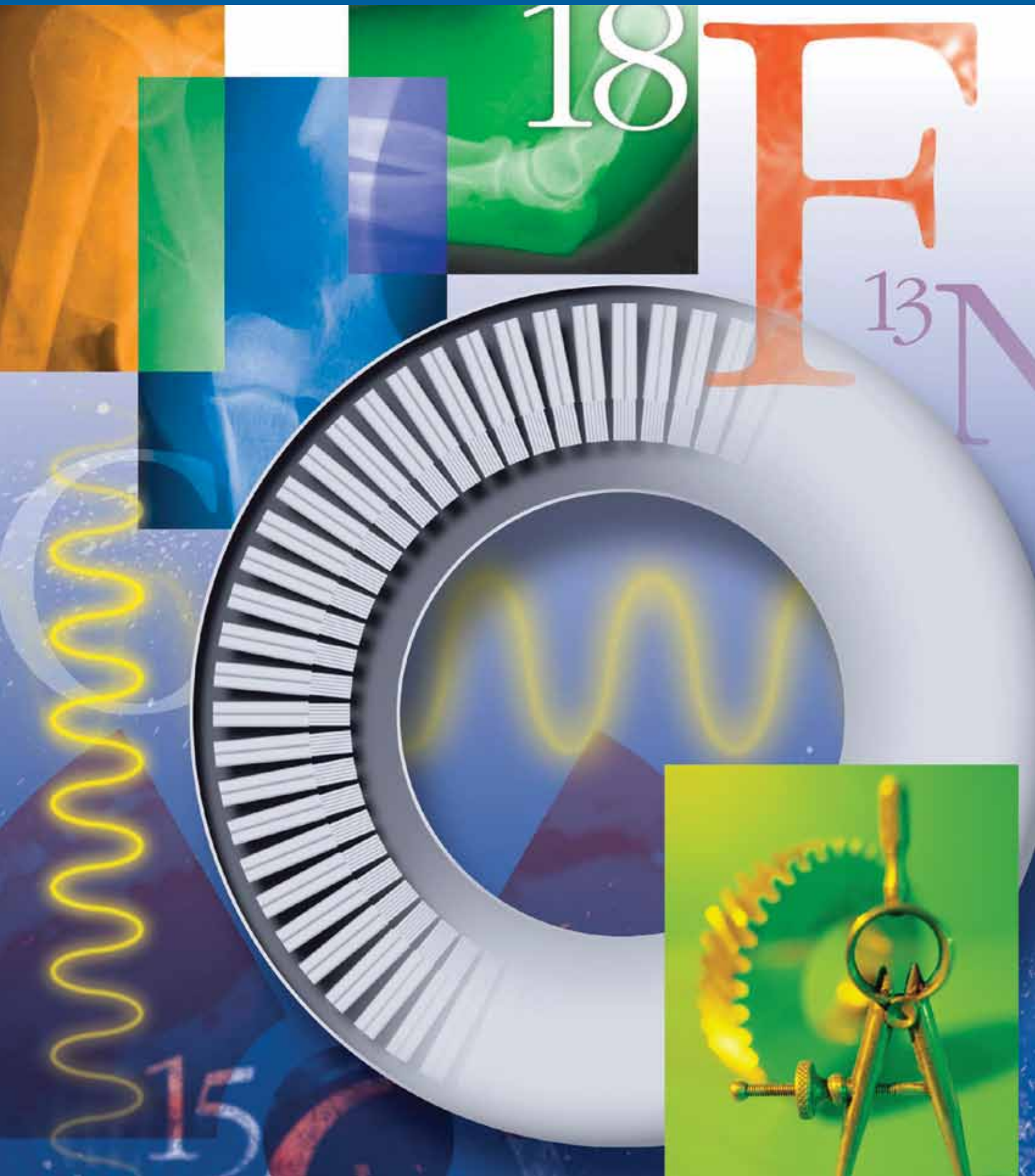
Engineering and Technology Exploring Program Guide for Post Advisors



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Real-World Career Experiences
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Welcome to Exploring

You have been selected to be an Advisor or a committee participant for an Exploring 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 ages 14 (who have completed the eighth grade) to 20. 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 Exploring posts. They do this by matching the interests of young adults with people and program resources in their own organizations. The result is a program of activities that helps youth pursue their special interests, grow, and develop.

As you read through this guide, please refer to the "Glossary of Terms" (see Appendix) to help you understand various terminology, forms, and resources needed to ensure the success of your post.

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Purpose

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

Program Goals

Exploring has four specific goals for its youth:

1. Gain practical experience in the career interest of the post.
2. Engage in program activities centered on the five areas of emphasis (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 Exploring 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, Explorer youth learn how to make good 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 sponsoring an Exploring 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 sponsors an Exploring 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)
- Exploring 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 the 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 Exploring 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 Exploring 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 program associate Advisor 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 program associate Advisor 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 and 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.

Post 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, and 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 should 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 (see "Post Youth Officers" in Glossary of Terms). 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 (see "Recognitions" in the Glossary of Terms).
8. **Maintain a well-rounded program.** Use the five areas of program emphasis as a guide to plan programs that will help maintain interest and meet the goals and objectives of the Exploring program. A variety of tools 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 that promote 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. Exploring 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 causing people to think through questions such as:

- **Listening skills.** *What listening skills did we use?*
- **Participation.** *Was participation in the 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 the disagreements and conflicts helpful or 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. For information regarding bylaws, go to *www.learningforlife.org/exploring*, select "What's New," click "Resources for Exploring Leaders," and scroll down to "Suggested Post Bylaws."

