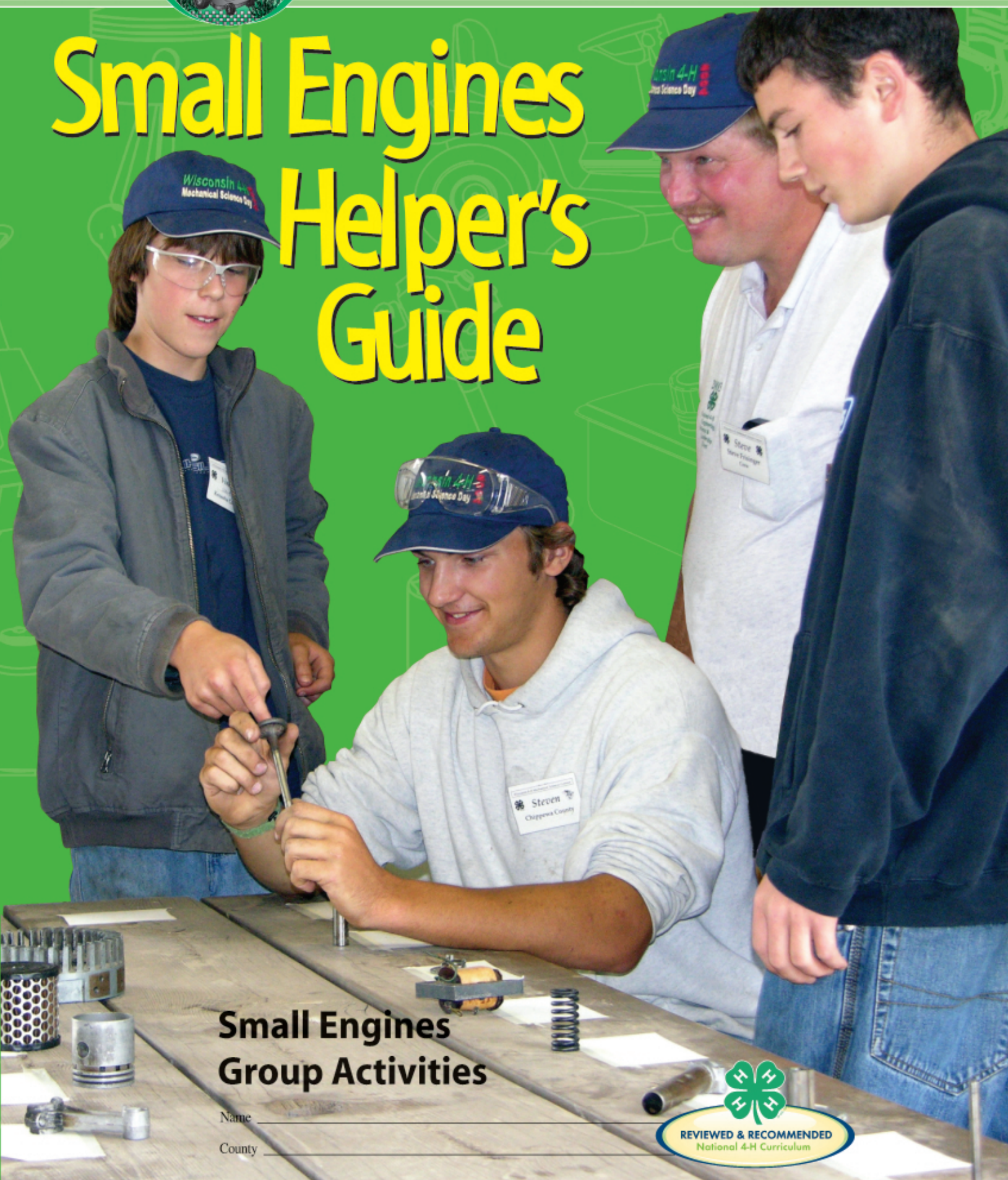




# Small Engines Helper's Guide



## Small Engines Group Activities

Name \_\_\_\_\_

County \_\_\_\_\_





## Note to the Project Helper

### Welcome Helpers

**W**elcome to Start Your Engines! This curriculum focuses on small engines and their applications. It is an interactive, experiential curriculum aimed at youth from grade three through high school.

