Life/Exploring executive.

The Leadership Development Guidebook for Teens can be offered as a one-day session, an overnight meeting, or as a series of short, focused sessions. It works equally well with senior high school groups, work-based Explorer posts, community youth groups, and community youth leaders. The Leadership Development Guidebook covers 16 topics: Introduction to Leadership, Analysis and Evaluation, Beliefs and Values, Character of Leadership, Communication, Decision Making, Diverse Culture and Climate, Effective Group Management, Ethics of Leadership, Goal Setting, Managing Through Others, Meeting Management, Motivation, Planning and Sequence of Events, Team Building, and Time Management.

The Leadership Development Guidebook for Teens is available from your local Learning for Life/Exploring executive.

3. LIFE SKILLS. Programs that help youth develop physical and mental fitness. Activities that provide opportunities for youth to experience positive social interaction.

Suggested Activities

- Develop physical and mental fitness programs.
- Experience positive and social interaction through service projects for school, community, or charitable organizations.

Make sure to use the **Exploring Adult Resource Survey** (see appendix) and the **Exploring Youth Activity Interest Survey** (see appendix) to generate ideas for life skills!

The following Exploring resources are to be used with the online *Exploring Adult Leader Guide* and the *Exploring Youth Leader Guide.* (Go to *http://www.learningforlife.org/exploring/science,* then click on *Resources for Exploring Leaders* under *New Resources.*)

- How to Brainstorm
- How to Conduct a Post Parents' Night
- How to Develop Service Projects
- How to Earn Money
- How to Generate Publicity
- How to Introduce a Speaker
- How to Lead a Discussion
- How to Make a Speech or Presentation
- How to Plan Your Superactivity
- How to Recruit New Participants
- How to Teach a Skill
- How to Use Charts and Posters
- How to Use Parliamentary Procedure

4. CITIZENSHIP. Programs that encourage youth to develop the skill and desire to help others. Activities that provide opportunities for youth to gain a keen respect for the basic rights of others.

Suggested Activities

- Plan service projects for charities, churches, youth groups, and community organizations. Assist with projects and programs of the National Weather Service; develop and carry out conservation and energy-saving projects.
- Work with Keep America Beautiful, Inc., including the Clean Community System and other public education efforts; develop and implement local projects relating to beautifying, recycling, and reusing materials; participate in the nationwide Keep America Beautiful Week observation each April; seek national recognition through the Keep America Beautiful awards program; conduct workshops to instruct community residents in simple, low-cost ways to conserve energy.

- Work with the U.S. Geological Survey, Department of Energy, American Petroleum Institute, and local school earth science courses where feasible.
- Assist with tutoring, language skills, school programs, and public service projects related to business and chemical careers; organize chemistry competitions such as chem-a-thons, calculator contests, or science fairs; plan tournaments in public speaking, writing, communication, or laboratory skills; assist with American Chemical Society local section projects and work with local section chemists where feasible; promote the positive aspects of the chemical industry.
- Work with the National Oceanic and Atmospheric Administration, National Wildlife Federation, Fish and Wildlife Service, The Wildlife Society, International Association of Fish and Wildlife Agencies, and the Wildlife Management Institute; develop programs related to public relations, fund-raising, and conservation projects undertaken by zoological parks and aquariums.

Put citizenship and community service activities on the Post Program Development Calendar (see appendix). Remember that a community service project is one of the options for the **National Exploring Excellence Award!** Your Learning for Life/Exploring executive can provide information about this award.

Congressional Award. An adult advises the students and helps them set challenging but achievable goals in the four program areas required to receive this award. Once students have achieved their goals, they summarize them on a recommendation form. They'll receive a letter, which will let them know when their senator and/or member of Congress will present them with their medal and certificate. (Go to *www.learningforlife.org,* click on the Exploring icon, scroll down and click on *Awards and Scholarships,* and then click on *Congressional Award.*)

Helpful Exploring Tools (see public Web site). The following Exploring resources are to be used with the online *Exploring Adult Leader Guide* and the *Exploring Youth Leader Guide.* (Go to *www.learningforlife.org/exploring/science*, then click on *Resources for Exploring Leaders* under *New Resources.*)

- Challenge Initiative Games
- Cooperative Games
- Problem-Solving Initiative Games
- Becoming and Being a Leader
- Developing a Community of Youth Leaders
- Exploring for People With Disabilities
- Leadership Checkup
- Leadership Reflection
- Problem-Solving Skills for Explorers
- Suggested Post Bylaws

5. CHARACTER EDUCATION. Programs that help youth develop skills necessary for making ethical choices. Activities that provide opportunities for fulfilling one's responsibility to society.

Suggested Activities

- Have students help make ethical choices at home, Explorer post, and school.
- Have students serve as a mentor or role model for someone younger than themselves.
- Have students assist a special-needs youth.
- Have students help as staff members for the Learning for Life outdoor program, if they have one.

Character Education in Exploring. The local Learning for Life/Exploring executive can provide this flier, which describes the key components of character education in Exploring: Learning Through Experiences, Problem-Solving Skills, Character Education Forum, and Reflection.

Science Exploring Post Program Resources and Value-Added Components

Resources outlined below are available as noted on either the public Web site at *www.learningforlife.org/exploring/science/index.html* or from the local Learning for Life office. For local office information, go to *www.learningforlife.org,* then scroll down and enter your five-digit zip code and click on SEARCH.

Science Exploring Web Site. Visit the Science Exploring Web site at *www.learningforlife.org/exploring/science* for the following:

- *Exploring Adult Leader Guide* and *Exploring Youth Leader Guide.* Contain complete information for the youth and adult leaders of Explorer posts. These online guidebooks contain sections on getting started, post operation, leadership roles, key factors for success, qualities of a good program, post bylaws, etc.
- Scholarships for Explorers
- Suggested program ideas
- Youth Protection training [PowerPoint]
- Leadership Reflection
- Program Support for Explorer Posts
- Problem-Solving Skills for Explorers
- Suggested Post Bylaws

Career Achievement Award. The Learning for Life Career Achievement Award program allows young people to be recognized for community service and to acquire and be recognized for career proficiency achievement in arts and humanities, aviation, business, communications, engineering, fire and emergency service, health, law and government, law enforcement, science, skilled trades, social services, or all 12 career clusters. It gives Explorers and student participants distinguished credentials for their resume. (See the award criteria in the appendix, page 33.)