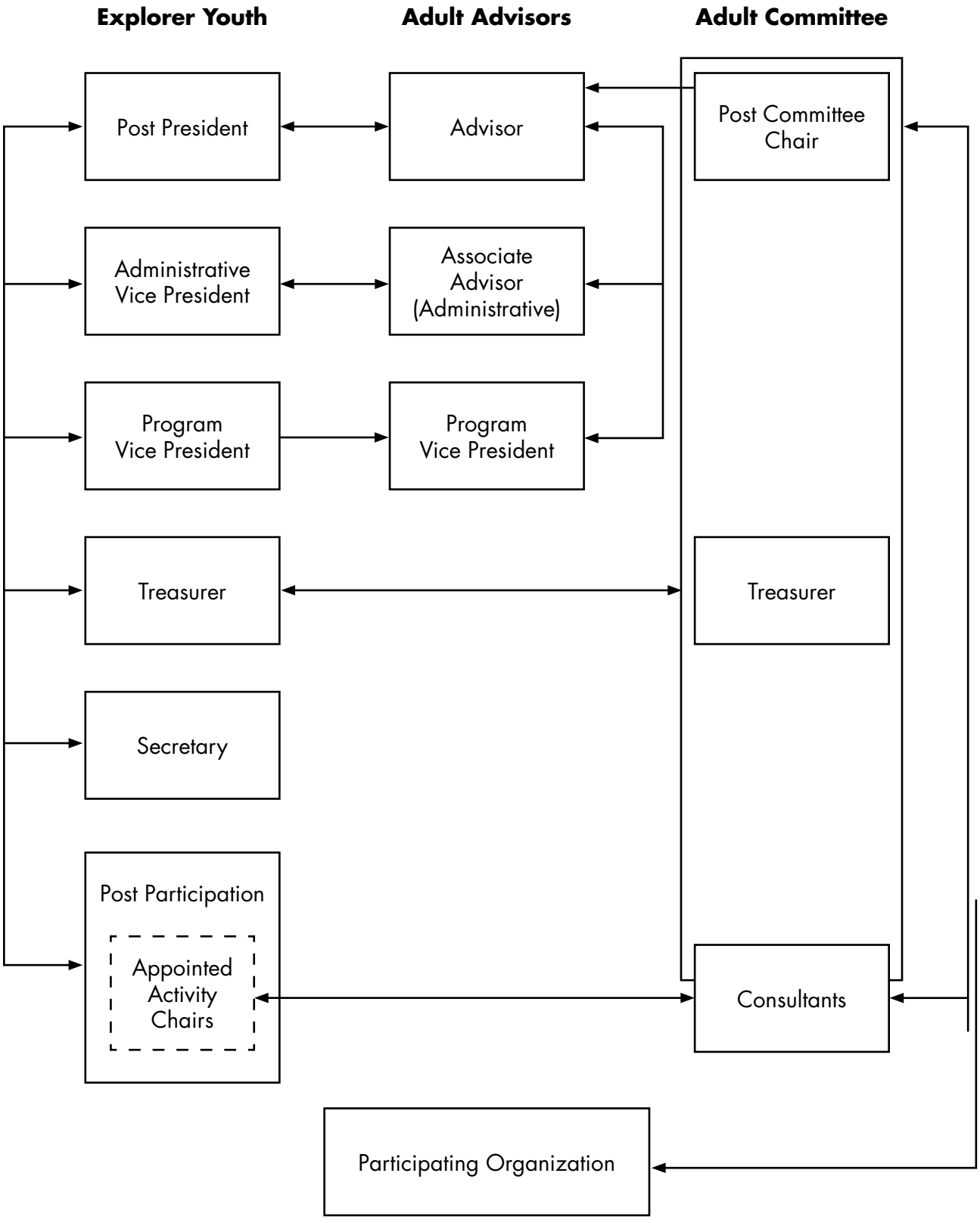
THE EXPLORER MOTTO

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, and resolutions
- Meeting pattern
- Dress code
- Financial or money-earning expectations
- Purpose and mission of post
- Adult leader organization

Typical Post Organization Chart



What is Engineering/ Technology Careers Exploring?

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

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

Today more than ever before, the engineering and technology professions are experiencing workforce shortages that may have dire consequences in today's global market and economy.

Nationwide Workforce Demands In Engineering and Technology Professions

Projections Data for Engineering Careers

Occupational Title	Employment 2008	Projected 2018	Change 2008–18	
			Number	Percent
Engineers	1,571,900	1,750,300	178,300	11
Aerospace engineers	71,600	79,100	7,400	10
Agricultural engineers	2,700	3,000	300	12
Biomedical engineers	16,000	27,600	11,600	72
Chemical engineers	31,700	31,000	-600	-2
Civil engineers	278,400	345,900	67,600	24
Computer hardware engineers	74,700	77,500	2,800	4
Electrical and electronics engineers	301,500	304,600	3,100	1
Electrical engineers	157,800	160,500	2,700	2
Electronics engineers, except computer	143,700	144,100	400	0
Environmental engineers	54,300	70,900	16,600	31
Industrial engineers, including health and safety	240,400	273,700	33,200	14
Health and safety engineers, except mining safety engineers and inspectors	25,700	28,300	2,600	10
Industrial engineers	214,800	245,300	30,600	14
Marine engineers and naval architects	8,500	9,000	500	6
Materials engineers	24,400	26,600	2,300	9
Mechanical engineers	238,700	253,100	14,400	6
Mining and geological engineers, including mining safety engineers	7,100	8,200	1,100	15
Nuclear engineers	16,900	18,800	1,900	11
Petroleum engineers	21,900	25,900	4,000	18
All other engineers	183,200	195,400	12,200	7

NOTE: Data in this table are rounded. *Source: Department of Labor's Bureau of Labor Statistics*

Exploring's Engineering/ Technology Careers Program Addresses Workforce Needs

The challenge to meet workforce demands in engineering and technology is ever increasing, but Exploring's Engineering/Technology Careers Program is uniquely positioned to help meet workforce needs by getting youth in the pipeline. Youth participants in Engineering/Technology Careers Exploring work with engineering and technology professionals in organizations to explore and learn about a wide array of careers in this field. Twice a month throughout the school year, youth meet with employees at the worksite to get hands-on experience and exposure in a particular engineering/technology career. Program activities in Engineering/Technology Careers Exploring are planned and executed by employees of the organization or institution and the youth participants involved in the program. Many of the youth participants in Engineering/Technology Careers Exploring Program go on to successful careers in this field.

Mutual Benefits of Collaboration Between Engineering/Technology Careers Exploring and Local Engineering-and Technology-Related Organizations

- Increase awareness and interest in engineering and technology careers.
- Stem the workforce shortages in engineering and technology 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 cooperative relationships between adults and youth.

Working together, Engineering/Technology Careers Exploring and local engineering- and technology-related organizations can begin new and sustained collaborations of mutual benefit.

