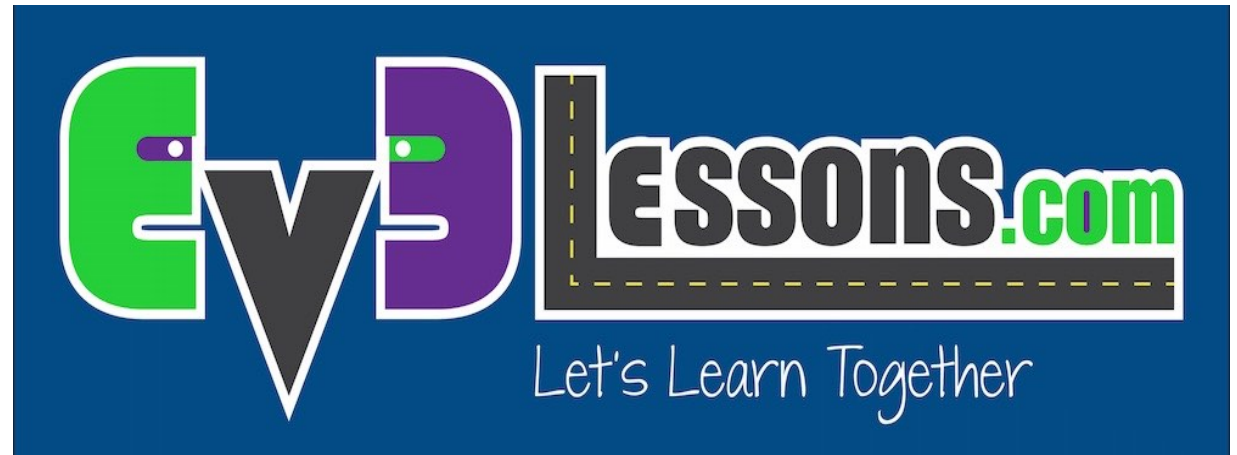


TABLET
LESSONS



ULTRASONIC SENSOR

By Sanjay and Arvind Seshan



Lesson Objectives

1. Learn about the Ultrasonic Sensor
2. Learn how to use Wait Until Ultrasonic Block
3. Learn the difference between the Wait Until Ultrasonic Block and the Ultrasonic Block

What is a sensor?

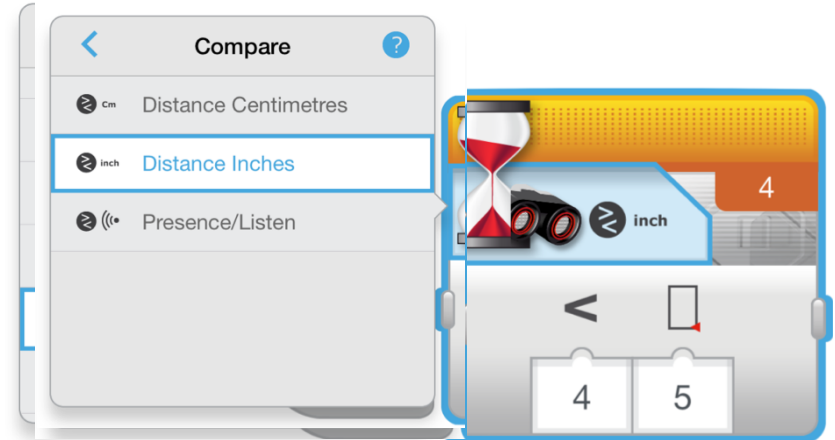
- A sensor lets an EV3 program measure and collect data about its surroundings
- The EV3 sensors include:
 - *Colour* – measures color and darkness
 - *Gyro* – measures rotation of robot
 - *Ultrasonic* – measures distance to nearby surfaces
 - *Touch* – measures contact with surface
 - *Infrared* – measures IR remote's signals



Image from: http://www.ucalgary.ca/IOSTEM/files/IOSTEM/media_crop/44/public/sensors.jpg

