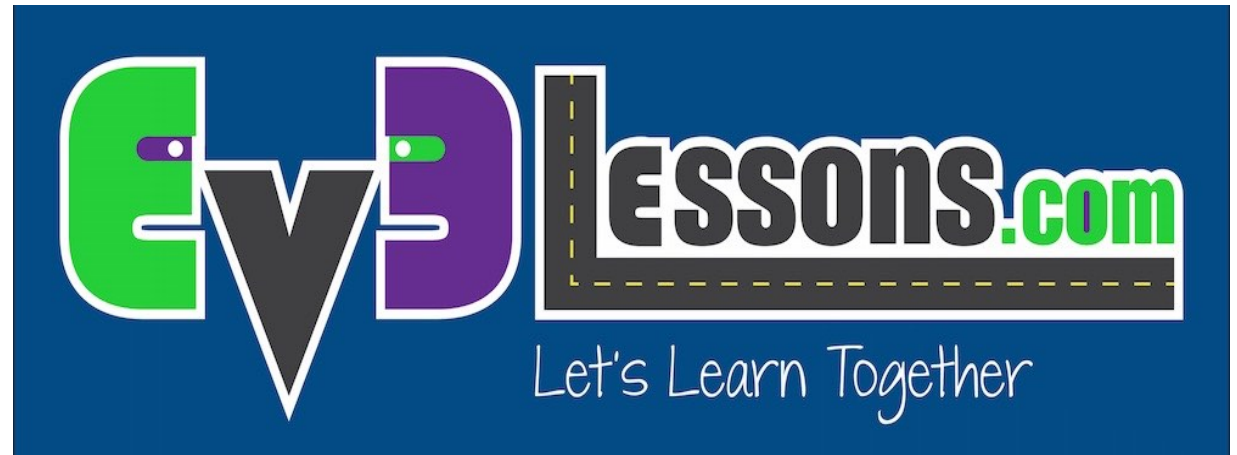


TABLET
LESSONS



COLOUR SENSOR

By Sanjay and Arvind Seshan



Lesson Objectives

1. Learn how to use the Colour Sensor
2. Learn about Coast and Brake

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

What is the Colour Sensor?

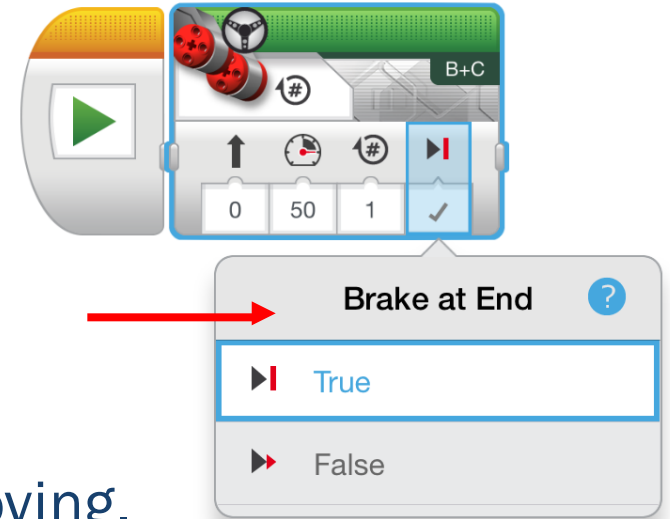
- What are they? Sensors that detect the intensity of light that enters it
- Three modes: Colour, Reflected Light Intensity and Ambient Light Intensity
 - **Color Mode:** Recognizes 7 colours (black, brown, blue, green, yellow, red, white) and No Color
 - **Reflected Light:** Measures the intensity of the light reflected back from a lamp that emits a red light. (0=very dark and 100=very light)
 - **Ambient Light:** Measures the strength of the light that enters the sensor from the environment. (0=very dark and 100=very light)
- USES:
 - Move until a line
 - Follow a line



We will use COLOR MODE in this Lesson

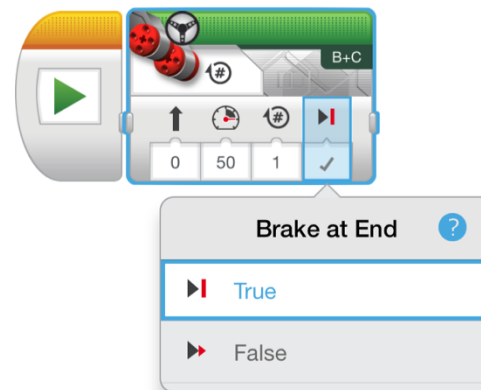
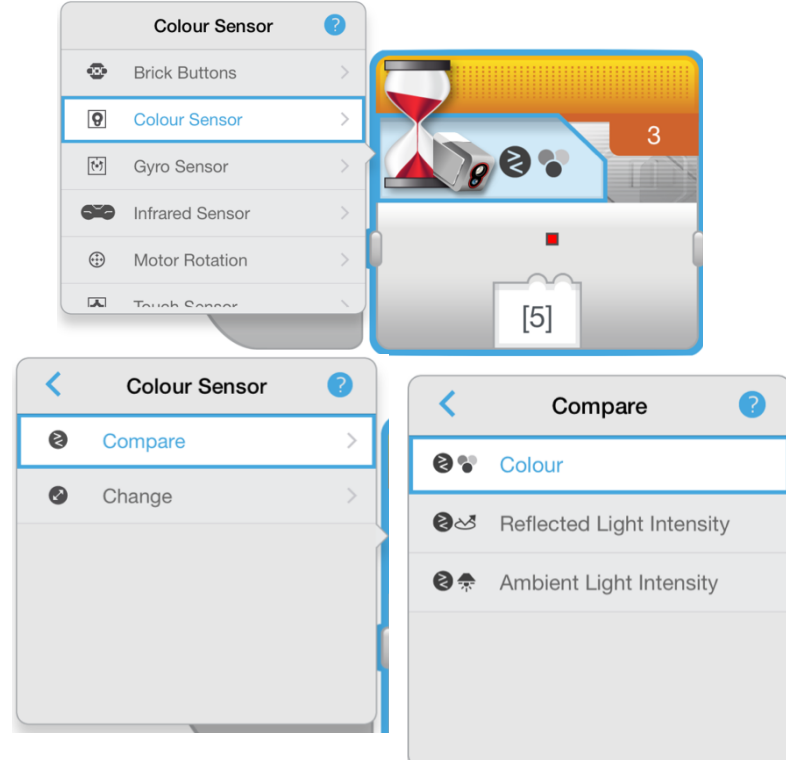
Another Move Steering Tip: Coast or Break?