Organizing an Engineering/ Technology Careers Exploring Post

Each year, Learning for Life requests support from business, industry, military, professional, service, and other community-based organizations across the country to sponsor Exploring posts. Organizations that sponsor Engineering/Technology Careers Exploring posts are known as participating organizations. They provide program assistance for post meetings, activities, and trips through caring adult volunteer leaders recruited from the organization.

Five Areas of Program Emphasis and Programming Ideas for Engineering/ Technology Career Posts

The Exploring program matches the interests of young adults with the resources and adult expertise of the participating organization. The following suggested ideas are specific elements that Exploring post adult and youth leaders might use when planning a well-balanced Engineering/Technology Careers program around Exploring's five areas of program emphasis: career opportunities, leadership experience, life skills, citizenship, and character education.

1. **CAREER OPPORTUNITIES:** These are program activities that develop potential contacts who may broaden employment options, and activities that boost a youth's self-confidence and help them experience success at school and work.

SUGGESTED ACTIVITIES: These are program activities that investigate the total scope of engineering and technology careers in industries such as agriculture, military, government, research, and recreation. Visit a manufacturing facility to see the practical applications of engineering. Government or military installations are great places to see engineering in action. Various governmental laboratories are available for touring. Universities also have a variety of engineering programs such as engineering academies that will welcome potential students. Use the Engineering Exploring Career Opportunities Worksheet (see Appendix) to plan out these types of programs. Review the Career Achievement Award for Engineering Exploring *(see Appendix)*.

2. **LEADERSHIP EXPERIENCE:** These are program activities that help youth develop leadership skills to fulfill their responsibilities in society. Adult advisors should encourage activities that provide exposure to different leadership traits.

SUGGESTED ACTIVITIES: Elect post officers to coordinate trips and plan post's outings. Each activity should have a youth chair who works with an adult to organize the activity. Activities could include: 1) studying the effects of engineering on the community, state, and nation; 2) reviewing the ethics, licensing, and regulation of engineers; 3) studying the history and development of engineering/technology; and 4) planning a program based on the purposes of the National Society of Professional Engineers. At the post activities program development meeting, make sure to elect officers. Schedule the post officers' Fast Start training for 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.

Learning for Life's *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 for Teens* 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 *Guidebook* is available from your local Learning for Life/Exploring executive.

3. **LIFE SKILLS.** These are program activities 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 for Explorer youth. Help youth 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 Explorer Youth Activity Interest Survey *(see Appendix)* to generate ideas for life skills. The Exploring resources listed below are to be used with the *Exploring Adult Leader Guide* and the *Exploring Youth Leader Guide*.

Go to *http://www.learningforlife.org/exploring/engineering* to find resources listed below; click "Resources for Exploring Leaders" under "What's New."

- 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 Super Activity
- How to Recruit New Participants
- How to Teach a Skill

- How to Use Charts and Posters
- How to Use Parliamentary Procedure

4. **CITIZENSHIP:** These are program activities that encourage youth to develop the skill and desire to help others. Exploring posts need to provide activities that give youth opportunities to gain a keen respect for the basic rights of others.

SUGGESTED ACTIVITIES: Engineering/Technology Explorer youth can serve as tutors or coaches to other students, or they can conduct environmental research projects and share the results or impact with their local communities. Youth can also work with local government agencies by assisting with civil engineering projects that involve surveys. Put citizenship and community service activities on the post's program calendar. Remember that a community service project is one of the options for the National Exploring Excellence Award!

Adult advisors can also help Explorer youth win the esteemed Congressional Award. This is series of awards that are bestowed to youth across the country by The Congressional Award Foundation, based in Washington, D.C. Adult advisors work with students to help them set challenging but achievable goals in the four areas of award criteria: volunteer public service, personal development, physical fitness, and expedition/exploration. Once students achieved their goals, they summarize them on a recommendation form and send it to The Congressional Award Foundation. Youth will receive a letter from the foundation that will let them know when their senator and/or member of Congress will present them with their medal and certificate. For more information, go to *www.learningforlife.org,* click on the Exploring icon, then scroll down and click on "Awards and Scholarships," and click on "Congressional Award."

The following Exploring resources are to be used with the *Exploring Adult Leader Guide* and the *Exploring Youth Leader Guide*. Go to *www.learningforlife.org/exploring/engineering* and 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:** These program activities help youth develop the skills necessary to make ethical choices. Strong programming involves activities that provide students with opportunities to fulfill their responsibility to society.

SUGGESTED ACTIVITIES: Get youth involved in engineering-related competitions or have a model rocket–launching event. Have an annual post awards banquet. Conduct seminars on developing communications skills. Have youth assist with projects to help retirees, special needs individuals, the elderly, or disadvantaged people.

Engineering/Technology Exploring Post Program Resources and Value-Added Components

Engineering Exploring Web Page

Visit the Engineering Exploring Web site at *www.learningforlife.org/exploring/engineering* for the following:

- Steps for Conducting an Engineering Academy
- Career Achievement Award for Engineering Explorers *(also see Appendix)*
- Safety First Learning for Life Guidelines

- Youth Protection
- Adult Leaders' Guide
- Youth Leaders' Guide
- Drug Abuse Prevention for Teens
- Scholarships for Explorers
- Resources for Exploring Leaders

Other Helpful Web Site Tools

Resources for Exploring leaders can be found on the Learning for Life Web site at *www.learningforlife.org/exploring/engineering* under "New Resources."

- Exploring Secretary's Records
- Exploring Treasurer's Records
- Exploring Clip Art
- Approval of Parents or Guardians
- Brainstorming Worksheet
- Money-Earning Application
- Challenge Initiative Games
- Cooperative Games
- Problem-Solving Initiative Games
- Leadership Skills
- Participation Awards Program
- Becoming and Being a Leader
- Developing a Community of Youth Leaders
- Exploring for People With Disabilities
- Leadership Checkup
- Leadership Reflection
- Program Support for Explorer Posts
- Problem-Solving Skills for Explorers
- Suggested Post Bylaws
- 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 Super Activity
- How to Recruit New Participants
- How to Teach a Skill
- How to Use Charts and Posters
- How to Use Parliamentary Procedure

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. Explorers receive distinguished credentials for their resume. See Appendix.