Congressional Award. An adult adviser the student chooses helps the student set challenging but achievable goals in the four program areas. Once they've achieved their goals, they summarize them on a recommendation form. They'll receive a letter, which will let them know when their senator and/or member of Congress will present them with their medal and certificate. (Go to *www.learningforlife.org,* click on the Exploring icon, scroll down and click on *Awards and Scholarships,* and then click on *Congressional Award.*)

Facts Every Teen Should Know About Sexual Abuse, No. 99-249. Available from the local Learning for Life office, this pamphlet contains five stories of sexual abuse situations that are meant to spur discussion in the context of an Explorer post meeting. Discussion points are suggested and resources are provided for more information about sexual abuse.

Leadership Award Program. The Leadership Award is given to youth and adults who have given exceptional dedication and leadership to youth participants in either the Learning for Life or Exploring programs. The award includes a certificate and ribbon medallion. (Go to *www.learningforlife.org,* click on the Exploring icon, scroll down and click on *Awards and Scholarships,* and then click on *Leadership Award Program*.)

Leadership Development Guidebook for Teens. The Learning for Life Leadership Development Series can be offered as a one-day session, an overnight meeting, or as a series of short, focused sessions. It works equally well with senior high school groups, work-based Explorer posts, community youth groups, and community youth leaders.

The Leadership Development Series covers 16 topics: Introduction to Leadership, Analysis and Evaluation, Beliefs and Values, Character of Leadership, Communication, Decision Making, Diverse Culture and Climate, Effective Group Management, Ethics of Leadership, Goal Setting, Managing Through Others, Meeting Management, Motivation, Planning and Sequence of Events, Team Building, and Time Management.

Liability Insurance for Participating Organizations. (Contact the local Learning for Life office for more information.) The general liability policy issued to Learning for Life provides primary liability insurance coverage for all participating organizations with a Learning for Life group or Explorer post. Automobile liability coverage is provided on a secondary or excess basis. All vehicles used in Learning for Life activities must be covered by automobile liability insurance with limits that meet or exceed the requirements of the state in which the vehicle is licensed. A $100,000 combined single limit is recommended. Any vehicle designed to carry 10 or more passengers is required to have limits of $100,000/$500,000/$100,000 or $500,000 combined single limit.

Although our general liability coverage has been extended on a primary basis to the participating organizations, the coverage for our volunteers remains on an excess basis. Any insurance coverage that a volunteer has, such as a homeowner policy or overage on his or her personal automobile, will still protect the volunteer on a primary basis, and Learning for Life's coverage will be over and above the limits that the individual volunteer has purchased. If the volunteer has no personal insurance, then our coverage will extend to cover him or her immediately. There is no coverage for those who commit intentional or criminal acts. Liability insurance is purchased to provide financial protection in the event of accidents or injury that is neither expected nor intended.

National Exploring Excellence Award. The local Learning for Life office provides a packet of materials for each post's annual renewal date. At renewal date the post can qualify for the National Exploring Excellence Award and make a commitment for the next program calendar year.

Safety First, Learning for Life Guidelines. Adult Explorer post leader's guide to keeping youth safe in Learning for Life activities. Topics include adult leadership; aquatics safety; camping; drug, alcohol, and tobacco use and abuse; safety practices and emergency preparedness; first aid; guns and firearms; sports and activities; medical information; transportation; and personal safety. The guidelines also include requirements for outings and activities, and is available on the Web. (Go to *www.learningforlife.org/exploring/science*, then click on *Safety First Guide to Learning for Life Activities* under *New Resources*.) National and Local Learning for Life Outings Permits can be obtained from the local Learning for Life office.

Youth Protection Training. As an adult Explorer post leader, you need to have basic knowledge about the potential for abuse of adolescents and the Youth Protection policies of Learning for Life that are designed to prevent it. Because of the coeducational nature of Exploring, Youth Protection takes on added dimensions.

It is important to realize that although child abuse is sometimes thought to be a problem only for young children, it's not unusual for adolescents to be victims of abuse, whether emotional, physical, or sexual. Therefore, Exploring leaders are obliged to be familiar with the Youth Protection emphasis of Learning for Life.

The Youth Protection guidelines are available on the Web for viewing. (Go to *www.learningforlife.org/exploring/science,* then click on Youth Protection Training [PowerPoint] under New Resources.) The site lists several considerations that the Explorer adult leader must remember, including that at least one adult is required to complete the Youth Protection presentation on the Web for any overnight outing. (National and Local Outings Permits can be obtained from the local Learning for Life office.)

Post Advisor Guidelines for Creating External Barriers to Abuse

- There must be two-deep adult leadership on all trips and on all activities.
- There must be no one-on-one contact with Explorers. Other Explorers or Advisors must be present.
- Respect the privacy of Explorer youth.
- Provide separate accommodations for Advisors and youth and for males and females on overnight trips.
- Ensure proper preparation for activities, especially those with safety risks.
- Secret organizations are not permitted.
- Hazing is not permitted.
- Appropriate standards for attire should be upheld.
- Proper training, supervision, and monitoring of officers is necessary.

Value-Added Science Exploring Superactivities and Mini-Activities

The following pages contain detailed information to help you conduct several different science-related superactivities and mini-activities. Listed with each activity are organizations and associations you can collaborate with to conduct these events. This list is not all-inclusive; there may be many other organizations in your area you can bring into the collaboration. Adapt and tailor these events to suit the resources and needs of your local area.

