# Light at the Beginning of the Tunnel - NXT

***Suggested Time***

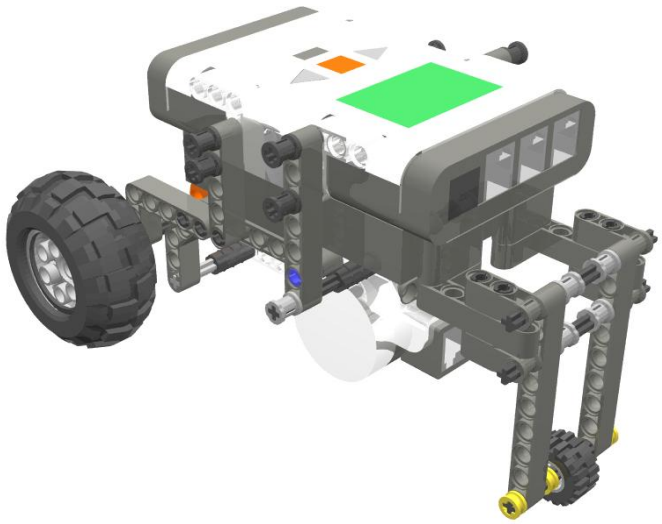
60 minutes

***Age***

8 - 13

***Challenge***

In this activity, use an RCX car equipped with a light sensor to determine the hidden letter (under a table or in another room). The letter will be determined using light sensor collected data on 3 passes over the letter.



***Topics***

Light Sensors

***Subjects***

Science, Engineering & Technology

***Programming Themes***

Motor Forward / Backward, Wait for Light / Dark, Jumps / Lands

***Related Math & Science Concepts***

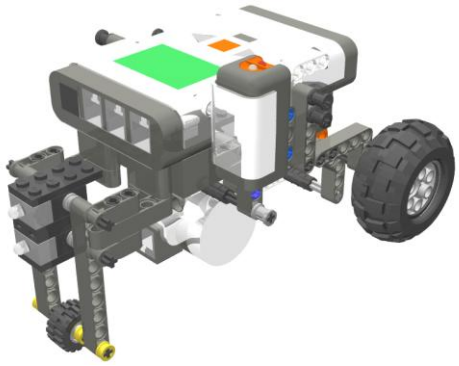
- Wheels and Axles

***Materials***

- NXT Car
- Light Sensor
- Tunnel

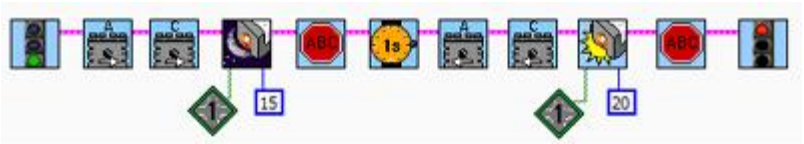
***Building Instructions***

1. Starting with the origional one motor kit car, add a light sensor and lights to the car. Wire the motors and the lights to the outputs, and the light sensor to an input.



***Programming Instructions***

1. Choose whether to use ROBOLAB or the LEGO NXT Software to program (follow step 2 for ROBOLAB; follow step 3 for LEGO NXT Software.)
2. In ROBOLAB INVENTOR 4, program a car to drive till it sees dark and then reverse.




3. Using the LEGO NXT Software, program the car to travel forward until the light sensor reads below a certain level, stop for 1 second, reverse out of the tunnel, and stop again.


***In Action***

The car should drive to the tunnel until it enters the tunnel at which point it will reverse itself back out.