Facts Every Teen Should Know About Sexual Abuse, No. 99-249

This pamphlet is available from the local Learning for Life office and contains five stories concerned with risky situations of sexual abuse. These stories 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 (see public Web site)

The Leadership Award is given to youth and adults who have given exceptional dedication and leadership to the Exploring program. The award includes a certificate and ribbon medallion. For more information, go to *www.learningforlife.org*,

click on the Exploring icon, scroll to "Awards and Scholarships," and then click on "Leadership Award Program."

Leadership Development Guidebook for Teens

The Learning for Life leadership workshop 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 Workshop 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. Contact your local Learning for Life office for more information.

Liability Insurance for Participating Organizations

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 coverage 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. Contact your local Learning for Life office for more information.

Recognition Items

The following items are available through your local Learning for Life office (go to *www.learningforlife.org,* click on "Resource Catalog"):

- Advisor Exploring Emblem Patch, No. 04031A
- Associate Advisor Exploring Emblem Patch, No. 04033A
- Engineering Exploring Emblem Patch, No. 04183A
- Engineering Exploring Lapel Pin, No. 04182A
- Base Wood for Explorer Ornament "E," No. 17583A
- Career Achievement Award Certificate, No. 32194
- Exploring Appreciation Certificate, No. 33144A
- Exploring "E" Emblem Patch, No. 04002A
- Lapel Pin, Explorer "E," No. 04001A
- Leadership Award Certificate, Youth and Adult, No. 32195
- Leadership Award Medallion, Youth and Adult, No. 04173
- Learning for Life Tie, No. 50022
- Mug, Exploring "E", No. 04003A
- Ornament, Explorer "E," No. 04105A
- Panel Drape, Exploring, No. 11134A

- Paperweight, Explorer, No. 04160A
- Paperweight, Thank You Exploring, No. 17695A
- Plaque, Exploring Logo on Walnut With Engraving Plate, No. 17685
- Post Committee Emblem Patch, No. 04045A
- President Explorer Emblem Patch, No. 04035A
- Secretary Explorer Emblem Patch, No. 04039A
- Treasurer Explorer Emblem Patch, No. 04041A
- Vice President Explorer Emblem Patch, No. 04037A

Safety First Learning for Life Guidelines

This is the adult Advisor's guide to keeping youth safe during 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 (go to *www.learningforlife.org/exploring/engineering,* then click on "Safety First Guide to Learning for Life Guidelines").

Youth Protection Training

(Go to *www.learningforlife.org*, click "Post Advisor Training," and then click "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. It lists several considerations that the Explorer leader must remember. At least one adult is required to complete the Youth Protection presentation on the Web for any overnight outing. Safety First Guidelines has the requirements for outings and activities. It is also available on the Web at *www.learningforlife.org*. Outing permits can be obtained from the local Learning for Life office.

Post Advisor Guidelines for Creating External Barriers:

- 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 your Explorers.
- Provide separate accommodations for Advisors and Explorers 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 Post Activities: Engineering/ Technology Exploring Super Activities and Mini Activities

The following pages contain detailed information to help you conduct several engineering- and technology-related super activities and mini activities. Listed with each super 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.

Super Activity

Conducting an Engineering/ Technology Careers Exposition

Objective of the Event

Workforce shortages are of real concern in many engineering and technology professions. It's a nationwide problem that the engineering and technology industries have been grappling with for several years. Conducting an Engineering/ Technology Careers Exposition will:

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

The goal is to provide a snapshot of different engineering and technology 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 Engineering/Technology Careers Explorer youth, middle-school and high-school youth, guidance counselors, parents, and adult Exploring Advisors.

Forming Collaborations with Local Engineering and Technology Organizations

Collaborations with local engineering and technology organizations should be the first step in conducting an Engineering/Technology Careers Exposition. Use the Internet to find these organizations and many others.

- American Society for Engineering Education
- National Academy of Engineering
- Society of Women Engineers
- National Action Council for Minorities in Engineering
- NASA
- Renewable Energy Association
- Society for American Military Engineers
- US Army Corps of Engineers
- Center for Energy Workforce Development
- Local universities' and community colleges' engineering departments

What an Engineering/Technology Careers Exposition Looks Like

Below is a laundry list of activities for you to pick and choose from to incorporate in your Engineering/ Technology Careers Exposition. Select the events that will garner the most support and will have widespread appeal to schools, youth participants, the local engineering and technology community, and those involved in the collaboration.

Careers Workshops. Conduct six to 12 workshops that focus on different engineering and technology careers. The workshops could be round-robin sessions conducted in 40-minute or one-hour increments. Recruit local professionals from the engineering and technology 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 engineering- and technology-related panel discussions/question-and-answer sessions at which panelists can respond to queries from the audience. Recruit local engineering and technology professionals to sit on the panel and discuss real-time issues relative to their occupations.

Tours of Engineering and Technology Facilities. Arrange tours for youth interested in seeing various areas of a local engineering- or technology-related organization or the engineering and technology school at a community college or university.

Financial Planning Workshops. Recruit personnel from local universities, community colleges, vocational schools, or engineering and technology 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 engineering and technology association to discuss the various college enrollment tests that students will take in order to pursue certain engineering- and technology-related degrees.

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

Planning the Event. Allow at least three months of planning before you kick off an Engineering/Technology 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. See backdating calendar, Table A below.

When and Where to Conduct the Exposition. Any time during the year is a good time to conduct an engineering/technology careers exposition. Conducting the event on a weekend might be best. You might want to tie your event in with a national observance, such as Earth Day.

The exposition can be conducted as a one-day event, as a multi-day event, or as a series of events held throughout a series of weeks or months. 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 engineering/technology careers expositions. After the event, talk with members of the Learning for Life office, organizations involved in the event, and exhibitors. 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.

Table A

Engineering/Technology Careers Exposition Backdating Calendar

90 Days Before Event	Conduct an event planning meeting with all members of the collaboration. Schedule date(s) for the event. Develop preliminary daily schedule of activities. List potential locations for the event.
70 Days Before Event	Secure a location for the event and conduct a site visit. Send out invitations/promotional brochures to all potential participants and exhibitors. 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, 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	Send thank-you letters to all members of the collaboration.
20 Days After Event	Conduct a wrap-up/evaluation meeting with all members of the collaboration.

Super Activity

Conducting a Community Service Project: Global Warming Education Event

Objective of Event

The objective of a global warming education event is to have youth learn 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 Engineering Careers Explorers and elementary, middle, and high school students.