Superactivity: Conducting a Science Careers Exposition

Objective of the Event

Workforce shortages are enormous in almost every science profession. It's a nationwide problem that the science industry has been grappling with for many years. Conducting a Science Careers Exposition will:

- Help you tap into the resources of your local science community to create interest in and awareness of various science career fields
- Help schools provide career information to students
- Help students explore different science careers.

The goal is to provide a snapshot of different science careers, information about educational requirements, information about student financing, and hands-on exposure to various aspects of the careers highlighted at the exposition.

Who Should Participate

Suggested participants for the exposition are Science Careers Explorers, middle-school and high-school youth, guidance counselors, parents, and adult Explorer Advisors.

Forming Collaborations With Local Science Organizations

Collaborations with local science organizations should be the first step in conducting a Science Careers Exposition. Use the Internet to find these organizations and many others.

- Local middle schools and/or high schools
- Local science-related organizations
- National Science Teachers Association
- American Association for the Advancement of Science
- Association of Science Technology Center
- Association for Women in Science
- Computer Science Teachers Association
- U.S. Environmental Protection Agency
- National Middle Level Science Teachers Association
- NASA
- Renewable Energy Association
- Local universities' and community colleges' science departments

What a Science Careers Exposition Looks Like

Below is a laundry list of ideas for you to pick and choose from to incorporate in your Science Careers Exposition. Select the events that will garner the most support and will have widespread appeal to schools, youth participants, the local science communities, members of the Learning for Life committee, and those involved in the collaboration.

Science Careers Workshops. Conduct six to 12 different workshops that focus on science careers. The workshops could be round-robin sessions conducted in 40-minute or one-hour increments. Recruit local professionals from the science arena to conduct the workshops. The workshops should be hands-on experiences that give students clear insight into what the profession entails.

Panel Discussions. Conduct two or three science-related panel discussions/question-and-answer sessions at which panelists can respond to queries from the audience. Recruit local science professionals to sit on the panel and discuss real-time issues relative to their occupations.

Tours of Science Research Labs. Arrange tours for youth interested in seeing various areas of a local science-related organization or science department at a community college or university.

Financial Planning Workshops. Recruit personnel from local universities, community colleges, vocational schools, or science associations to discuss various financial programs available to help students and families pay for post-secondary education.

Test-Taking Workshops. Recruit personnel from a local university, community college, vocational school, or science association to discuss the various college enrollment tests that students will take in order to pursue certain science-related degrees.

Exhibits. Plan to have an exhibit area where science professionals and organizations can showcase their products and services.

Planning the Event

Allow at least three months of planning before you kick off a Science Careers Exposition. Working with members of the Learning for Life committee and organizations that are part of the collaboration, you should have plenty of time to coordinate a top-notch exposition. Larger events involving multiple cities and/or counties will require more time. The following is a suggested backdating calendar.

Science Careers Exposition Backdating Calendar	
90 Days Before Event	Conduct an event planning meeting with all members of the collaboration and the Learning for Life committee. Schedule date(s) for the event. Develop preliminary daily schedule of activities. List potential locations for the event.
70 Days Before Event	Send out invitations/promotional brochures to all potential participants and exhibitors. Include an event registration form in the mailing. Secure a location for the event and conduct a site visit.
60 Days Before Event	Conduct a second planning meeting with all parties involved in the collaboration. Recruit all speakers, workshop presenters, panelists, etc.
40 Days Before Event	Send an event reminder to all potential participants and exhibitors with the final schedule of activities. Send reminders to all speakers, workshop presenters, panelists, etc.
30 Days Before Event	Collect all participant and exhibitor registration forms and fees. Based on the estimated number of participants, finalize all contractual arrangements (i.e., meals, transportation, etc.).
20 Days Before Event	Conduct a second site visit, if necessary. Finalize any last-minute details.
Day 1 of Event	Conduct registration, etc.
One Week After Event	Send thank-you letters to all members of the collaboration, Learning for Life committee members, speakers, workshop presenters, panelists, exhibitors, etc.
20 Days After Event	Conduct a wrap-up/evaluation meeting with the Learning for Life committee and all members of the collaboration.

When and Where to Conduct the Exposition

Any time during the year is a good time to conduct a science careers exposition. Conducting the event on a weekend might be best. You might want to tie your event in with a national science-related observance, such as Earth Day or Arbor Day.

The exposition can be conducted as a one-day event, as a multiday event, or as a series of events held throughout the year. It can be held at the local Learning for Life office, school, community center, or anywhere that can accommodate the number of people you expect to participate.

Evaluation of the Event

Evaluation is an important tool for planning future Science Careers Expositions. After the event, talk with members of the Learning for Life committee, organizations involved in the collaboration, exhibitors, and others involved in the event. During the event, you might even have participants fill out brief event surveys that can be submitted for door prizes—a good way to get a count of how many people attended the event.

Send thank-you notes to all individuals who helped out and were key to the event's success. Also, be sure to send thank-you letters to all exhibitors.

Superactivity: Conducting a Community Service Learning Project: Global Warming Education Event

Objective of Event

The objective of a global warming education event is to have youth share and explore the benefits of a healthy planet. The negative consequences of not taking care of our planet can have dire consequences. Students will have an opportunity to understand the consequences of their actions and explore what it means to incorporate healthy habits that help our planet.

Who Should Participate

Suggested participants for this event are Science Careers Explorers, and elementary, middle, and high school students.

Forming Collaborations With Local Science Organizations

Collaborations with the following local organizations should be the first step in conducting a global warming education event:

- Local middle schools and high schools
- Local community colleges and universities
- U.S. Environmental Protection Agency
- Renewable Energy Association
- U.S. Geological Survey
- U.S. Department of Energy
- American Petroleum Institute
- National Weather Service
- National Oceanic Atmospheric Administration
- American Chemical Society
- Chemical Manufacturers Association
- National Wildlife Federation
- The Wildlife Society
- International Association of Fish and Wildlife Agencies
- Wildlife Management Institute
- American Association of Zoological Parks and Aquariums

Use the Internet to find these organizations and many others.

