

Name: \_\_\_\_\_

# ROBOT DESIGNER

In "Robots: *Star Wars* vs. The Real World" (p. 16), you learned about some of the robots that engineers have designed to help improve daily life. This skills sheet will help you plan and design your own robot. The questions below will guide you through the design process. Write your answers in the spaces provided.

## STEP 1: DEFINE THE PROBLEM AND MAKE A PLAN

**Brainstorm:** Determine tasks you think could be done by a robot and choose one to address. Explain the robot's function and what need it fills. Be sure to give your robot a name.

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**Consider your audience:** When designing a robot, engineers think about who will be using it. That may affect the features it includes. Who will most likely use your robot? Try to imagine their needs and interests. Address them in your design.

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**Plan how it will work:** What features will your robot need to perform the desired task? How will it move? Will it need a remote control? Explain how your robot will complete the task.

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**Get feedback:** Talking to people who might use your robot can help you improve its design. Describe your robot idea in detail to at least two classmates to get feedback. Do they notice any *constraints*, or limitations, that may affect how well your robot works? Do they have ideas for improving your design? Record their comments and make revisions based on their feedback.

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## STEP 2: DESIGN A PROTOTYPE

**Create a visual design:** Before building a robot, engineers often start by drawing a visual representation of their design. Draw your robot in the space below. Be sure to label and describe all of its important parts.

## STEP 3: OPTIMIZE YOUR DESIGN

**Refine your design:** Show your design to your classmates. Is it clear to them what your robot is meant to do and how it will perform this task? Make changes based on their suggestions.