Forming Collaborations With Local Engineering 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 engineering 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 involve youth of all grade levels creating 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 to think about the dangers of global warming and to take action and 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 engineering and 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.

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. See the suggested backdating calendar.

Global Warming Education Event Backdating Calendar

90 Days Before Event	Conduct an event planning meeting with all members of the collaboration. 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

Any time 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 multi-day 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.

Mini Activities

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

I. 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

Procedure:

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

A temperature increase of 10 degrees 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.

II. Robotics Competition Weekend

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

Equipment Needed: Robotics building kit

Procedure:

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 weekend competition.

III. Archaeological Dig

The following information contains different archaeology-related programs and organizations you can collaborate with to conduct archaeological 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

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."

IV. Facility Tours

Facility tours offer a great learning experience about how things are manufactured, materials are produced or processed, or services are delivered. The following are examples of facility tours that offer great learning experiences for a post activity.

A. Manufacturing Facilities

Touring any type of manufacturing plant can be a great activity. Have the host explain:

1. Where the raw materials are obtained and how they arrive at the plant.
2. The steps of the manufacturing processes at the plant.
3. The role engineering plays in the manufacturing process.
4. How production is scheduled.
5. How quality is obtained and assured.
6. Special safety hazards (both personal and environmental) of the manufacturing system and how they are met.
7. How the product is packaged for shipping.
8. How the product is sold in the market.

B. Process Facilities

These types of facilities include:

1. Water and wastewater treatment plants.
2. Chemical, paint, oil, and gas plants.
3. Agriculture and food processing plants.
4. Electric generation plants.
5. Waste disposal facilities such as trash incinerators, transfer stations, landfills, or materials handlers.

C. Service Facilities

1. On-line maintenance facility
2. Military base heavy equipment facility or airbase airplane maintenance
3. Major shipping and receiving centers for trucks, trains, barges, ships, or airplanes. For example, the post office, air express terminals, automobile transfers from ships, etc.

D. Government Facilities

1. Military installations
2. FAA, NASA, and other aerospace facilities
3. Department of Energy national laboratories and nuclear production, storage, and disposal sites
4. Research and testing laboratories such as those at the National Institute of Science and Technology

5. Scientific observatories
6. Facilities managed by the Corps of Engineers

E. Educational Tours

1. Planetariums, aquariums, or space museums
2. Universities, colleges of engineering, research and testing laboratories
3. Science museums

F. Construction Sites

1. Road construction
2. Port construction
3. Building construction
4. Airport construction
5. Bridge construction
6. Home/commercial/industrial plant construction

V. Paper Rockets

In this activity, Explorers construct small flying rockets out of paper and propel them by blowing air through a straw attached to the rocket.

Objective: To demonstrate the importance of using control systems, such as fins, to stabilize rockets in flight.

Equipment Needed:

- Scrap bond paper
- Cellophane tape
- Scissors
- Sharpened fat pencil
- Milkshake straw (slightly thinner than pencil)

Procedure:

1. Cut a narrow rectangular strip of paper about 13 centimeters long and roll it tightly around the fat pencil. Tape the cylinder and remove it from the pencil.
2. Cut points into one end of the cylinder to make a cone and slip it back onto the pencil.
3. Slide the cone end onto the pencil tip. Squeeze and tape it together to seal the end and form a nose cone (the pencil point provides support for taping). An alternative is just to fold over one end of the tube and seal it with tape.
4. Remove the cylinder from the pencil and gently blow into the open end to check for leaks. If air escapes easily, use more tape to seal the leaks.
5. Cut out two sets of fins using the pattern on the drawing and fold according to the instructions. Tape the fins near the open end of the cylinder. The tabs make taping easy.

Flying the Paper Rocket

Slip the straw into the rocket's opening. Point the rocket in a safe direction and blow sharply through the straw. The rocket will shoot away. **Caution: Be careful not to aim the rocket toward anyone.**

Discussion

The paper rocket activity demonstrates how rockets fly through the atmosphere. A rocket with no fins is much more difficult to control than a rocket with fins. The placement and size of the fins is critical to achieving adequate stability while not adding too much weight.

Teaching Notes and Questions

- Try flying a paper rocket with the fins placed on the front end of the cylinder. Also try attaching delta-shaped wings to achieve gliding flight.
- How small can the fins be made and still stabilize the rocket? How many fins are required?
- What will happen to the rocket if the lower tips of the fins are bent pinwheel fashion?

- Test different paper rockets to see which will travel higher or farther. Investigate the designs of the rockets that travel the farthest and shortest distances. What makes one rocket perform better than another? (Do not forget to examine the weight of each rocket. Rockets made with extra tape and larger fins weigh more.)
- Are rocket fins necessary in outer space?

VI. Rocket Car

In this activity, Explorers construct a balloon-powered rocket car that rolls across the floor because air is forced to escape through a plastic straw.

Objective: Newton's Third Law of Motion is demonstrated with escaping air as the action force.

Equipment Needed:

- Four pins
- Styrofoam meat tray
- Cellophane tape
- Flexible straw
- Scissors
- Drawing compass
- Marker pen
- Small party balloon
- Ruler

Procedure:

1. Using the ruler, marker, and drawing compass, draw a rectangle (about 7.5 by 18 centimeters) and four circles (each 7.5 centimeters in diameter) on the flat surface of the meat tray. Cut out each piece.
2. Inflate the balloon a few times to stretch it. Slip the nozzle over the end of the flexible straw nearest the bend. Secure the nozzle to the straw with tape and seal it tight so that the balloon can be inflated by blowing through the straw.
3. Tape the straw to the car as shown in the picture.
4. Push one pin into the center of each circle and then into the edge of the rectangle as shown in the picture. The pins become axles for the wheels. Do not push the pins in snugly because the wheels have to rotate freely. It is OK if the wheels wobble.
5. Inflate the balloon and pinch the straw to hold in the air. Set the car on a smooth surface and release the straw.

Discussion

The rocket car is propelled along the floor according to the principle stated in Isaac Newton's Third Law of Motion. The escaping air is the action, and the movement of the car in the opposite direction is the reaction. The car's wheels reduce friction and provide some stability to the car's motion. A well-designed and constructed car will travel several meters in a straight line across a smooth floor.

