



Modular Design

Cub Scouts · Elective · Webelos rank

Name

Started

Completed

Modular Design is about building big things from small pieces that fit together. You'll invent your own model, write instructions for it, and see if someone else can build it. Then you'll rebuild the pieces into something totally new.

Requirements

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

- ☐ 1 Learn what modular design is and name three things built using it

Tip: Look for things built from repeating parts, like building bricks, shipping containers, or bookshelves.

Example: Three things built with modular design: the International Space Station, made of modules launched separately and joined in space; cargo ships carrying stacked shipping containers; and office cubicles that can be rearranged.

- ☐ 2 Build a model from modular building pieces without any instructions

Tip: Use building bricks or blocks and make anything you imagine, no instructions allowed.

- ☐ 3 Write step-by-step instructions for building the model you made in requirement 2

Tip: Write each step clearly. Drawings or photos of each stage can really help.

Example: Write each step with a number and a picture: "Step 1: Put two long red bricks side by side. Step 2: Stack a blue square on each end." Count the pieces you need at the top.

☐ **4** Have someone build your model by following your instructions

Tip: Give your instructions to a friend or parent and watch quietly. Note where they get confused.

Example: Give your instructions to a family member and stay quiet while they build. Note every place they get stuck, then fix those steps. That's called testing, and engineers do it all the time.

☐ **5** Use the same modular pieces from requirement 2 to build a different model

Tip: Take your model apart and use the same pieces to make something new.

Example: If your first model was a car, use the very same pieces to build a robot, a bridge, or a house. Notice which pieces are most useful in both.

☐ **6** With permission from a parent or legal guardian, watch a video showing something being built with modular design

Tip: With a parent's okay, watch a video about modular homes, bridges, or space stations.