As a helper, you are a key to positive growth in youth. According to recent research, each child needs positive relationships with caring adults. This curriculum provides opportunities for this relationship while teaching youth about small engines.

There is something for every youngster in this curriculum. Start Your Engines! features a life skill and small engines project skill in each learn-by-doing activity. Following is an overview of each of the three youth activity guides in Start Your Engines!



Explore more at

[www.4-hcurriculum.org](http://www.4-hcurriculum.org)

National 4-H Curriculum

### Start Your Engine Series (4-H)



#### Level 1 Youth Guide: *Crank It Up!*

(BU-08186)

This youth guide focuses on basic small engine knowledge. Youth will study external engine parts, discover tools of the trade, and learn about the concepts behind what makes small engines work. They will learn about all of the uses of small engines and safety issues regarding small engines.

#### Level 2 Youth Guide: *Warm It Up!*

(BU-08187)

This youth guide gets deeper into small engine knowledge and application. Youth begin studying the internal parts of engines and more advanced tools. They learn about engine size, compression ratios, seasoning their engines and safety issues. Youth also start to learn about all of the occupational possibilities by interviewing someone in the field and learning about starting their own businesses.

#### Level 3 Youth Guide: *Tune It Up!*

(BU-08188)

At this stage youth are really getting to the nuts and bolts of small engines, literally. Much of the third youth guide involves youth tearing down and rebuilding an engine. They learn about using diagnostic tools, rules and regulations about using small engine machines and selecting a replacement engine.

### Acknowledgments

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*For more on small engines, look for these other guides in this set.*



4-H BU-08186

## Level 1 - Crank It Up!

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Crank It Up!  
Time for Tools  
Parts, Parts, Everywhere Parts!  
A Slippery Subject  
Suck It Up!  
Cool It!  
Spark It Up!  
Let It Breathe!

**Chapter 2: Working Well with Small Engines**  
Keep It Labeled!  
Closet Clues! What to Wear?  
Lawn Ranger

**Chapter 3: Making Small Engines Work for You**  
Learn to Earn  
Wise Buys



4-H BU-08187

## Level 2 - Warm It Up!

**Chapter 1: How Engines Work**  
What's Your Type?  
Name That Part!  
Which Tool'll Do It?  
Sizing Up!  
Under Pressure  
Mixing It Up!  
Tearing It Down!

**Chapter 2: Working Well with Small Engines**  
Seasoning Your Engine  
Feel the Power!  
Riding Safety  
Make the Cut!

**Chapter 3: Making Small Engines Work for You**  
Information Overload  
Business Time?



4-H BU-08188

## Level 3 - Tune It Up!

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Coming Apart  
Electrical System –  
Coming Together  
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Engine Base – Coming Together

**Chapter 2: Working Well with Small Engines**  
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## Using the Experiential Learning Model

Hands on involvement or learning by doing is a most effective method for learning. *Start Your Engines!* uses this model, known as the Experiential Learning Model. The five learning steps in the process are specific and sequential. Experiential

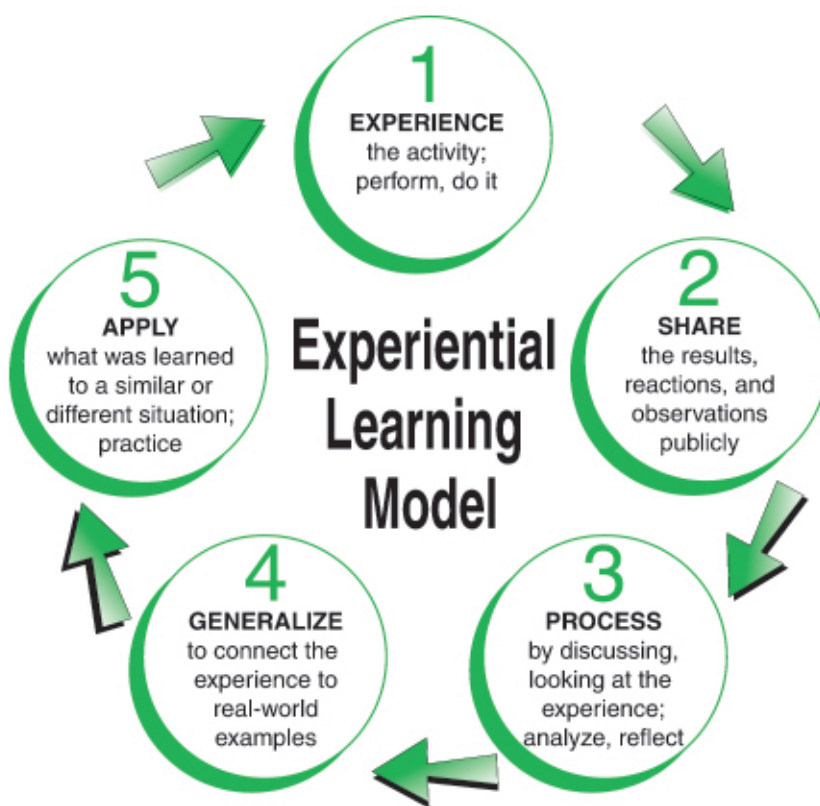
learning engages learners actively, encouraging them to think more, work harder, and ultimately learn more thoroughly than with other teaching and learning methods.