Teaching Notes and Questions

- Encourage Explorers to design their own cars. Cars can be made long or short, wide or narrow, or even trapezoidal. Wheels can be large or small. If Styrofoam coffee cups are available, the bottoms can be cut off and used as wheels.
- Hold car distance trials on the floor. Have Explorers measure and chart the distance each car travels. Average multiple runs for individual cars to identify the best cars. What makes one car design perform better than another? Are large wheels better than small wheels?

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Career Achievement Award Requirements

Explorers can earn a Career Achievement Award in one or all of the 12 career clusters. To earn a Career Achievement Award, the candidate must provide *50 hours of community service* and complete *any nine career achievements.* The Explorer post certifies that each Explorer has satisfactorily performed 50 hours of community service and verifies that each candidate has completed at least nine achievements within the career cluster.

Engineering Achievements

Do nine of the following:

1. a. Build a switch magic project.

   b. Display and demonstrate your project at a post meeting or in another public place.

2. a. Build a small Jacob's ladder (high-voltage arc).

   b. Demonstrate your project at a post meeting, community group, class, or other group meeting.

3. a. Learn soldering techniques by building a self-contained, solid-state signal injector that will enable you or another person to troubleshoot the simple way.

   b. Demonstrate what you have learned about soldering to your post, another post, a community group, or another group.

4. Build an ohmmeter that will show a person's grip strength and display it.

5. a. Build a model of a space station.

   OR

   b. Make a tabletop display of a concept for a space station. Show the display at your post or another group meeting.

6. Tour a manufacturer of soft and/or hard goods such as automobiles, radios, TVs, paint, oil and gas, batteries, etc. Share what you see and/or learn with other Explorers or students.

7. Learn how to construct electronic dice in which, when the "roll" button is depressed, all 14 LEDs go on, and then there is a "roll-down" similar to the effect obtained when regular dice are thrown.

8. Learn and teach other Explorers, students, or youth groups how to construct a model bridge out of basswood and glue.

9. a. Participate in or organize and lead a contest to construct a paper airplane and test it in three areas: weight, time aloft, and aesthetic design.

   OR

   b. Participate in or organize and lead a contest to build vehicles propelled by a mouse trap spring or a rubber band.

10. Design a playground set, bench area, garden trail, pedestrian bridge, or pavilion for a park, school, retirement home, etc. If possible, build your project.
11. Tour a construction site with an engineer. Discuss various jobs done on the site. What are the steps in the construction process? What role did a civil engineer play? Other engineers? Ask about the inspection process.
12. Explain the work of six of the following types of engineers: civil, mechanical, chemical, electrical, industrial, agricultural, aeronautical, mining, astronomical, metallurgical, nuclear, biomedical, ceramic, and petroleum.
13. With your Advisor's or teacher's advice, select a subject to research in engineering. Research publications and interview experts. Tell what you learned and where you got the facts.
14. Visit five Web sites to discover three new trends in computers or computer programming, or find out about five engineering professional organizations. Write about the three new trends or the five organizations in a two-page report for your adult leader.
15. Obtain information on five colleges or universities that offer engineering as a major course of study. Prepare a presentation for your post that includes (a) what engineering programs are offered, (b) what the admission requirements are, and (c) what the graduation requirements are for a bachelor's degree. Have the college mail information to you so you can share it with other Explorers, high school students, or another group.
16. Attend a regional or national engineering conference as a staff member or participant.

Resources

Exploring Youth Leader Guide, 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.

ENGINEERING/TECHNOLOGY CAREER ACHIEVEMENT AWARD WORK SHEET

Name _____

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

Do nine of the following:

1a. Build a switch magic project.

1b. Display and demonstrate your project at a post meeting or in another public place.

Completed _____

2a. Build a small Jacob's ladder (high-voltage arc).

2b. Demonstrate your project at a post meeting, community group, class, or other group meeting.

Completed _____

3a. Learn soldering techniques by building a self-contained, solid-state signal injector that will enable you or another person to troubleshoot the simple way.

3b. Demonstrate what you have learned about soldering to your post, another post, a community group, or another group.

Completed _____

4. Build an ohmmeter that will show a person's grip strength and display it.

Completed _____

5a. Build a model of a space station.

OR

5b. Make a tabletop display of a concept for a space station. Show the display at your post or another group meeting.

Completed _____

6. Tour a manufacturer of soft and/or hard goods such as automobiles, radios, TVs, paint, oil and gas, batteries, etc. Share what you see and/or learn with other Explorers or students.

Completed _____

7. Learn how to construct electronic dice in which, when the "roll" button is depressed, all 14 LEDs go on, and then there is a "roll-down" similar to the effect obtained when regular dice are thrown.

Completed _____

8. Learn and teach other Explorers, students, or youth groups how to construct a model bridge out of basswood and glue.

Completed _____

9a. Participate in or organize and lead a contest to construct a paper airplane and test it in three areas: weight, time aloft, and aesthetic design.

OR

9b. Participate in or organize and lead a contest to build vehicles propelled by a mouse trap spring or a rubber band.

Completed _____

10. Design a playground set, bench area, garden trail, pedestrian bridge, or pavilion for a park, school, retirement home, etc. If possible, build your project.

Completed _____

11. Tour a construction site with an engineer. Discuss various jobs done on the site. What are the steps in the construction process? What role did a civil engineer play? Other engineers? Ask about the inspection process.

Completed _____

12. Explain the work of six of the following types of engineers: civil, mechanical, chemical, electrical, industrial, agricultural, aeronautical, mining, astronomical, metallurgical, nuclear, biomedical, ceramic, and petroleum.

Completed _____

13. With your Advisor's or teacher's advice, select a subject to research in engineering. Research publications and interview experts. Tell what you learned and where you got the facts.

Completed _____

14. Visit five Web sites to discover three new trends in computers or computer programming, or find out about five engineering professional organizations. Write about the three new trends or the five organizations in a two-page report for your adult leader.

Completed _____

15. Obtain information on five colleges or universities that offer engineering as a major course of study. Prepare a presentation for your post that includes (a) what engineering programs are offered, (b) what the admission requirements are, and (c) what the graduation requirements are for a bachelor's degree. Have the college mail information to you so you can share it with other Explorers, high school students, or another group.

