In Small Engines youth will develop knowledge and skills about engine types, internal parts, tools of the trade, safety issues, and what makes small engines work. They will get hands-on experiences that will help them understand how machines, such as lawn mowers and model airplanes, operate and how to keep them running.

Exploring 4-H Small Engines
Spark Activity: Small Engines Scavenger Hunt

In many of our daily activities around our homes and community we use equipment powered by small gas engines. What are a few of these items and how can you benefit from acquiring adequate knowledge & skills for maintenance and repair of these engines? Explore your home and garage and create a list of items that you think run using a small engine. Do you have family or friends who might have additional items that run using a small engine? Make a list to see how many different pieces of equipment you can find that use a small engine. While on your scavenger hunt, does anyone have an older piece of equipment that no longer works? Taking apart an old engine that no longer works is a great way to learn about engine parts and assembly.

4-H Project Levels and Goals

**Beginner**
- Identify parts of a small engine
- Identify tools used with small engines
- Identify and use safety equipment
- Learn to perform engine maintenance on spark plugs, air cleaners, and carburetors
- Determine engine size

**Intermediate**
- Classify small engine types
- Identify internal small engine parts
- Test the compression of an engine
- Be able to clean a carburetor and understand carburation
- Obtain information about careers related to small engines

**Advanced**
- Identify small engines by sound
- Identify and use diagnostic tools
- Learn to assemble and tear down an engine
- Learn to tear down and rebuild an engine’s electrical system
- Select and install replacement engine
- Start your own business
**Put Your Project Into Action**

**Show Your Skills**
- Talk or demonstration on the different parts of an engine or small engine safety
- Poster with parts and functions of small engines or tools needed for maintenance or repair
- Display showing routine repair and maintenance
- Display comparing 2-stroke and 4-stroke engines

**Service and Leadership**
- Do a small engine tune-up day with proceeds going to a local charity
- Winterize lawn mowers for community members
- Host a used oil drive
- Lead a small engine safety workshop or seminar
- Organize a lawnmower tune-up clinic
- Plan a tour for your 4-H club of a local mechanic shop or lawncare business

**Entrepreneurship**
- Reconstruct defective small engines to resell
- Start a lawn mowing business
- Review mechanical repair tools online in videos or on a blog
- Job shadow a mechanic or small engine repair shop business owner for a day

**Technology Connection**
- Lithium-ion battery electric starting technology replacing pull start
- Hassle-free starting- no prime, no choke

**Connecting with a Mentor**
- Local small engine shop or mechanic in your community
- Staff at local community college in mechanics

**Events**
- Exhibit opportunities at your county and state fair
- Give a speech or demonstration related to engines in your county 4-H public speaking competition
- Contact a local antique tractor club
- Contact a local agriculture instructor or community college for information on local opportunities for workshops, activities, events

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**Start a Conversation**

What is the difference between a two-stroke and four-stroke engine?
The human body has numerous systems (nervous, digestive, muscular, etc.) that each have a function and they all work together. A small engine works in much the same way. Can you name some of these systems and how do these compare to the human body to keep the engine running?

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**Want to learn more?**
go.illinois.edu/4Hsmallengines

**Explore more at Illinois 4-H!**
4-H.extension.illinois.edu