Experiential learning can be used successfully in many teaching and learning settings. Before selecting a delivery method, consider your youth participants and overall program goals.

### Here are some Possible Learning Environments

- Series of youth project meetings
- Camp program
- After school program
- Vocational small engines classes
- Curriculum for youth while parents are involved in parenting classes
- Special community event to celebrate youth.

### Experiential Learning Model



Pfeiffer, J.W., & Jones, J.E., "Reference Guide to Handbooks and Annuals" © 1983 John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc.

"Experiential learning takes place when a person is involved in an activity, looks back and evaluates it, determines what was useful or important to remember, and uses this information to perform another activity."

— John Dewey, Educator



## Learning Skills for Life

In Start Your Engines! youth will develop several important life skills through their involvement in fun and challenging small engines-related, learn-by-doing experiences.

### A life skill enables youth to

- be self-directed and productive
- recognize and respond to significant life events in a changing world

- lead satisfying lives and contribute to an interdependent society
- develop an appreciation of the differences in the customs and cultures of people.

One primary life skill has been identified for each activity in Start Your Engines! For example, in Level 1, Parts Are Parts, focuses on locating and using resources. Following is a grid showing which primary life or science skill has been identified for each activity.

Life and Science Skills	Level 1 – <i>Crank It Up!</i>	Level 2 – <i>Warm It Up!</i>	Level 3 – <i>Tune It Up!</i>	Helper's Guide
1. Classifying		What's Your Type?		
2. Communication	Learn to Earn		Air and Fuel System – Coming Together Electrical System – Coming Together Engine Base – Coming Together	Small Engines Quiz Bowl Public Performance
3. Comparing and measuring	A Slippery Subject Suck It Up! Cool It!	Sizing Up! Under Pressure! Mixing It Up! Feel the Power! Make the Cut!		
4. Decision making	Lawn Ranger Wise Buys	Information Overload Business Time?	Comparing and Purchasing Starting Your Own Business	Small Engines Bingo Parts I.D
5. Locating and using resources	Parts Are Parts Time for Tools Parts, Parts, Everywhere Parts Spark It Up! Let It Breathe!	Name That Part! Which Tool'll Do It?	Know the Trends Rules and Regulations	
6. Marketable skills		Tearing It Down!	Air and Fuel System – Coming Apart Electrical System – Coming Apart Engine Base – Coming Apart Keep It Sharp! Selecting an Engine	
7. Planning and organizing	Crank It Up!	Seasoning Your Engine!		Spark Up Tour Time To Serve or Not to Serve?
8. Problem solving			Motor Music Advanced Tools	Skillathon Troubleshooting
9. Safety	Keep It Labeled! Closet Clues! What to Wear?	Riding Safety		

# Education Standards

Below is a listing of activities and how they match up to the Education Standards.