What a Global Warming Education Event Looks Like

Below are several ideas for you to pick and choose as your global warming education event. Select the event(s) that will garner the most support and will have widespread appeal to schools, youth participants, the local health community, members of the Learning for Life committee, and those involved in the collaboration.

Global Warming Day. Have students work with local officials to designate a Global Warming Day throughout the school and/or school district. Have students go on the Internet and research current data about this issue and prepare an information piece for distribution to all students in their schools. Organize a plenary session at the school, and conduct a panel discussion (with professionals in the field) about global warming and its impact on the planet.

Global Warming Poster Campaign. This campaign would include youth at all grade levels developing posters about the dangers of global warming. The posters could be displayed in school hallways, at community centers, at businesses, in grocery stores, at malls, etc. The idea is to get students at all developmental levels thinking about the dangers of global warming and taking action to spread their message throughout their community. Develop a registration form that all schools participating in the event should complete. The form should request the school name, address, office number, and contact person. It should also have a signature line for parents to sign giving permission for their child to participate in the global warming poster campaign.

Invite local science professionals to judge the posters submitted and determine first-, second-, and third-place winners. Contact local meteorologists and let them know about the event. Garner as much media attention as possible regarding the event.

Recognize all participants in the poster campaign by giving certificates of appreciation, and award trophies for first, second, and third place. Have local meteorologists congratulate winners during their daily weather report.

Student Reflection of Event(s)

Make sure that students participating in the event(s) have an opportunity to reflect, as a group, on what they did, how they felt about it, and what it meant to the youth and the community as a whole. This is a time for them to internalize what they did and value the experience.

Planning the Event

Allow at least three months of planning before you kick off a Global Warming Education Event. Working with members of the Learning for Life committee and organizations that are part of the collaboration, you should have plenty of time to coordinate a top-notch event. Larger events involving multiple cities and/or counties will require more time. On the following page is a suggested backdating calendar.

Global Warming Education Event Backdating Calendar	
90 Days Before Event	Conduct an event planning meeting with all members of the collaboration and members of the Learning for Life committee. Schedule dates for the event. Develop a list of potential schools that might participate in the event.
70 Days Before Event	Send out invitations/promotional brochures about the event to all potential participants. Include an event registration form in the mailing.
60 Days Before Event	Conduct a second planning meeting with all parties involved in the collaboration. Recruit all speakers. Meet with schools and students about the event.
40 Days Before Event	Collect all participant registration forms. Develop a schedule of activities for the event.
30 Days Before Event	Send a reminder to schools and students with a final schedule of activities. Canvass neighborhood businesses, institutions, etc., about displaying posters.
15 Days Before Event	Send a reminder to all businesses and institutions that agreed to display the posters.
10 Days Before Event	Finalize any last-minute details.
Week of Event	Follow up to make sure events are going as planned. Have students take posters to businesses, institutions, etc., that have agreed to display them, or schedule a location and time for business representatives to pick up the posters from the schools.
One Week After Event	Send thank-you letters to all members of the collaboration, Learning for Life committee members, and speakers.
20 Days After Event	Conduct a wrap-up/evaluation meeting with the Learning for Life committee and all members of the collaboration.

When to Conduct the Event

Anytime during the year is a good time to conduct a Global Warming Education Event. You might want to tie your event in with a national observance such as Earth Day. The event can be conducted as a one-day event, a multiday event, or as a series of events held throughout the year.

Evaluation of the Event

Evaluation is an important tool for planning a global warming education event. After the event, talk with members of the Learning for Life committee, organizations involved in the collaboration, and others involved in the event. Send thank-you notes to all individuals who helped out and were key to the event's success.

Science-Related Mini-Activities

These mini-activities should be done with adult Advisors or parent/guardian supervision. Follow the two-deep leadership policy.

I. Looking for Invaders From Outer Space

Objective: Students will apply principles of astronomy and Earth science.

Equipment Needed: Strong magnet, microscope

1. Go to the planetarium or go outside on a clear night away from light sources. Look for shooting stars, which are meteors. The best time to look is in early August.
2. Use a strong magnet to troll the bottom of a shallow stream. The particles that stick to the magnet are meteorites.
3. Place the meteorite under a microscope. You will see the crystalline structure of these "invaders." Note: Scientists studying a meteorite from Mars found evidence of proto-life. However, most of the scientific community are not convinced that the Martian meteorite shows evidence of life. The jury is still out on the issue.

II. Energy Efficiency Survey

Note: This project can be done as a community service activity.

Objective: Students will determine whether there is wasted heat/energy in their homes.

Equipment Needed: A sensitive thermometer

1. Take the temperature around windows and doors, looking for leaks.
2. Take the temperature 1 foot away from the furnace.
3. Take the temperature 1 foot away from the water heater.
4. Take the temperature in the attic.

Temperature increases of 10 degrees variation from ambient temperature indicates a possible need for more installation. If you're located in the South in the summer, you can use the same procedure to check for an air-conditioning leak.

III. Robotics Competition Weekend

Objective: Students will work in teams to build a robot to complete a task. Students will work with team members with a common goal.

Equipment Needed: Robotics building kit

1. Design the arena and the task that the robot must perform.
2. Find sponsors and a mentor by reaching out to organizations such as General Electric, NASA, and technology/vocational colleges and universities.
3. Using a standard robotics kit, design, create, and build a robot to perform the task.
4. Enter the robot in a competition weekend.

IV. Archaeological Dig

The following information contains different archaeology-related programs and organizations you can collaborate with to conduct archaeological [resource recovery project] events. The list is not all-inclusive; there may be many other organizations in your area with which you can form relationships and provide historic community services through archaeology.

Objective of Activity

Workforce shortages are evident throughout the United States, especially in finding volunteers to assist in excavations of historical sites. Through your archaeology activity, you will be able to provide vital services to professional archaeologists and organizations that are involved in resource recovery. You will find great excitement when you uncover a relic from the past that may someday be exhibited in a museum or be written about in local media. Through your participation, you and your post will

- Help tap into the resources of your local historic community and sites to create interest in and awareness of the past, from American Indian past to pioneer times and to Colonial days, to mention a few.
- Help schools provide career information to students.
- Help students explore different archaeological careers, internationally or within the United States.