Ultrasonic Challenge 1

- Challenge: Make the robot move until it is 5 inches away from the wall.
- Step 1: Make a new program
- Step 2: Set move to “on”
- Step 3: Set wait block to use the Ultrasonic
- Step 4: Set move block to “off”

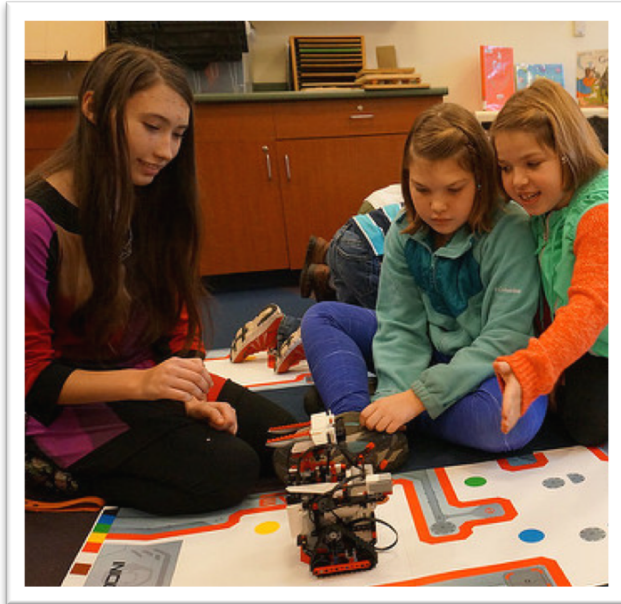


Animated slide

Challenge 1 Solution

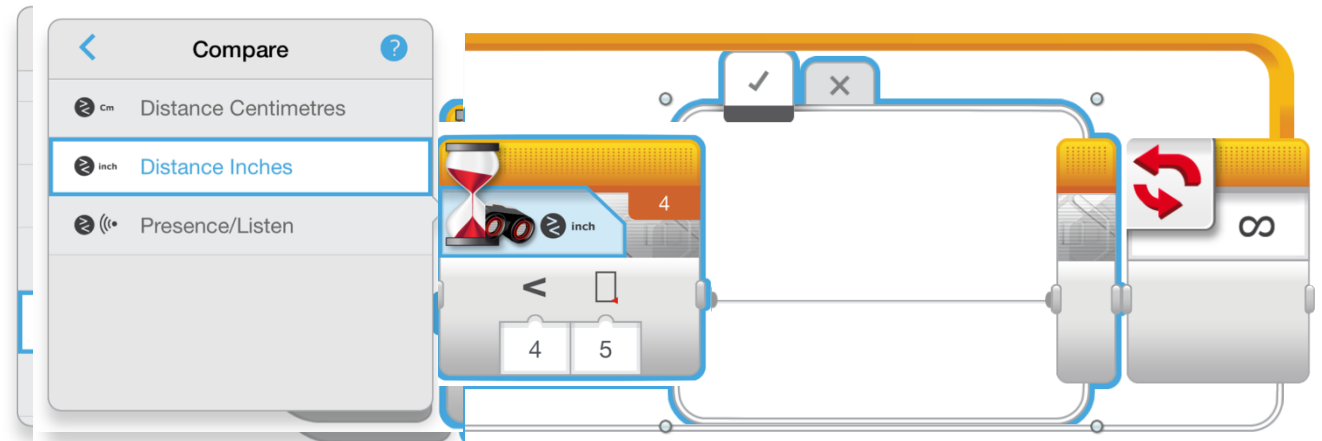


CHALLENGE 2: Use The Force To Control Your Robot!



Challenge 2: Pseudocode

- If the robot is closer than 5 inches away from your hand move backward, otherwise move forward.
- Step 1: Drag a loop from the orange tab
- Step 2: Drag switch inside loop
- Step 3: Set switch to Ultrasonic
- Step 4: Set move steering block to ON and place in TRUE
- Step 4: Set move steering block to OFF and place in FALSE



Animated slide

Robots Can Follow You & Even Dance with this code!



CREDITS

- This tutorial was created by Sanjay Seshan and Arvind
- More lessons are available at www.ev3lessons.com



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