Line-Following Robot

Student quiz — Answer key

Directions: Circle the best answer for each question below.

1. The sensors your robot used in this project detect _____.
   a. sound
   b. motion
   c. visible light
   d. infrared light

2. Infrared light is _____ by a dark surface.
   a. reflected
   b. absorbed
   c. transmitted
   d. none of the above

3. What would happen if both of your robot's sensors saw a black line at the same time?
   a. The robot would stop.
   b. The robot would go in reverse.
   c. The robot would keep going straight.
   d. The robot would spin in circles.

4. A breadboard:
   a. is the robot's body
   b. detects infrared light
   c. is used to build electronic circuits
   d. none of the above

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Directions: Write your answer for the question below.

5. In this project, you built a robot that can automatically follow a solid black line on a white background. This is a simple example of how a vehicle can be autonomous (drive without a human driver). Write a paragraph that explains some of the challenges faced by real-world self-driving cars.

Example challenges include (but are not limited to) identifying different types of lines (solid, dashed, etc.), reacting to other cars, obeying traffic signals and signs, avoiding obstacles in the road like pedestrians or tree branches, and following directions between two locations.