The goal is to provide a snapshot of different types of archaeology careers, information about educational requirements, information about student financing, and hands-on exposure to various aspects of archaeology, from specialized research to real-time excavations (digs) to presentation and preservation.

Who Should Participate

Suggested participants in this activity are Explorers who have an interest in archaeology, middle- and high-school youth, guidance counselors, parents, and adult Advisors.

Form Collaborations With Local, State, and/or Federal Organizations

- Local, state, and private-sector museums
- Municipal or county historic organizations and associations
- State archaeological associations
- U.S. Army Corps of Engineers, local district

Remember: ***An archaeologist's work goes to ruins."***

Appendix

Science Careers Exploring Achievement Award

Learning for Life programs involve active learning and include lots of fun-filled, hands-on activities. Learning for Life promotes the conditions necessary for the growth and development of adolescents. The following are the key components of the Learning for Life Career Achievement Award programs, which allow young people to acquire and be recognized for career proficiency achievement and community service.

Purpose

The purpose of the Science Career Achievement Award program is to:

- Provide direction to Explorers and student participants in individual career proficiency.
- Motivate Explorers and student participants to discover and take on business career opportunities.
- Recognize Explorers and student participants for significant community service.
- Give Explorers distinguished credentials for their résumés.

Requirements

To earn the Science Career Achievement Award, the candidate must provide 50 hours of community service and complete any nine career achievements. The post Advisor certifies that each Explorer youth has satisfactorily performed 50 hours of community service and verifies that each candidate has completed at least nine achievements within the career cluster.

Recognition

The Learning for Life Career Achievement Award Certificate, No. 32194, has space for the signatures of both the adult leader and organization head. Certificates are available through the local Learning for Life office as well as through the Supply Group (toll-free phone, 800-323-0732). Adult leaders may purchase a quantity of the certificates and present them as merited.

Resources

Exploring Youth Leader Guide and Exploring Adult Leader Guide and Resources for Exploring Leaders can be found on the Learning for Life Web site *(www.learningforlife.org)*.

Qualifying Achievements

Because of the design and flexible nature of the program, Advisors and adult leaders are permitted a reasonable degree of latitude in substituting appropriate achievements that serve to meet the qualifying requirements for the Learning for Life Career Achievement Award.

Requirements

Do nine of the following:

1. Make three-dimensional models of the atoms of the three isotopes of hydrogen. Show neutrons, protons, and electrons. Make a presentation at a post meeting, community youth group, school class, or other group meeting using these models to explain the difference between atomic weight and number.
2. Write a 500-word essay telling who any five of the following people were, and explain what each of the five discovered in the field of atomic energy. Also, explain how any one person's discovery was related to another person's work: Henri Becquerel, Niels Bohr, Marie Curie, Albert Einstein, Enrico Fermi, Otto Hahn, Ernest Lawrence, Lise Meitner, Wilhelm Roentgen, and Ernest Rutherford.
3. a. Build an electroscope. Put a radiation source on or near the terminal.
   b. Demonstrate at your post meeting or another youth group meeting how it works. Explain any difference seen. Explain how you made the electroscope.
4. a. Build a model of a reactor.
   b. Make a presentation to your post or another youth group explaining how the reactor works. Explain the function of the fuel, the control rods, the shielding, the moderator, and any cooling material. Explain how a reactor could be used to change nuclear energy into electrical energy or make things radioactive.
5. a. Make and use a simple electromagnet.
   b. Show magnetic attraction and repulsion.
   c. Make a presentation to your post, your class, or another youth group, explaining how to use the knowledge you have acquired about magnetic attraction and repulsion.

   OR

   d. Create a tabletop display using the knowledge you have acquired about magnetic attraction and repulsion and display it at a post meeting, in your classroom, or in another public area.
6. With your post, another community youth group, or your school class, define "chemistry" and tell what chemicals are. Cover the following topics:
   - Explain the difference between atoms and molecules and between compounds and mixtures.
   - Prepare and present a list of 10 chemicals found in your home, and explain their uses.
   - Tell the difference between a chemical reaction and a physical change.
   - Tell how chemicals in your home are safely stored and how to dispose of them safely.

7. a. Learn about and be able to define inorganic chemistry.
   b. Carry out an experiment to show three different ways of protecting iron or steel from rusting.
   c. Tell why aluminum doesn't rust the way iron does.
   d. Do an experiment in which one metal makes another metal deposit from solution.
   e. Explain what takes place in terms of the activity series of metals.
8. a. Make a presentation to your post or another group on ONE of the following:
      - The formula for ozone. Tell where ozone is found. Tell how it is a pollutant but also necessary for a healthy environment.
      - The formula for carbon dioxide. Tell how it can cause the greenhouse effect.
      - The formula for sulfur dioxide. Explain what acid rain is. What does pH measure? Measure the pH of rain or a body of water near your home. Tell how acid rain can be prevented.

   OR

   b. Make a tabletop display using (a), (b), and (c) above. Display at your post meeting or in another public place.
9. Demonstrate the flow of heat energy. Use your demonstration with your post or another group to explain in your own words the ideas of heat, temperature, kinetic energy, calorie, and the laws of thermodynamics.
10. Make presentations to your post or another group, giving an example of each of the following forms of energy: heat, light, mechanical, electrical, chemical, and atomic. Prepare a table showing devices for each of the forms of energy that will convert each into another form of energy. Describe the idea of trade-offs in energy use.
11. a. Write a 500-word essay listing the main salts, gases, and nutrients in seawater. Describe some important properties of water. Tell how the animals and plants of the ocean affect the chemical composition of seawater. Explain how differences in evaporation and precipitation affect the salt content of the oceans.