Completed _____

16. Attend a regional or national engineering conference as a staff member or participant.

Completed _____

Resources

Exploring Youth Leader Guide and *Exploring Adult Leader Guide* 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 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

Explorers can earn any Career Achievement Award in one or all of the 12 career clusters. To earn a Career Achievement Award, the candidate must provide *50 hours of community service* and complete *any nine career achievements.* The Explorer post Advisor certifies that each Explorer has satisfactorily performed 50 hours of community service and verifies that each candidate has completed at least nine achievements within the career cluster.

ENGINEERING CAREER 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 _____

Name _____

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		
Movies/videos		
Music		

	Have Skill	Have Resources
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 and recreation activities _____

_____

_____

Other hobbies _____

_____

_____

Other ideas _____

_____

_____

Engineering/Technology "Sample" Career-Related Activities Development Worksheet

	Career-Related Activities	Organization Has Resources	Organization Consultant
	Engineering Skill	**YES/NO**	**Who will lead this skill?**
1.	Build a switch magic project		
2.	Build a Jacob's ladder (high-voltage arc)		
3.	Learn soldering techniques		
4.	Build an ohmmeter		
5.	Visit a manufacturer of soft and hard goods		
6.	Construct electronic dice		
7.	Learn model-bridge building		
8.	Learn paper airplane design		
9.	Build propelled vehicles (rubber band-, spring-, or mouse trap-powered)		
10.	Design a playground set for children		
11.	Tour a construction site with a civil engineer		
12.	Know the roles of six types of engineers		
13.	Visit the Web sites of engineering organizations		
14.	Obtain information on colleges and universities that offer engineering courses		
15.	Attend an engineering conference		
16.	Participate in engineering science projects:		
17.	Electronic wheel of fortune		
18.	Nerve tester		
19.	What IZ it		
20.	Balloon staging		

	Career Opportunities	Organization Has Resources	Organization Consultant
	Engineering Skill	**YES/NO**	**Who will lead this skill?**
21.	Paper rockets		
22.	Rocket car		
23.	Participate in engineering competitions:		
24.	Egg drop		
25.	Bridge building		
26.	Windmill windup		
27.	Hand-powered winch		
28.	Lord Kelvin's water drop		
29.	Missile launch		
30.	Learn NSPE's Code of Ethics		
31.	Participate in National Engineers Week		
32.	Serve as a mentor for a Mathcounts program		
33.	Participate in a Super Activity:		
34.	Air Force satellite facility		
35.	Nat. Air and Space Museum (Washington, D.C.)		
36.	Los Alamos Nat. Laboratory		
37.	NASA at Kennedy, Johnson, etc.		
38.	Using the engineering design method, discuss:		
39.	Public buildings made accessible to disabled		
40.	Automobile safety		
41.	Use of fiber optics		
42.	Structural design in reference to 9/11		
43.	Brain teasers: questions		
44.	Six ways to produce electricity		
45.	Six ways to move a vehicle without an engine		
46.	Six ways or more to light a fire		
47.	Six ways to use the jet stream		
48.	Six ways to avoid spilling coffee while driving		
49.	Eight reasons not to explore Mars		
50.	(For each requested answer)		

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

	Career-Related Activity	Organization Has Resources	Organization Consultant
		YES/NO	Who will teach this skill?
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

ENGINEERING/TECHNOLOGY "SAMPLE" OF 12-MONTH COMPLETED POST PROGRAM CALENDAR

	1st Mtg. Date	Career Opportunities 1st Meeting	Adult Consultant Youth Chair	2nd Mtg. Date	Career Opportunities 2nd Meeting	Adult Consultant Youth Chair	Monthly Planning Meeting Date	3rd Weekend Monthly Post Activity	Post Activity Youth Chair	Weekend Council Activity
SEPT	**2nd Wed.**	Fall open house	Hal Mark	**4th Wed.**	Elect officers and plan post activity program	Bill Martha	**1st Wed.**		Martha	Post officers training
OCT	**2nd Wed.**	CA Achievement Award	James Sean	**4th Wed.**	Construction site visit	Cliff Cheryl	**1st Wed.**	Planning for post spring break ski trip/ fund-raising	Cheryl	Exploring camping weekend
NOV	**2nd Wed.**	Build a Jacob's ladder and HV arc	Frank Tom	**4th Wed.**	Learn model-bridge building computer software	Peggy Jimmy	**1st Wed.**	Council food drive	Jimmy	Quarterly Exploring conference date
DEC	**2nd Wed.**	Character education activities	Crosby Judy	**4th Wed.**	Straw tower competition (Web site)	Marty Mariann	**1st Wed.**	Planning for summer super activity	Mariann	
JAN	**2nd Wed.**	Build a propelled vehicle	Laun Mike	**4th Wed.**	Visit an airport, pilot, or traffic controller	Jim Natalie	**1st Wed.**	Explorer blood drive	Natalie	
FEB	**2nd Wed.**	Paper airplane design and competition	Matthew Danny	**4th Wed.**	Build a switch magic project	John Cindy	**1st Wed.**	Post ski trip	Cindy	Quarterly Exploring conference date
MAR	**2nd Wed.**	Spring break		**4th Wed.**	Visit engineering Web sites	Carey Ann	**1st Wed.**	Fund-raising	Ann	
APR	**2nd Wed.**	Visit a commercial product manufacturer	Cliff Maya	**4th Wed.**	Participate in engineering competitions	Debbie Murray	**1st Wed.**		Murray	Annual Exploring banquet
MAY	**2nd Wed.**	Complete Career Achievement Award	Ashley Amy	**4th Wed.**	Design a playground set for children	Rayna David	**1st Wed.**	Post family outing	David	Quarterly Exploring conference date
JUNE JULY	**2nd Wed.**	Planning for super activity	Matthew Monica	**4th Wed.**			**1st Wed.**	Post super activity	Hazel	Attend an engineering academy
AUG	**2nd Wed.**			**4th Wed.**			**1st Wed.**	Plans for fall firstnighter	Stephanie	Our Town At Night Activity

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

ENGINEERING/TECHNOLOGY CAREERS EXPLORING PROGRAM MATCH SHEET

	Results of Youth Activity Interest Survey	Results of Adult Resource Survey	Tentative Date of Activity	Possible Locations	Potential Youth Chair and Adult Consultant	Additional Notes
Bowling						
Camping						
Career clinic						
College planning						
Community cleanup						
Computers						
Conservation project						
Cycling						
Dance						
Field sports						
First aid						
Fishing						
Horseback riding						
Ice skating						
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						
Other sports: _____						
Other hobbies: _____						
Other ideas: _____						

