



# Build a Bot

Teach students basic design skills (and boost self-awareness) with a fun robot project.

## Objective

Students will engage with the engineering design process while recognizing and celebrating their personal qualities and strengths.

## Time

45 minutes (broken into work periods as your classroom schedule allows)

## Materials

- All About Me activity sheet
- Sketch paper
- Crayons or colored pencils
- For older students: Materials for building, such as cardboard, fabric, colored paper, tape, chenille stems, split brass fasteners

**1 Kick off** a discussion of robots, building on students' prior knowledge. (Prompts to get the conversation going: *What does a robot do? What does it look like? Is it more like a machine or a real person?*) Explain that robots are special machines with "superpowers" that let them do things like lift heavy objects, visit the bottom of the ocean, and see into very small spaces. Ask students which superpowers they would like to have if they were a robot.

**2 Introduce** and define the classroom challenge to students.

- Today you will design (*or engineer*) a mini-robot that reflects your special qualities and the superpowers that would fit you.

**3 Distribute** the activity sheet. Have students conduct and record research about themselves. Older students can write simple answers; younger students can record answers with the support of a scribe or draw pictures.

**4 Guide** students to use their research to draw a mini-robot design that represents their special qualities and includes their superpowers. **For younger students**, this drawing can be their final project. **Older students** will use this sketch to plan and construct a three-dimensional robot.

• **Math Connections** Depending on what you are teaching at the time, challenge students to:

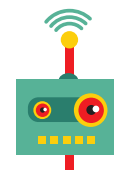
- Include at least one triangle, circle, pentagon, etc. in their designs
- Use a ruler for measurement

**5 Direct** older students to build their mini robot from classroom materials such as colored paper, cardboard, chenille stems, etc. Circulate and help them problem-solve as they work. Encourage them to test their construction and make improvements as they build.

**6 Share!** Have students present their robot designs to their peers, and explain how their robot is like them, and what things their robot can do. (Older students can also discuss their robot's materials and construction, and the hard or fun parts of the engineering design process.) Encourage students to practice active listening skills, ask thoughtful questions, and share positive and encouraging feedback with each other.

## Math Extension

Challenge students to **identify and describe the two-dimensional shapes** (trapezoids, squares, triangles, etc.) they find in the class's robot designs.



## BRAIN BREAK

Create a list of silly robot commands like *robo-dance*, *robo-walk*, *robo high-fives*. Students take turns choosing which action the class will take during a break.

Name \_\_\_\_\_

# ALL ABOUT ME

What makes you special? Fill in the boxes with words or pictures.

**5 of my favorite things**

**4 things I am good at**

**3 of my best qualities**

**2 things I am proud of**

**1 fun fact about me**