    OR

    b. Make a presentation of the topics above to your post or another group.
12. Do materials science experiments to show the differences in strength and heat conductivity of wood, plastic, and metal. Explain how this affects building design. Discuss what you have learned with your post, your class, or another group.
13. Develop a project that would help solve an environmental problem, reduce a negative environmental effect, or increase environmental awareness in your community. Include plans for a specific project that your Explorer post, your school class, or another community group could do.
14. Attend a regional or national science career conference as either a staff member or a participant.

Science Careers Exploring Achievement Award Work Sheet

Name: _____

(Certification: Adult leaders must initial and date each completed achievement.)

Do nine of the following:

1. Make three-dimensional models of the atoms of the three isotopes of hydrogen. Show neutrons, protons, and electrons. Make a presentation at a post meeting, community youth group, school class, or another group meeting using these models to explain the difference between atomic weight and number.

Completed _____

2. Write a 500-word essay telling who any five of the following people were and explain what each of the five discovered in the field of atomic energy. Also, explain how any one person's discovery was related to another person's work: Henri Becquerel, Niels Bohr, Marie Curie, Albert Einstein, Enrico Fermi, Otto Hahn, Ernest Lawrence, Lise Meitner, Wilhelm Roentgen, and Ernest Rutherford.

Completed _____

3a. Build an electroscope. Put a radiation source on or near the terminal.

3b. Demonstrate at your post meeting or another youth group meeting how it works. Explain any difference seen. Explain how you made the electroscope.

Completed _____

4a. Build a model of a reactor.

4b. Make a presentation to your post or another youth group explaining how the reactor works. Explain the function of the fuel, the control rods, the shielding, the moderator, and any cooling material. Explain how a reactor could be used to change nuclear energy into electrical energy or make things radioactive.

Completed _____

5a. Make and use a simple electromagnet.

5b. Show magnetic attraction and repulsion.

5c. Make a presentation to your post, your class, or another youth group, explaining how to use the knowledge you have acquired about magnetic attraction and repulsion.

OR

5d. Create a tabletop display using the knowledge you have acquired about magnetic attraction and repulsion and display it at a post meeting, in your classroom, or in another public area.

Completed _____

6. With your post, another community youth group, or your school class, define "chemistry" and tell what chemicals are. Cover the following topics:

(a) Explain the difference between atoms and molecules and between compounds and mixtures.

(b) Prepare and present a list of 10 chemicals found in your home and explain their uses.

(c) Tell the difference between a chemical reaction and a physical change.

(d) Tell how chemicals in your home are safely stored and how to dispose of them safely.

Completed _____

7a. Learn about and be able to define inorganic chemistry.

7b. Carry out an experiment to show three different ways of protecting iron or steel from rusting.

7c. Tell why aluminum doesn't rust the way iron does.

7d. Do an experiment in which one metal makes another metal deposit from solution.

7e. Explain what takes place in terms of the activity series of metals.

Completed _____

8a. Make a presentation to your post or another group on ONE of the following:

(a) The formula for ozone. Tell where ozone is found. Tell how it is a pollutant but also necessary for a healthy environment.

(b) The formula for carbon dioxide. Tell how it can cause the greenhouse effect.

(c) The formula for sulfur dioxide. Explain what acid rain is. What does pH measure? Measure the pH of rain or a body of water near your home. Tell how acid rain can be prevented.

OR

8b. Make a tabletop display using (a), (b), and (c) above. Display at your post meeting or in another public place.

Completed _____

9. Demonstrate the flow of heat energy. Use your demonstration with your post or another group to explain in your own words the ideas of heat, temperature, kinetic energy, calorie, and the laws of thermodynamics.

Completed _____

10. Make presentations to your post or another group, giving an example of each of the following forms of energy: heat, light, mechanical, electrical, chemical, and atomic. Prepare a table showing devices for each of the forms of energy that will convert each into another form of energy. Describe the idea of trade-offs in energy use.

Completed _____

11a. Write a 500-word essay listing the main salts, gases, and nutrients in seawater. Describe some important properties of water. Tell how the animals and plants of the ocean affect the chemical composition of seawater. Explain how differences in evaporation and precipitation affect the salt content of the oceans.

OR

11b. Make a presentation of the topics above to your post or another group.

Completed _____

12. Do materials science experiments to show the differences in strength and heat conductivity of wood, plastic, and metal. Explain how this affects building design. Discuss what you have learned with your post, your class, or another group.

Completed _____

13. Develop a project that would help solve an environmental problem, reduce a negative environmental effect, or increase environmental awareness in your community. Include plans for a specific project that your Explorer post, your school class, or another community group could do.

Completed _____

14. Attend a regional or national science career conference as either a staff member or a participant.

Completed _____

Science Exploring Careers Achievement Award Application

Part 1: Candidate Personal Data

Post/No.:_____ Participating Organization: _____

Name:_____ Nickname: _____

Address:_____

City:_____ State:_____

Zip:_____

Home Phone: _____ Birth Date:_____

School/College:_____ Grade Level: _____

Part 2: Adult Leader Certification of Candidate

I certify that the above-named candidate has fulfilled nine required achievements and 50 hours of community service for the Learning for Life Career Achievement Award and has my approval for recognition of this significant accomplishment.

Adult Leader:_____

Date:_____

Part 3: Learning for Life Office Authorization

This candidate is a currently enrolled Explorer. Having been certified by the adult leader for completing the required nine achievements and 50 hours of community service, the Explorer post is authorized to purchase and present the Learning for Life Career Achievement Award certificate.

Learning for Life Office Signature:_____

Date:_____

Science Careers Exploring Achievement Award
Summary of Community Service

Name _____

Description of Activity	Total Hours	Supervisor Signature and Phone No.

Exploring Adult Resource Survey

Each year, our Explorers—young men and women age 14 to 20—work with adult leadership to create a new program. To help them, we are attempting to discover the talents and resources in our organization. Please complete the form by telling us if you have a skill or resource in any of the following areas.

