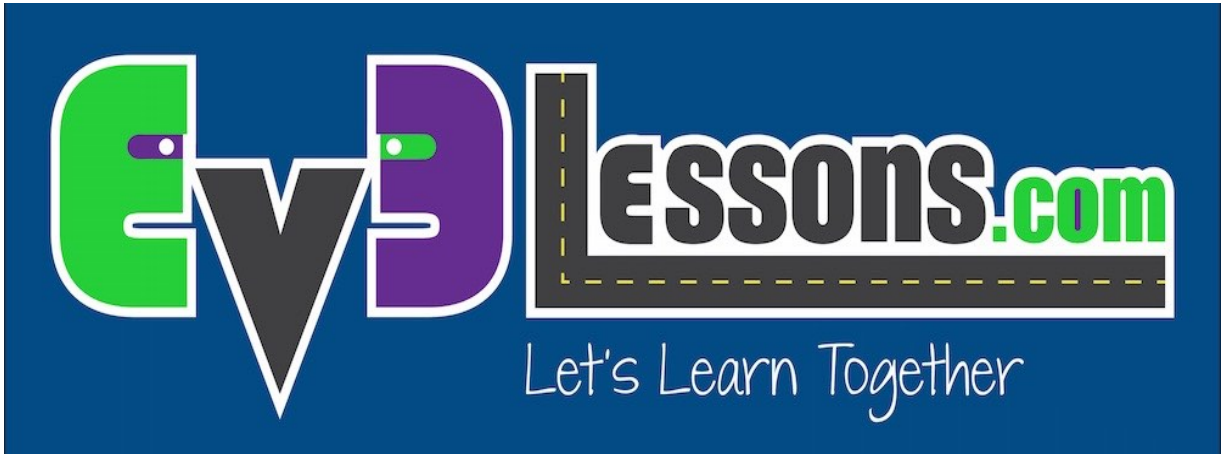
TABLET LESSONS



TOUCH SENSOR

By Sanjay and Arvind Seshan

Lesson Objectives

1. Learn how to use the Touch Sensor
2. Learn how to use the Wait For Block
3. Learn the difference between the Wait For Block and the Sensor Blocks
4. Learn when to use Move Block's "On" mode

What is a Sensor?

- A sensor lets an EV3 program measure and collect data about is 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

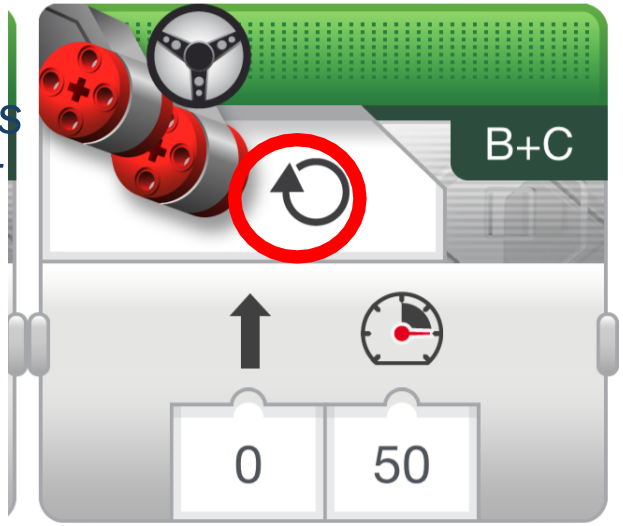
What is a Touch Sensor?

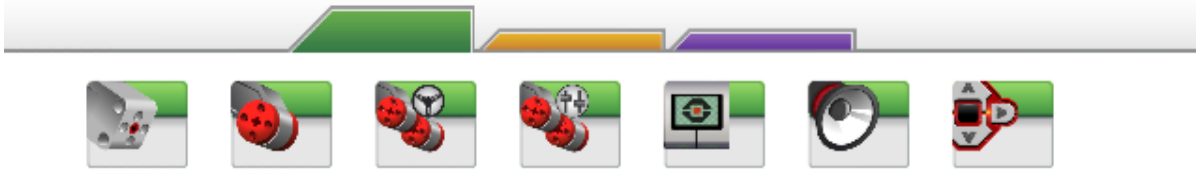
- Touch Sensor can detect when the sensor's red button has been pressed or released
- With this information, you can program an action when the sensor is:
  - Currently Pressed
  - Currently Released
  - Pressed and Released Just Before (Bumped)