Education Standard	Level 1 – <i>Crank It Up!</i>	Level 2 – <i>Warm It Up!</i>	Level 3 – <i>Tune It Up!</i>	Helper's Guide
NL-ENG.K-12.7 Evaluating Data	Learn to Earn Wise Buys	Business Time?	Selecting an Engine Comparing and Purchasing Starting Your Own Business	Small Engine Quiz Bowl To Serve or Not to Serve Public Performance Parts ID Troubleshooting
NL-ENG.K-12.8 – Developing Research Skills		Name That Part! Which Tool'll Do It? Tearing It Down! Seasoning Your Engine Information Overload	Coming Together – Air and Fuel Systems Coming Together – Electrical Systems Coming Together – Engine Base	Spark Up Group Activities Tour Time Skullathon Small Engine Bingo
NS.K-4.1 – Science as Inquiry	Parts Are Parts Time for Tools Parts, Parts... Everywhere Parts Cool It!			
NS.K-4.2 – Physical Science	Crank It Up! A Slippery Subject Suck It Up!			
NS.K-4.5 – Science and Technology	Spark It Up!			
NS.K-4.6 – Personal and Social	Let It Breathe! Keep It Labeled! Closet Clues! What to Wear			
NS.5-8.1 – Science as Inquiry		What's Your Type? Make the Cut!		
NS.5-8.2 – Physical Science		Sizing Up! Under Pressure! Feel the Power! Riding Safety		
NS.5-8.5 – Science and Technology		Mixing It Up!		
NS.9-12.1 – Science as Inquiry			Motor Music	
NS.9-12.2 – Physical Science			Advanced Tools Coming Apart – Air and Fuel Systems Coming Apart – Electrical Systems Coming Apart – Engine Base Keep It Sharp!	
NS.9-12.6 – Personal and Social Perspective			Know the Trends Rules and Regulations	
NT.K-12.1 – Basic Operations and Concepts	Lawn Ranger			





## Developmental Characteristics of Youth

**R**emember that each youth is unique, even though growth and development proceed in predictable stages. For maximum learning try to match the educational experience with the stage of development. Here is a set of developmental characteristics for youth in three stages of development, followed by some teaching tips on how to work with them.

### Grades 3–5

<i>Characteristics</i>	<i>Teaching Tips</i>
Learn best when physically active.	Allow youth to participate in activities where they can use physical energy.
Have a special attachment to older youth.	Allow youth to choose an older youth to act as their helper and role model.
Are easily motivated.	Use encouragement to keep them motivated.
Reading becomes an individual experience.	Allow time for youth to read on their own and think of activities before working with others.
Attention span is about 45 minutes.	Use varied activities to keep them interested.
Acceptance by peer group is important.	Use the peer group to recognize good work, e.g., applaud completed activities and avoid put-downs.
Interests expand from home, to neighborhood, to community.	Talk to youth about their friends and neighbors and what goes on in their community. Involve them in community service.
Enjoy both cooperation and competition.	Plan activities so that sometimes youth work together, sometimes compete with each other.
Show independence by seeking individual attention and sometimes disrupting the group.	Involve youth in selecting activities they would like. Give individual attention as needed.
Feelings of competence enhance self-concept.	Provide activities which will let youth feel good about themselves and succeed. Recognize them for their accomplishments.
Show loyalty to members of their own sex and antagonism toward those of the opposite sex.	Involve youth in choosing partners.

## Developmental Characteristics of Youth

### Grades 6–8

<i>Characteristics</i>	<i>Teaching Tips</i>
Can take responsibility in planning and evaluating their own work.	Give youth responsibility for group activities, including planning, implementing and evaluating.
Can plan their own social and recreational activity.	Provide opportunities for youth to work together. Form committees to plan recreational and social activities.
Can discuss current events, international affairs, and social issues with some help.	Use discussion, activities, and games that encourage awareness of current events and issues.
Want to make decisions but still depend on adult guidelines.	Establish guidelines that give parameters for youth to follow.
Gain skills in social relations with peers and adults.	Provide activities which foster social interaction with peers and adults.
Peer pressure mounts, first from same sex, then from opposite sex.	Use peer pressure to influence positive behavior. Have group give encouragement to individuals.
Can be quite self-conscious.	Avoid asking youth to share their individual work until they feel more comfortable with the group.
Strong emotional attachment to older youth and adults.	Encourage youth to participate in activities with older youth and adults.
Choices are often unrealistic.	Assist youth in making realistic choices. Review their plans, discuss alternatives, and help them weigh options before making decisions.

