SPIKE PRIME LESSONS

By the Creators of EV3Lessons

INTRODUCTION TO DISTANCE SENSOR

BY SANJAY AND ARVIND SESHAN

LESSON OBJECTIVES

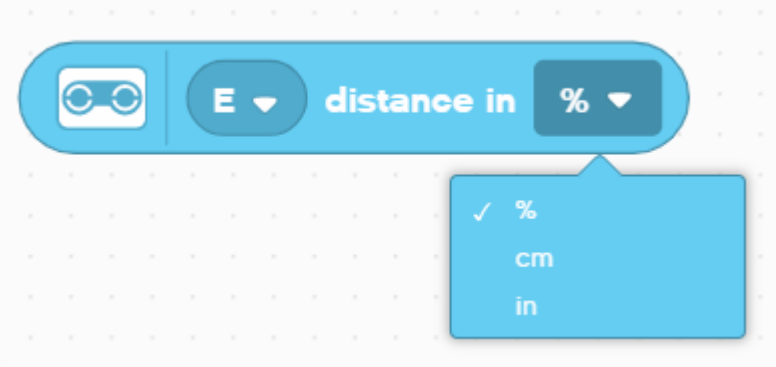
- Learn how to use the Distance Sensor
- Learn how to use the Wait Until Block

WHAT IS A DISTANCE SENSOR?

- Measures the distance to an object or surface using ultrasonic technology
- There are also lights around the ultrasonic sensor (4 segments) that can be programmed individually (see Lights Lesson)
- The sensor can sense distances from 50-2000mm
- There is a fast sensing capability from 50-300mm

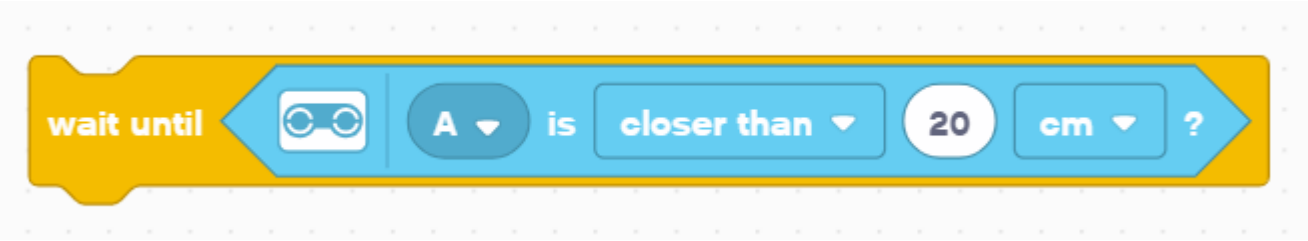
HOW DO YOU PROGRAM WITH A DISTANCE SENSOR

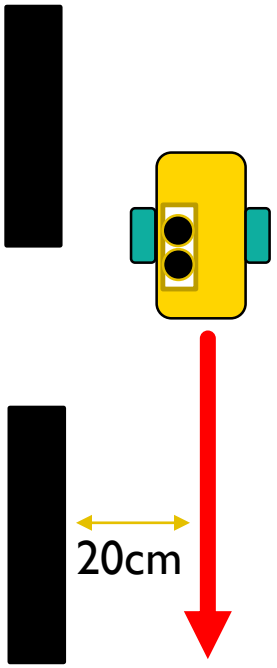
- The Distance Sensor can measure the distance to an object or surface using ultrasonic
- You can also program the lights around the sensor. This is covered in a different lesson.
- Units can be measured in Percent, Centimeters or Inches



