Light Sensitive Rover

Shared by: K12Maker team at MIT Edgerton Center

<table>
<thead>
<tr>
<th>Specialized tools and materials used:</th>
<th>Experience level required:</th>
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<tbody>
<tr>
<td>Electronic components and breadboards</td>
<td>Intermediate</td>
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</tbody>
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**Grade Level and Subject:** High school Computer Science, Engineering

**Topic/Content Standards:** Computational Thinking, Analog electronics

**Summary of Project:**

Students investigate robotics that don’t use a computer to process logic. In this project, simple analog components to create a motor driver circuit that responds to light.

Moving the light sensors changes the behavior of the robot car - it can chase the light or run away from it.

Use a robot car kit or build you own with hobby motors and wheels. Adjust the potentiometers to match the light levels in the space and balance the performance of the motors.

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Materials

- Simple car with 2 gear motors such as Amazon.com: 2WD Smart Robot Car
- 6 V battery pack
- Solderless Breadboard
- 2 Power transistors: TIP 120 such as TIP120-R NPN Power Transistor, NPN: Amazon.com
- 2 Potentiometers, 10K such as Amazon.com: 10K Ohm Breadboard Trim Pot
- 2 Photoresistors such as 30 Pieces Photoresistor: Amazon.com