### Grades 9–12

<i>Characteristics</i>	<i>Teaching Tips</i>
Personal philosophy begins to emerge.	Use activities where youth search for experiences which will allow them to identify their own philosophies.
Enjoy discussing world situations as well as personal activities.	Encourage discussion of events and feelings.
Abstract thinking and problem solving reach a higher level.	Put youth into real-life problem solving situations.
Strong desire for status in peer group.	Develop a climate in which youth are encouraged and supported by peers.
High interest in social activity.	Encourage youth to plan and carry out their own social activities.
Need freedom from parental control to make decisions.	Help youth realize that their decisions have consequences.
Widespread feelings of inferiority and inadequacy.	Encourage and help youth see their positive worth.



### Helping Hints for *Start Your Engines!*

#### *Look for What's Right*

Seed the kernel of a good idea in everything that youth do. Ignore what does not work and lavish your effort and praise on what does. If a problem or concern persists, it may mean the instructions are not clear, the activity is inappropriate for the stage of development of the youth, or there is insufficient preparation for the activity. Look at the entire situation in your analysis. Work with the youth to correct the problem.

#### *Rules for Healthy Disagreements*

Working through disagreements together and teaching youth to work through their disagreements with each other through example will help provide a positive learning environment. Some suggestions for rules could include:

- Do not attack the person; talk honestly about what is bothering you.
- Begin to talk about what is bothering you a long time before you get really angry.
- If you or the other person is really angry, wait until you cool down.
- Try to be a good listener. Tell your side of the story, but also try hard to really listen to what the other person is saying.
- Stay "on track." Do not throw in topics that have nothing to do with what is being discussed.
- You do not always have to be right. If you are wrong, admit it.

#### *Setting the Environment for Learning*

It is important that youth are ready to learn. As helper, your role is to help set up the best environment for learning. Make sure each youth has sufficient supplies, ample space to work, and plenty of time to complete the activities. As a group comes together, allow time for social discussions before focusing on the activities planned. Include youth in the planning, preparation, and evaluation of the sessions. This will help your next session be even more successful.

#### *Guide the Questions, Not the Answers*

The Cool Your Engine and Race Ahead sections of each activity provide an opportunity for youth to reflect on their experiences and begin to apply them to new situations. When guiding the question and answer section, consider the following suggestions:

- Ask the questions as written. If you need to clarify a question in different words, still try to capture the focus of the question.
- Don't answer the questions for youth. Let them formulate their own answers.
- Avoid praising some answers and not praising others. This makes youth feel there are right and wrong answers and they might fail to please you if they answer incorrectly.
- Allow youth adequate time to think of and express their answers.
- Encourage youth to think deeply. Short or superficial responses can indicate they need to think in greater depth about a question. Use follow-up comments to help youth transfer their experiences into understanding. Examples include, "Can you talk more about that?" "Would you share an example of what you mean?" "Why do you think this is so?"

#### *Enabling Creativity*

Creativity is the key to new ideas. Foster creativity in the youth you work with in all ways. Use praise, listening, questioning, and giving the youth time to develop their own ideas and ways to express them.

#### *Building a Team*

Working together to reach a goal or complete a project is teamwork. Building a team takes time and some basic guidelines. Remind the group that each person is important and everyone's ideas have value. It is important that each person does his or her best and that everyone needs to be given a chance to contribute. Make sure every person gives praise and support to everyone else. Not all ideas contributed will work, but open communication and a positive, supportive environment can build a team that reaches its goals.

## Community Service

Community service is giving back to your community or neighborhood for the good of all. Each of us can identify needs in our community that would improve the quality of life for all who live there. Community service requires identifying that need, developing a plan to meet the need, carrying out the plan, and reflecting on how it all went. Community service not only builds our neighborhoods, but supports positive youth development for all youth and adults involved. It also creates a sense of pride, ownership, and a sense of belonging for the youth. Several community service projects are suggested in *Start Your Engines!* but rely on the youth you are working with to come up with the best community service projects for their neighborhoods. The very best ones allow youth to use what they have learned in the project. This aids to strengthen their learning.