Name _____

Occupation _____

Phone Number: (Work)_____ (Home)_____

	Have Skill	Have Resources
Bowling		
Camping		
Career Clinic		
College Planning		
Community Cleanup		
Computers		
Conservation Project		
Cycling		
Dance		
Field Sports		
First Aid		
Fishing		
Horseback Riding		
Ice Skating		

	Have Skill	Have Resources
Movies/Video		
Music		
Photography		
River/Whitewater Rafting		
Rock Climbing		
Roller-skating		
Sailing/Canoeing		
Snorkeling/Scuba Diving		
Snow Skiing		
Swimming		
Tour of City (Area)		
Visit to TV or Radio Station		
Waterskiing		

☐ I have a vehicle and am willing to help with transportation.
☐ I would be interested in working with the youth chair on events.

Other Sports/Recreation Activities: _____

_____

_____

Other Hobbies: _____

_____

_____

Other Ideas: _____

_____

_____

Sample Completed Career-Related Activities Development Work Sheet

Please add any additional career topics unique to either your participating organization or other available community-based organizations.

	Career-Related Activity Topics	Organization Has Resources	Organization Consultant
		YES/NO	Who will teach this skill?
1	Biological and Medical Scientists— Aquatic Biologists, Marine Biologists		
2	Biological and Medical Scientists—Biochemists		
3	Biological and Medical Scientists—Botanists		
4	Biological and Medical Scientists— Microbiologists, Medical Microbiologists		
5	Biological and Medical Scientists—Physiologists		
6	Biological and Medical Scientists—Biophysicists		
7	Biological and Medical Scientists— Zoologists, Wildlife Biologists		
8	Biological and Medical Scientists—Ecologists		
9	Biological and Medical Scientists—Soil Scientists		
10	Biological and Medical Scientists— Agricultural and Food Scientists		
11	Conservation Scientists and Foresters—Foresters		
12	Conservation Scientists and Foresters— Range Managers, Range Scientists		
13	Conservation Scientists and Foresters—Soil Conservationists		
14	Chemists and Materials Scientists— Improved Synthetic Fibers, Paints, Cosmetics		
15	Chemists and Materials Scientists— Processes That Save Energy and Reduce Pollution		
16	Chemists and Materials Scientists— Graphite Materials, Integrated-Circuit Chips, and Fuel Cells		
17	Chemists and Materials Scientists—Analytical Chemists		
18	Chemists and Materials Scientists—Organic Chemists		
19	Chemists and Materials Scientists—Inorganic Chemists		
20	Chemists and Materials Scientists— Physical and Theoretical Chemists		
21	Chemists and Materials Scientists—Macromolecular Chemists		
22	Chemists and Materials Scientists—Medicinal Chemists		
23	Chemists and Materials Scientists—Material Chemists		
24	Environmental Scientists and Geoscientists— Environmental Scientists		

25	Environmental Scientists and Geoscientists— Geoscientists, Seismologists, Geochemists		
26	Environmental Scientists and Geoscientists—Oceanographers		
27	Environmental Scientists and Geoscientists—Hydrologists		
28	Physicists and Astronomers—Laws of Gravity, Electromagnetism, and Nuclear Interactions		
29	Physicists and Astronomers—Physical Laws and Theories		
30	Physicists and Astronomers—Nature of the Universe		
31	Physicists and Astronomers—Solve Problems in Navigation, Space Flight, and Satellite Communications		
32	Physicists and Astronomers—Design Research Equipment		
33	Science Technicians—Chemical		
34	Science Technicians—Biological		
35	Science Technicians—Environmental Science and Protection		
36	Science Technicians—Forest and Conservation		
37	Science Technicians—Agricultural and Food Science		
38	Science Technicians—Geological and Petroleum		
39	Science Technicians—Forensic Science		
40	Science Technicians—Nuclear		

Sample Career-Related Activities Development Work Sheet (blank)

Please add any additional career topics unique to either your participating organization or other available community-based organizations.

	Career Opportunities Activity Topics	Organization Has Resources	Organization Consultant
		YES/NO	Who will teach this skill?
1			
2			
3			
4			
5			
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Sample Completed Science Careers Post Program Calendar

	1st Mtg. Date	1st Meeting Career-Related Activity Topic	1st Meeting Adult Consultant/ Youth Chair	2nd Mtg. Date	2nd Meeting Career-Related Activity Topic	2nd Meeting Adult Consultant/ Youth Chair	Monthly Post Activity Planning Meeting Date	Monthly Post Weekend Activity	Monthly Post Activity Consult-ant/ Youth Chair	Council Activity Programs
SEPT	**1st Wed**	Fall Firstnighter	Hal Mark	**2nd Wed**	Elect officers and plan post activity program	Bill Martha	**3rd Wed**	Picnic for post participants and families	Martha Bill	Exploring weekend at camp
OCT	**1st Wed**	Meteorology	James Sean	**2nd Wed**	Air pollution control	Cliff Cheryl	**3rd Wed**	Visit National Weather Service	Cheryl John	
NOV	**1st Wed**	Science journalism	Frank Tom	**2nd Wed**	Agriculture	Peggy Jimmy	**3rd Wed**	Assist local environ-mental organization	Jimmy Peggy	Quarterly conference
DEC	**1st Wed**	Maritime weather	Cosby Judy	**2nd Wed**	Biometeoro-logical effect	Marty Mariann	**3rd Wed**	Assist special-needs students	Mariann Marty	
JAN	**1st Wed**	Research and teaching	Laun Mike	**2nd Wed**	Atmospheric science	Jim Natalie	**3rd Wed**	Visit local water supplier	Natalie Jim	LFL Leadership Develop-ment Series
FEB	**1st Wed**	Geology	Matthew Danny	**2nd Wed**	Mining	John Cindy	**3rd Wed**	Visit local energy provider	Cindy John	
MAR	**1st Wed**	Land use	Tom Katy	**2nd Wed**	Energy	Carey Ann	**3rd Wed**	Conservation and energy-saving project	Ann Carey	Community service project
APR	**1st Wed**	Conservation	Cliff Maya	**2nd Wed**	Solid waste disposal	Debbie Murray	**3rd Wed**	Nationwide Keep America Beautiful Week observation	Murray Debbie	
MAY	**1st Wed**	Environmental science	Ashley Amy	**2nd Wed**	Recycling and research	Rayna David	**3rd Wed**	Assist National Weather Service education program	David Rayna	Annual Exploring banquet
JUNE JULY	**1st Wed**	Science health and safety	Matthew Monica	**2nd Wed**	Science law	Faye Hazel	**3rd Wed**	Visit university science departments	Hazel Faye	
AUG	**1st Wed**	Technology	Paul Denise	**2nd Wed**	Education skills and training	David Stephanie	**3rd Wed**	Visit zoo, park, fish and wildlife manage-ment facility	Stephanie David	Our Town at Night Activity