- When might you use this sensor?
  - *Useful for programming "moving until touch sensor is pressed/released/bumped"*
  - *For example, if you put a touch sensor on the front the robot, you can have it stop moving if it runs into something.*
  - *You can also have your program start or stop when a touch sensor is pressed.*

A Tip for Move Steering Blocks With Sensors

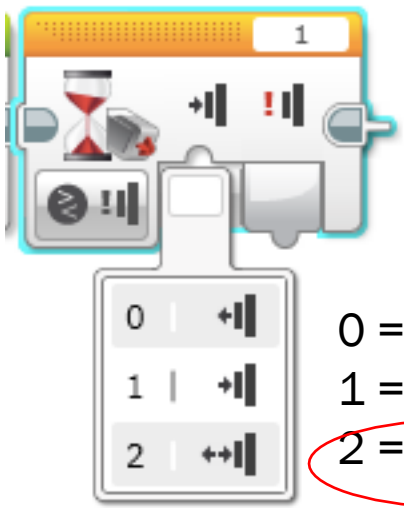
- Leaving the motor “on” and “off”
- Why use the “on” instead of “degrees”?
  - *May want the program to do other tasks such as reading a sensor while moving*



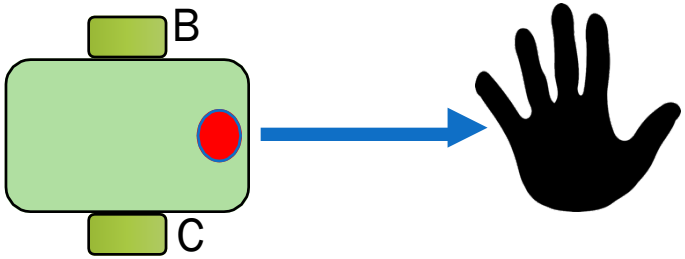


Challenge 1

- Program your robot to move straight until you tap the sensor with your hand.



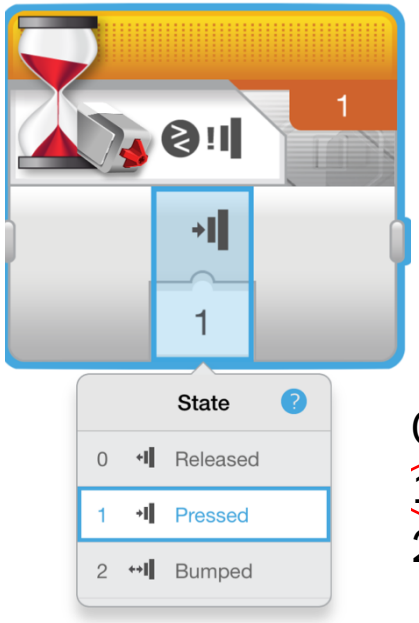
0 = released
1 = pressed
2 = bumped



Hint: You will combine: Move Steering + Wait Block

Challenge 2

- Program your robot to move until it hits the wall. Then back up and turn right (90 degrees)



0 = released
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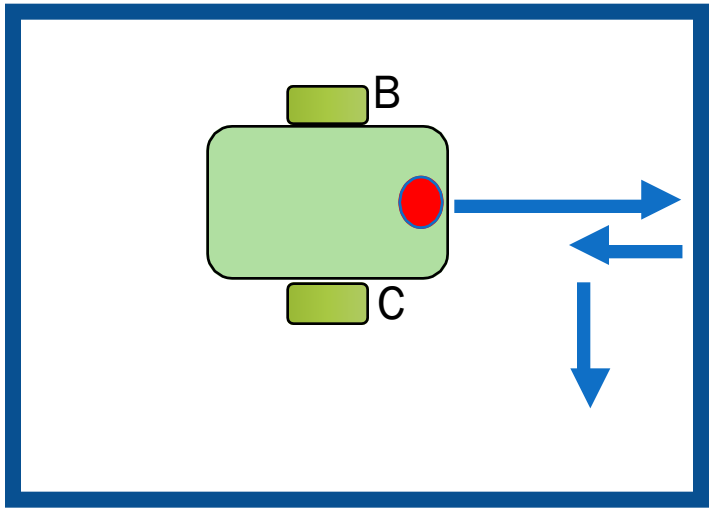
2 = bumped



Hint: You will combine Move Steering + Turning + Wait Block

CREDITS

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