## Encouraging Teens to Lead the Learning

*Start Your Engines!* is written for teens to accept the lead helper role for other youth. Teens are more than eager and ready to assume this teaching and mentoring role. To support their efforts and ensure success, follow these helpful hints:

- Provide proper training for teen leaders. Include information on how to work with kids, as well as subject matter. Supplement your information with library resources and references in this helper's guide.
- Include teens in recruiting youth to the program.
- Teens should be prepared for any meetings they are going to lead. Make sure they have all the necessary teaching and learning supplies. Allow time for individual and group role play of their teaching/leading roles, especially if this is their first experience as a helper.
- Involve teens in program evaluation. They should evaluate not only their youth learners, but also themselves as leaders.
- Take time to celebrate their efforts with a pizza or a swim party.

## Documenting Learning

Youth need to know the progress they are making as they learn. It is important to set goals for learning, make a plan to achieve the goals, and mark progress.

Each level in *Start Your Engines!* includes an Achievement Program through which youth see what they learn in each activity. As an activity is completed, youth may want to complete additional activities, pursue another area of interest, or set new learning goals.

Youth are encouraged to keep a record of their learning in portfolios. A portfolio can be a folder, box, scrapbook, record book, or other container that holds evidence of what has happened throughout the learning process. This includes sketches, notes, drafts, plans, new ideas, and final products. Photographs, videos, computer documentation, and audio tapes can also be used. Remind youth after each activity to place materials in their portfolios.

Periodically you may want the youth to check on their own progress and growth. Here is a sample Progress Report for your use.

	Yes	No	Sometimes
Do I follow directions?	_____	_____	_____
Do I work with others?	_____	_____	_____
Do I listen while others speak?	_____	_____	_____
Do I try to do my best?	_____	_____	_____
Do I use time wisely?	_____	_____	_____
Do I try new ideas?	_____	_____	_____

I do my very best work in \_\_\_\_\_

I need to try harder in \_\_\_\_\_

One thing I want to learn more about is \_\_\_\_\_

Finally, demonstrations and public displays, including junior or youth fairs, provide youth with the opportunity to show others what they have learned.



## Evaluating the Impact

**D**id the youth participating in the 4-H small engines activities change as a result of their experiences? Did they learn new skills? Do they now have more confidence with several important life skills such as communicating with others, presenting information, explaining concepts and speaking extemporaneously? The following evaluation has been prepared for your use.

The Success Indicator for each activity in each guide is listed. Simply note the youth's skill level **PRIOR** to the activity and **AFTER** the activity. Begin each indicator with "Youth have the ability to..."

- 1 - To a great extent
- 2 - Somewhat
- 3 - Not at all

### Overall Small Engine Curriculum Outcomes

Youth have the ability to...	Before	After		Before	After
Make good decisions	1 2 3	1 2 3	Describe how a small engine works	1 2 3	1 2 3
Communicate with others	1 2 3	1 2 3	Maintain a small engine	1 2 3	1 2 3
Plan and organize	1 2 3	1 2 3	Troubleshoot small engine problems	1 2 3	1 2 3
Solve problems	1 2 3	1 2 3	Tear down and rebuild a small engine	1 2 3	1 2 3
Accept responsibility	1 2 3	1 2 3	Investigate careers that involve engines	1 2 3	1 2 3

Level 1—Crank It Up!	Before	After
Name external parts of a lawnmower	1 2 3	1 2 3
Start an engine	1 2 3	1 2 3
Identify tools used for maintenance and repair of small engines	1 2 3	1 2 3
Identify parts of an engine	1 2 3	1 2 3
Identify different oil grades	1 2 3	1 2 3
Describe the importance of clean oil filters	1 2 3	1 2 3
Demonstrate how moving air cools	1 2 3	1 2 3
Demonstrate spark plug maintenance	1 2 3	1 2 3
Service an air cleaner on a small engine	1 2 3	1 2 3
Identify safety labels	1 2 3	1 2 3
Describe safe clothing to wear when working with small engines	1 2 3	1 2 3
Identify the job a machine does	1 2 3	1 2 3
Conduct an interview	1 2 3	1 2 3
Evaluate the best tool to purchase for the job	1 2 3	1 2 3