Sample Science Careers Post Program Calendar (blank)

	1st Mtg. Date	1st Meeting Career-Related Activity Topic	1st Meeting Adult Consultant/ Youth Chair	2nd Mtg. Date	2nd Meeting Career-Related Activity Topic	2nd Meeting Adult Consultant/ Youth Chair	Monthly Post Activity Planning Meeting Date	Monthly Post Weekend Activity	Monthly Post Activity Consultant/ Youth Chair	Council Activity Programs
SEPT	**1st Wed**			**2nd Wed**			**3rd Wed**			
OCT	**1st Wed**			**2nd Wed**			**3rd Wed**			
NOV	**1st Wed**			**2nd Wed**			**3rd Wed**			
DEC	**1st Wed**			**2nd Wed**			**3rd Wed**			
JAN	**1st Wed**			**2nd Wed**			**3rd Wed**			
FEB	**1st Wed**			**2nd Wed**			**3rd Wed**			
MAR	**1st Wed**			**2nd Wed**			**3rd Wed**			
APR	**1st Wed**			**2nd Wed**			**3rd Wed**			
MAY	**1st Wed**			**2nd Wed**			**3rd Wed**			
JUNE JULY	**1st Wed**			**2nd Wed**			**3rd Wed**			
AUG	**1st Wed**			**2nd Wed**			**3rd Wed**			

Sample Firstnighter Meeting Agenda

1. Greeters .....Post Committee

Greet the young people at the door. Welcome them, and have them sign in on the Explorer youth participants' roster. Pass out name tags.

2. Welcome ..... Participating Organization Representative

A representative of the participating organization gives a brief background on the organization's interest in Exploring and commitment to starting an Explorer post.

3. Activity/Icebreaker

Have the youth participate in a hands-on career activity to let potential Explorers see that the post program is going to be lively and exciting.

4. Description of Exploring and the Purpose of an Explorer Post..... Post Advisor

Let the youth know what Exploring is. Emphasize that youth are the leaders and involved in program with adult assistance.

5. Exploring Firstnighter Video (3:46 min.)..... Post Advisor

6. Description of Upcoming Activities ..... Committee Chair

Distribute the post's program development calendar, and explain the career focus of the Explorer post. Then discuss the kinds of activities Explorers would like to do.

7. Conduct Explorer Activity Interest Survey .....Post Committee

Hand out the Explorer activity interest survey, and give students time to complete the survey. This is the opportunity for youth participants to offer program suggestions.

8. Announce the Next Post Meeting ..... Post Advisor

Announce that Explorers will elect youth officers (president, vice president—program, vice president—administration, secretary, and treasurer). Explain that Explorers will lead the program. The results from the Explorer activity interest survey will be used to develop program ideas. Give the next post meeting date.

Next Post Meeting Date: _____

9. Invitation to Join and Refreshments ..... Post Advisor and Post Committee

Explain that the annual participation fee will be collected from those ready to join during refreshments.

10. Closing Comments ..... Participating Organization Representative

Give a brief, motivational send-off.

Notes:
1. Determine the top results from Explorer activity interest survey. Put them on a list for next meeting.
2. Forward participation fees and the Explorer youth participants' roster to the local Learning for Life office.
3. Existing posts should use youth officers during the agenda.

Exploring Youth Activity Interest Survey

Look at the list and place a checkmark in front of the three items you would like the post to plan as part of its program for this year. Use the lines on the last three items to write in suggestions that are not on this list.

Name: _____

- ☐ Bowling
- ☐ Camping
- ☐ Career clinic
- ☐ College planning
- ☐ Community cleanup project
- ☐ Computers
- ☐ Conservation project
- ☐ Cycling
- ☐ Dance
- ☐ First-aid training
- ☐ Fishing
- ☐ Horseback riding
- ☐ Ice skating
- ☐ Movies
- ☐ Music
- ☐ Photography
- ☐ River/whitewater rafting
- ☐ Rock climbing/rappelling
- ☐ Roller skating
- ☐ Sailing/canoeing
- ☐ Snorkeling/scuba diving
- ☐ Snow skiing
- ☐ Swimming
- ☐ Tour of city (area)
- ☐ Visit to TV or radio station
- ☐ Waterskiing

Sports Activities

_____

_____

_____

_____

Hobbies/Interests

_____

_____

_____

_____

Other Ideas

_____

_____

_____

_____

Activity Planner

Youth Activity Chairperson _____ Adult Consultant _____

Youth Phone No. _____ Adult Phone No. _____

Other Information _____

Name of the Activity: _____

Date: _____ Location: _____

Resources Needed: _____

_____

Alternatives

What is the alternate plan in case of bad weather or other factors?

_____

Personnel

Delegate responsibilities!

Job to Be Done	Assigned to

Follow Up

At additional meetings and through personal contacts, follow up on all assignments until you are sure you are all set. If the going gets rough, call on your Advisor for help.

Carry Out the Plan/Conduct the Activity

Just before the activity, double-check all arrangements. Notes: _____

_____

After the activity, thank everyone involved, and leave things clean and in good order.

After-Action Evaluation

Use a separate sheet to explain your reasons for how you answered.

Should the post do this activity again? _____ Yes _____ No

Number participating: _____ Explorers _____ Friends _____ Adults