CHALLENGE: AWAY FROM THE WALL

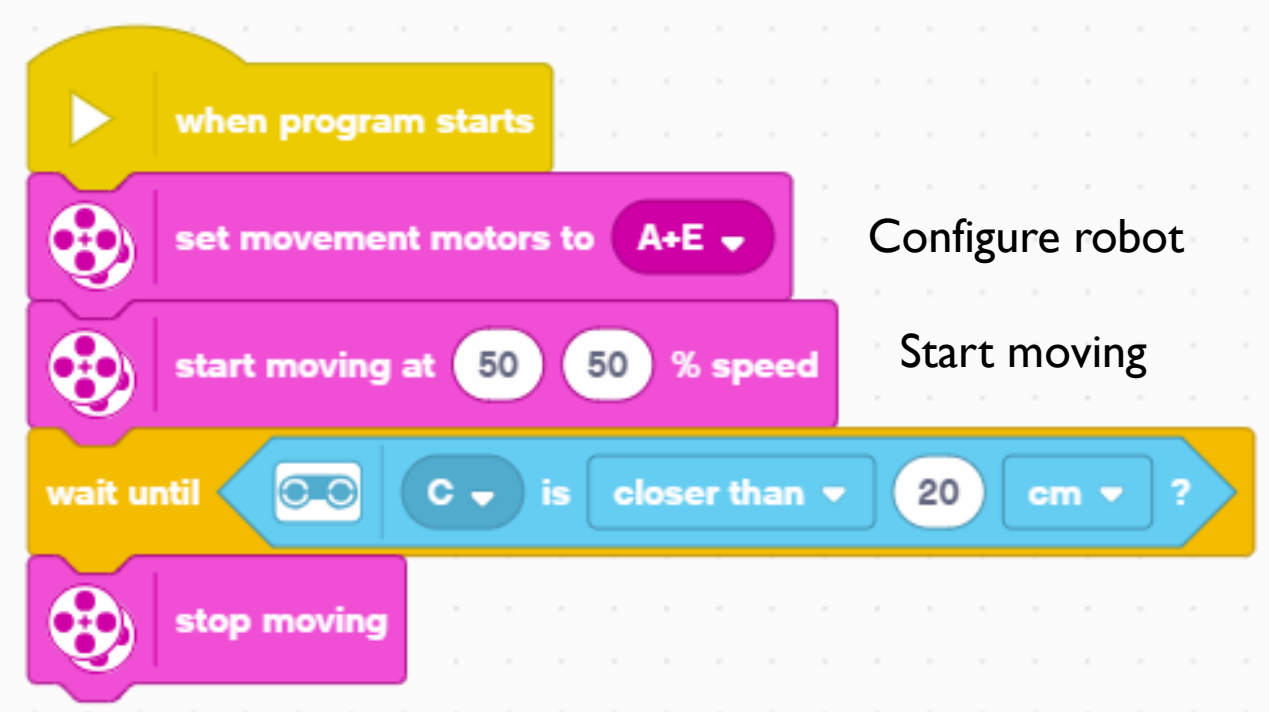
- You want to find the opening. Use your Distance Sensor (mounted on the side of the robot like Droid Bot IV) to locate the gap
- Program your robot to move straight until it is less than 20cm from the wall
- You will need to use the Wait For block and the Boolean block of the Distance Center





- **Pseudocode:**
  - Set the **movement motors** for your robot (A and E for ADB robot)
  - Set the **% speed** for your robot
  - Start **moving straight**
  - Use the **wait for** block to detect that it is less than 20cm from the wall
  - **Stop moving**

CHALLENGE 1: SOLUTION



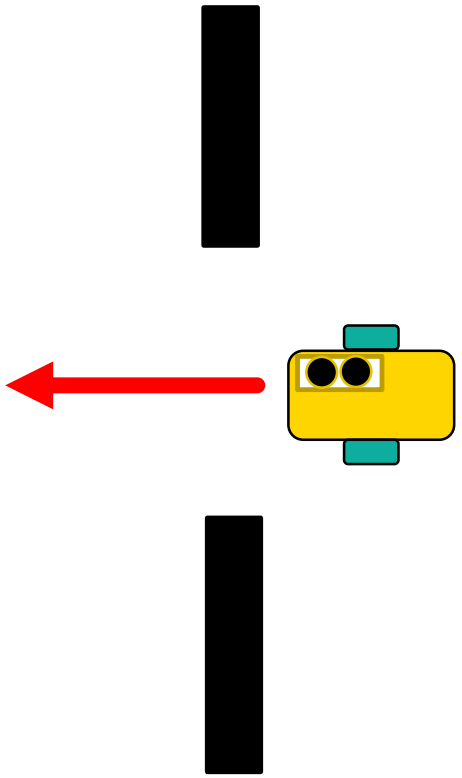
Configure robot

Start moving

Wait until the Distance sensor is less than 20cm

EXTENSION

- Once you find the wall, move the robot backwards and go through the hole



CREDITS

- This lesson was created by Sanjay Seshan and Arvind Seshan for SPIKE Prime Lessons
- More lessons are available at www.primelessons.org