Level 2—Warm It Up!	Before	After
Classify types of engines	1 2 3	1 2 3
Identify internal small engine parts	1 2 3	1 2 3
Identify specialty tools	1 2 3	1 2 3
Calculate the size of an engine	1 2 3	1 2 3
Perform a compression test and compute compression ratio	1 2 3	1 2 3
Adjust a carburetor	1 2 3	1 2 3
Disassemble a small engine	1 2 3	1 2 3
Prepare a small engine for storage	1 2 3	1 2 3
Research the effects of changing sprockets	1 2 3	1 2 3
Determine the best direction to mow grass based on the center of gravity	1 2 3	1 2 3
Demonstrate how different cuts affect grass health	1 2 3	1 2 3
Select small engine parts wisely	1 2 3	1 2 3
Decide whether to start a small business	1 2 3	1 2 3

Level 3—Tune It Up!	Before	After
Match engine sounds to problems and adjustments	1 2 3	1 2 3
Identify and use diagnostic tools	1 2 3	1 2 3
Demonstrate how to tear down an engine's air and fuel system	1 2 3	1 2 3
Demonstrate how to assemble an engine's air and fuel system	1 2 3	1 2 3
Demonstrate how to tear down an engine's electrical system	1 2 3	1 2 3
Help someone assemble an engine's electrical system	1 2 3	1 2 3
Demonstrate how to tear down an engine base	1 2 3	1 2 3
Demonstrate how to assemble an engine base	1 2 3	1 2 3
Sharpen a lawnmower blade	1 2 3	1 2 3
Research information about small engine design	1 2 3	1 2 3
Research local small engine machine laws and regulations	1 2 3	1 2 3
Select a new small engine	1 2 3	1 2 3
Select the best machine for the money	1 2 3	1 2 3
Decide whether or not to start a small business	1 2 3	1 2 3

Helper's Guide	Before	After
Plan a one-year program of group small engine activities	1 2 3	1 2 3
Plan and conduct a small engine project tour	1 2 3	1 2 3
Plan, conduct, and participate in a small engine skillathon	1 2 3	1 2 3
Plan, conduct, and participate in a Small Engines Quiz Bowl	1 2 3	1 2 3
Select and perform a community service project related to small engines	1 2 3	1 2 3
Play Small Engines Bingo	1 2 3	1 2 3
Give a prepared speech or demonstration on small engines	1 2 3	1 2 3
Identify small engine parts	1 2 3	1 2 3
Diagnose engine problems	1 2 3	1 2 3

## Group Activities

# Spark Up Group Activities



<b>Life Skill:</b>	Planning and organizing
<b>Small Engine Skill:</b>	Planning small engine activities
<b>Education Standards:</b>	NL-ENG.K-12.8 – Developing Research Skills
<b>Success Indicator:</b>	Plan a one-year program of group small engine activities.
<b>Toolbox:</b>	Pencil, paper, flip chart or blackboard, small engine books, resource materials such as service manuals, magazines, and books

**Warm Up!** Small engine project meetings offer exciting settings for your group to develop important small engine project skills as well as life skills. Clubs and groups that plan their year's program together find that everyone stays more involved and interested each time the group meets. This activity has been designed to help your group make plans that everyone will want to participate in. You will find a list of possible small engine meeting topics at the end of this guide.

Before the meeting you may want to talk to the parents to see what they feel their children need and how your leadership can help. At the meeting, ask the youth and their parents to discuss what they would like to learn and do. Suggest looking through the small engine activity guides and the list of meeting topics for additional ideas. Your role is to create a situation in which the youth (and their parents) can develop small engine project skills and life skills. Helping a group plan a year's program or just one meeting takes a lot of patience and the ability to "sit on one's hands" and "hold one's tongue" while the members work together.

## Throttle Up!

Here is a technique for generating ideas and arriving at decisions. Have everyone review the topics on the appropriate small engine activity guides. Then ask each person to write ideas for group meetings and supportive activities (field trips, tours, community service projects, etc.). Sometimes youth can generate more ideas working together in groups of two or three with one person writing down the ideas. Allow five to 10 minutes of brainstorming.

Have each person share his or her ideas in a round robin. One person or group shares an idea, then the next, and so on until all ideas have been recorded on a blackboard or a large sheet of paper. List the ideas quickly and without discussion. After all ideas are listed, provide time for the person who made the suggestion to clarify or explain it. Others can add support, questions or criticism. After a short discussion move onto the next idea.



