



ADVENTURE WORKSHEET

Engineer

Cub Scouts · Elective · Arrow of Light rank

Name

Started

Completed

Engineer shows how people design and build the things we use every day. You'll learn about three kinds of engineering, pick one, and then build your own project. Thinking like an engineer means planning, testing, and improving.

Requirements

Every official requirement, in plain language. Check the official wording when you sign off (scouting.org/cub-scout-adventures/engineer/). Tips and examples are ideas, not extra requirements.

- ☐ **1** Learn what civil, electrical, and mechanical engineers focus on, the sciences they use, and what they make

Tip: Learn that civil engineers build bridges and roads, electrical engineers work with circuits, and mechanical engineers design machines.

Example: Civil engineers design roads, bridges, dams, and water systems. Electrical engineers design circuits, power grids, and electronics. Mechanical engineers design machines with moving parts, from bikes to car engines.

- ☐ **2** Choose one of those engineering fields to use for the rest of the requirements

Tip: Pick the field that sounds most fun to you.

- ☐ **3** Examine blueprints or specifications used by the kind of engineer you chose

Tip: Look at real plans, like house blueprints or a circuit diagram. Ask an engineer to explain them.

Example: A civil engineer reads blueprints that show a building from above with measurements. An electrical engineer reads circuit diagrams with symbols for batteries and switches. Find one and figure out three symbols.

☐ **4** Pick a project you'd like to build

Tip: Think of something you'd like to build, like a bridge, a simple circuit, or a small machine.

☐ **5** Build your project using the engineering process

Tip: Plan, build, test, and improve your project. Write down what you changed and why.

Example: Building a bridge from craft sticks: define the problem (span 12 inches and hold weight), sketch two designs, build one, test with pennies or books, then improve the weakest part and test again. Write down each change.