(see Match Sheet Instructions on page 37)

Instructions for Using Program Match Sheet:

1. Complete the Youth Activity Interest Survey and put results in the correct row on the program match work sheet.
   - Put a check mark or the total number of responses for that item.
2. Review the Adult Resource Survey and put results in correct row on the program match work sheet.
   - Put a check mark or the total number of responses for that item.
3. Add other results, those written in and especially ones from brainstorming with youth at firstnighter/open house.
4. Look for matches between first two columns—youth activity interest and adult resource survey.
5. Decide on activities that post will organize.
   - Decision could be by vote or consensus of youth leadership.
6. Select suggested dates for each activity.
   - Put on post calendar for distribution to Explorers.
7. Recruit and assign youth activity chair and adults consultant for each activity that will be on calendar.
8. Post vice president for program follows up with youth activity chair and reports at post monthly planning meeting.

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**

   Have youth who are interested in joining the post complete the Exploring Youth Application. 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' application to the local Learning for Life office. 3. Existing posts should use youth officers during the agenda.

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 at the bottom 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

_____

_____

_____

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

Activity Chairman: A youth who volunteers or is assigned to coordinate a post activity with assistance from an adult post participant.

Activity Planner: This form is used to plan all aspects of a post activity from beginning to end.

Advisor: The adult leader of a post; selected by the participating organization.

Adolescent Development: This involves experimentation, movement from dependence to interdependence, social relationships, physiological changes/ sexual maturity, and re-evaluation of values.

Adult Application: Application completed by all Exploring adults. Go to *www.learningforlife.org*.

Adult Leader Fast Start Training: Training for post adult leaders provided by volunteer or professional staff. Go to *www.learningforlife.org.*

Adult Leaders' Guide: This guide is for post adult participants. Guide can be found on *www.learningforlife.org*.

Adult Post Leaders: More information about adult post leaders can be found on the Learning for Life Web site at *www.learningforlife.org*. Adult leaders of a post are:

- Post committee chairperson: Adult selected to lead adult post committee.
- Post Advisor: Adult selected by head of organization to advise youth officers in the post.
- Associate Advisor: Additional adult selected to support post officers.
- Post committee member: Adult selected to serve on post committee by chairperson.
- Post adult resource consultants: Knowledgeable adult recruited to provide program guidance for extracurricular activities.

Adult Resource Survey: Survey of adults' hobbies, talents, and interests to enhance the post program beyond career-related activities.

Career Achievement Award: Youth award application found on *www.mybsa.org;* it can be earned in all 12 career clusters.

Career-Related Activities Work Sheet: Step two of the five-step plan. Adults in the post list career-related activities on the work sheet.

Consultant: A person whose special skills or talents are needed for a post activity or project.

Cultivation Event: Commonly known as an Impact Luncheon, it's a sales technique where organizations are recruited to sponsor posts.

Explorer Activity Interest Survey: This form should be completed by Explorer youth to determine the types of extracurricular activities they are interested in pursuing.

Exploring Experience: National independent research study (No. 99-475) that shows the youth development benefits of the Exploring program.

Explorer Fee: Fee paid by post participants each year ($10).

Firstnighter Meeting: Step three of the five-step plan; it's the first time post adult committee members meet with youth. During this meeting, youth register to participate in the Exploring program.

Firstnighter Letter of Invitation: Letter from head of organization to prospective youth participants.

Firstnighter Video: Video shown during the Firstnighter Meeting (No. 99-442) for recruitment of youth.

Five Areas of Program Emphasis: Exploring focuses on five critical areas: career opportunities, life skills, citizenship, character education, and leadership. In order to achieve a balanced program, these five areas are essential in developing a broad spectrum of activities and events for posts.

Leadership Development Guidebook for Teens: Contact your local Learning for Life/Exploring executive regarding this teen leadership book.

Memorandum of Understanding: Agreement between the organization and local council.

Participating Organization: Organizations that sponsor Exploring posts.

Post: Adults and youth participants in Exploring.

Post Advisor: Adult selected by organization head to advise post youth officers in post program.

Post Advisors Fast Start Video: Video for the training of post adult advisors (No. AV-09V030). Order from National Supply Group.

Post Activities Development Meeting Agenda: Post meeting agenda found in the *Youth Leaders Guide* and *Adult Leaders Guide*. Go to *www.learningforlife.org*.

Post Committee Chairperson: Adult selected to lead adult post committee.

Post Committee Member: Adult selected to work on post committee by chairperson.

Post Program Development Calendar: Developed by the post adult committee, post youth officers, and all post youth participants.

Post Activities Development Meeting: Step four of the five-step plan. During this meeting, the Post Program Development Calendar is developed using the Career-Related Activities Work Sheet, the Adult Resource Survey, and the Explorer Activity Interest Survey.

Post Officers' Fast Start Training: Training designed for post officers to guide them into leading post programs.

Post Program Guides: These guides are available for each of the 12 Exploring career clusters (download from *www.mybsa.org*). They provide career-specific programming ideas for adult advisors.

Post Youth Officers: Information concerning post youth officers can be found in the *Youth Leader Guide* on *www.learningforlife.org*. The positions are:

- Post president
- Vice president of administration
- Vice president of program
- Secretary
- Treasurer

Recognitions: Information regarding Exploring recognitions and scholarships can be found on *www.learningforlife.org.*

Reflection: Having youth look back at experiences and activities once they are over in order to understand what happened. They use this understanding in looking forward to the next action and new experience.

Student Career Interest Survey: Survey completed at local schools to determine youth career interests. Order No. 34440 from National Supply Group.

Youth Application: Completed by all youth Explorers. Order No. 28-309 from National Supply Group.

Youth Leaders' Guide: Guide designed for youth leaders and post officers to help with post programming. The guide can be found on the Learning for Life Web site at *www.learningforlife.org*.

Youth Protection Guidelines: Safety First Guidelines are designed to help ensure a safe program that is conducted following approved guidelines. The guide can be found on the Learning for Life Web site at *www.learningforlife.org*.

Youth Protection Training: Training for adults can be found on the Learning for Life Web site at *www.learningforlife.org.*