From all the ideas generated and discussed have each individual rate the items in order of preference on a separate sheet of paper. You may want to have them indicate their top five or 10 choices. If the top 10 choices are indicated, the top choice would receive 10 and the last choice would receive a one.

Read each idea and have all members give their rankings. Add up the numbers. Allow time to discuss the choices as they relate to the group's overall goals. From the decisions made, make up the list of topics for the year's program.

## Deciding Who Does What

Now that the group has decided what they want to learn more about, you will want to be sure everyone shares in the responsibility to see that it happens. Allow as many members (and families) as possible to have a specific job on the year's program. Recreation, demonstrations, refreshments and hosting the main program are all possibilities. If the group is large, the team approach is suggested.

## Completing the Program

Write an outline so everyone can see the plan taking shape. An example of one possible format follows. After the program is completed, make copies for each family. You might include a list of participants' names and phone numbers.





## Share

- How did you make the plan for the year?
- How was everyone involved?

## Generalize

- What life skills do you practice when planning together?

## Process

- Why is it important for youth, parents, and leaders to work together when planning activities?
- How did you feel about your planning session?

## Apply

- How will the way you plan your week or year change as a result of this experience?
- How will it help you plan other areas of your life?



## Pit Stop

# Small Engines Meeting Calendar

Name of Group \_\_\_\_\_ Names of Helpers/Leaders \_\_\_\_\_

### Group Goals for the Year

1. All members complete at least one-half of their achievement programs.
2. Plan and conduct a community service project.
3. Involve each family in activities.

Meeting Date, Time and Place	Meeting Topic and Planned Activities	Who is Responsible	What to Do Before the Next Meeting
July 20 5:30 p.m. Town Hall	Regap a spark plug	Schuler family	Find spark plug and spark plug socket and a wire feeler gauge

Source: Adapted from 4-H Woodworking Helper's Guide, 1997.

# Tour Time



<b>Life Skill:</b>	Planning and organizing
<b>Small Engine Skill:</b>	Gaining small engine knowledge
<b>Education Standards:</b>	NL-ENG.K-12.8 – Developing Research Skills
<b>Success Indicator:</b>	Plan and conduct a small engine project tour.
<b>Toolbox:</b>	Phone book, resources on interviewing, pencils, paper

**Warm Up!** A tour is more than shuffling youth in and out of cars and vans. A tour is a chance for youth to obtain knowledge from a professional in the field. Knowledge is the key to a bright future for tomorrow's leaders. Today's youth are tomorrow's leaders, employers, inventors, and small engine users.

**Throttle Up!** To begin planning, ask the group what it would like to see, expect to see, do, and learn on the tour. Involve youth in planning the tour, making contacts, developing questions and orienting the group.

## Making Contacts

Youth can make initial contacts to make arrangements regarding the date, time, and things to see and do on the tour. The telephone yellow pages may provide you with a wealth of places or ideas on whom to visit.

## Transportation

Have one or more youth see that transportation is arranged and the directions are made available.



Planning a tour

## Questions

See how many questions they can write that might be asked on the tour. Be sure each youth has at least one question to ask. Possible areas for questions may be:

- What types of engines are worked on?
- What types of tools are used?
- How do they know what is wrong?
- What happens to waste materials?
- Where do the parts come from?
- How are parts stored?
- How are costs and prices set?
- What do workers enjoy about their jobs?
- What problems occur most often?
- Why use small engines?

## Additional Questions

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## Share

- How did you decide where to go on your tour?
- How did you organize your tour?

## Process

- How did the tour differ from your plans?
- What caused these differences?

## Generalize

- What did you learn during the tour that will be helpful in your small engine project?

## Apply

- If you were to plan another tour, what would you do differently?

Stop

## Pit Stop

### Tour Ideas

- Golf courses
- ATV or snowmobile clubs
- Internet sites
- Small engine repair shops
- Small engine manufacturing plants
- Libraries
- Lawn and garden services
- University maintenance crew
- City maintenance crew

## Notes

## Race Ahead

1. Follow-up tour with a meeting having participants share experiences from tour.
2. Have your participants share experiences with project members unable to participant in the tour.
3. Invite someone from an organization to speak to the youth.



## Caution Corner

- Wear appropriate clothing.
- Follow tour leader's directions.
- Stay together as appropriate and do not explore unsafe areas.