- Something more about the Move Steering Block
- You will notice you have an option to COAST or BRAKE
- Coast will make the motors keep moving. Brake makes the motors stop immediately.
- Which do you use to stop EXACTLY on a colored line?

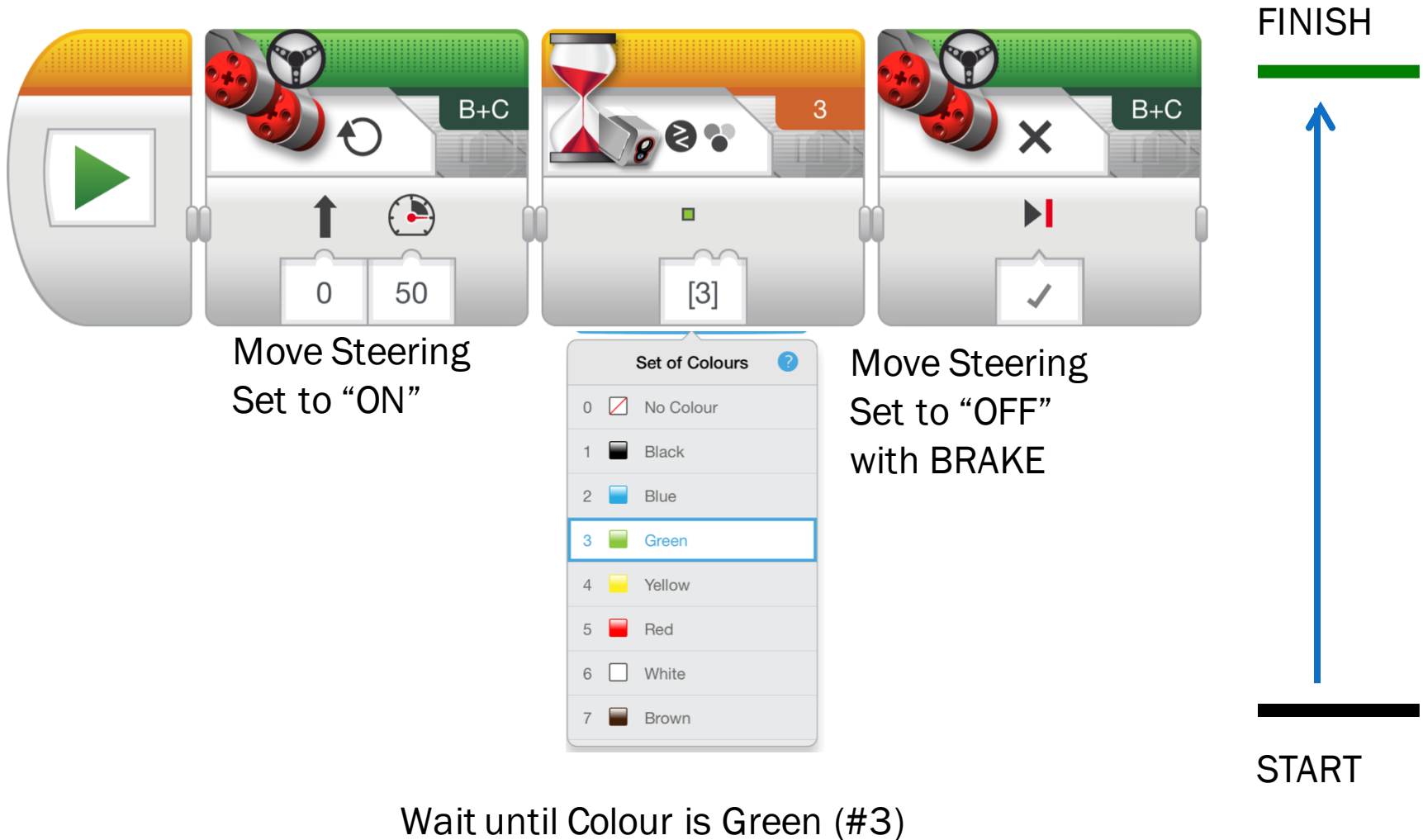


Colour Sensor Challenge

- Make the robot move up to a green line using the color sensor?
 - Step 1: Use Wait For Colour
 - Step 2: Use the colour sensor in COLOR MODE
 - Step 3: Coast or Brake?
- Hint: You will use Move Steering (think about motor on and off) and Wait for “Color”



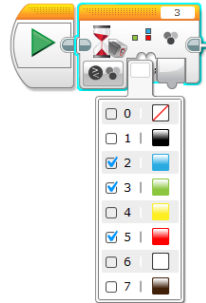
Colour Sensor Challenge Solution



Discussion Guide

- Can you look for more than one colour with the colour sensor?

Answer: Yes



- What is the difference between COAST and BRAKE in a Move Steering Block?

Ans. Coast will allow your motors to spin freely after a move, but Brake will immediately stop it

CREDITS

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



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