

Lesson Plan

Design a Robot

Book: *All About Robots*

Series: Cutting-Edge Technology

Level: Navigator

Objective

To help students collect and infer information about a problem to solve, and to incorporate that information into a creative solution to that problem.

Supplies

- *All About Robots*
- Whiteboard
- Paper and pencils

Before the Activity

Read through the *All About Robots* book, or assign it to students to read on their own.

Activity

After reading the *All About Robots* book, have students answer the following questions to create a list of the different traits robots can have. Write their answers down on the whiteboard.

1. How do robots collect information about the world around them? (examples: cameras, heat sensors, radar, microphones)
2. How do robots move, grab things, or perform other actions? (examples: wheels, robotic arms)
3. What are common power sources for robots? (examples: batteries, solar panels)
4. What other features do some robots have? (examples: GPS systems, speakers, decorations)

Ask the students to pretend they work for a company that designs robots. They need to create a robot that will help take care of a house where an elderly person lives. Brainstorm a list of tasks that this robot might need to do (examples: cook food, clean floors, remember schedules, help with dishes, etc.).

Each student should make a design for a robot that can help with these tasks. They should write a brief description of the robot, answering each of the following questions:

1. What information will the robot collect about the world around it?
2. What will the robot use to collect that information?
3. How will the robot move?
4. Will it grab things or perform other actions? If so, what will it use to do these actions?
5. What will the robot's power source be?
6. Does the robot have any other features?

The students should write one sentence answering each question and one to two sentences explaining why their choice will help their robot successfully do its tasks. The students should also include a drawing of what their robot will look like.

Evaluation

Give the students up to 18 points for their robot design. Award 1 point for answering each question and 2 points for explaining each answer with reasons and logic.

Standards

This lesson may be used to address the Common Core State Standards' writing standards, grade 5 (W 5.1; 5.8).