STEM - Smart Robot v2 - Altronics Z6454

Lesson 6.1 - Line Tracking Sensor Datalogging

Simulation of this lesson can be found at https://makecode.microbit.org/57670-47999-45900-55680

Scan QR code for Lesson 6.1 Simulation

Note: ***(Robot construction must be completed before this Step)***

Goal for this lesson
Learn to read the serial data from the line tracking photo diodes on the base of the Robot on a PC via USB

Hardware Required
PC will be required to log the serial data
1 x micro USB cable
1 x Smart Robot with micro:bit & battery installed

Step 1 *As per Figure 1*

a. Goto URL https://makecode.microbit.org/#
b. Create **"+New Project"** & give it a name
c. Press **Gear** symbol – top right
d. Press Extensions
e. Add repository found using link below
https://github.com/AltronicsAUKits/Z6454-Robot-Kit-v2_KS0426
f. On start up both **"on start"** & **"forever"** will be in your work space, move **"forever"** block below **"on start"** block

Figure 1

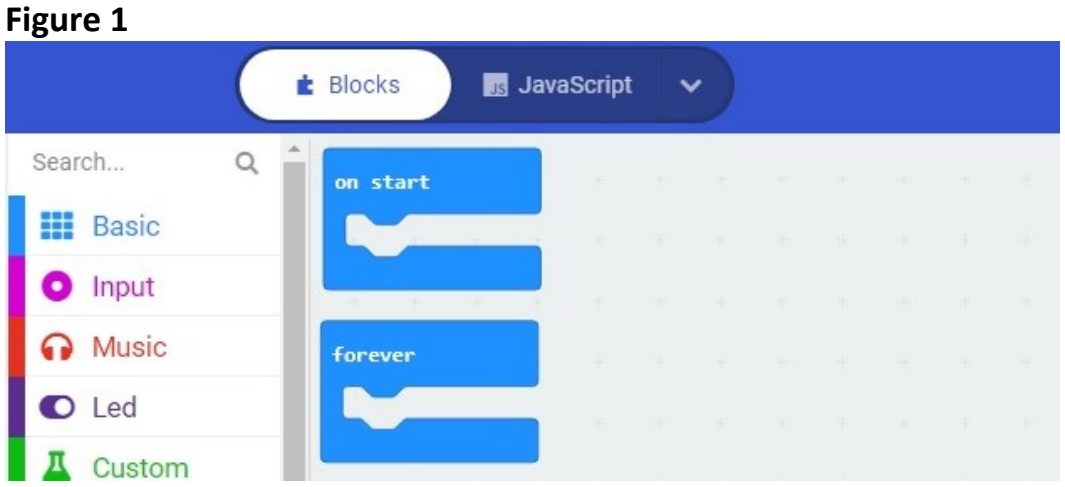


Figure 2

Step 2 *as per Figure 2*

Moving forward we will only highlight the locations for the required modules to produce the desired code.

a. We will be utilising the **"Basic"** Tab
b. We will be utilising the **"Serial"** Tab under **"Advanced"** Tab
c. We will be utilising the **"Pins"** Tab under **"Advanced"** Tab
d. Download the code to the micro:bit

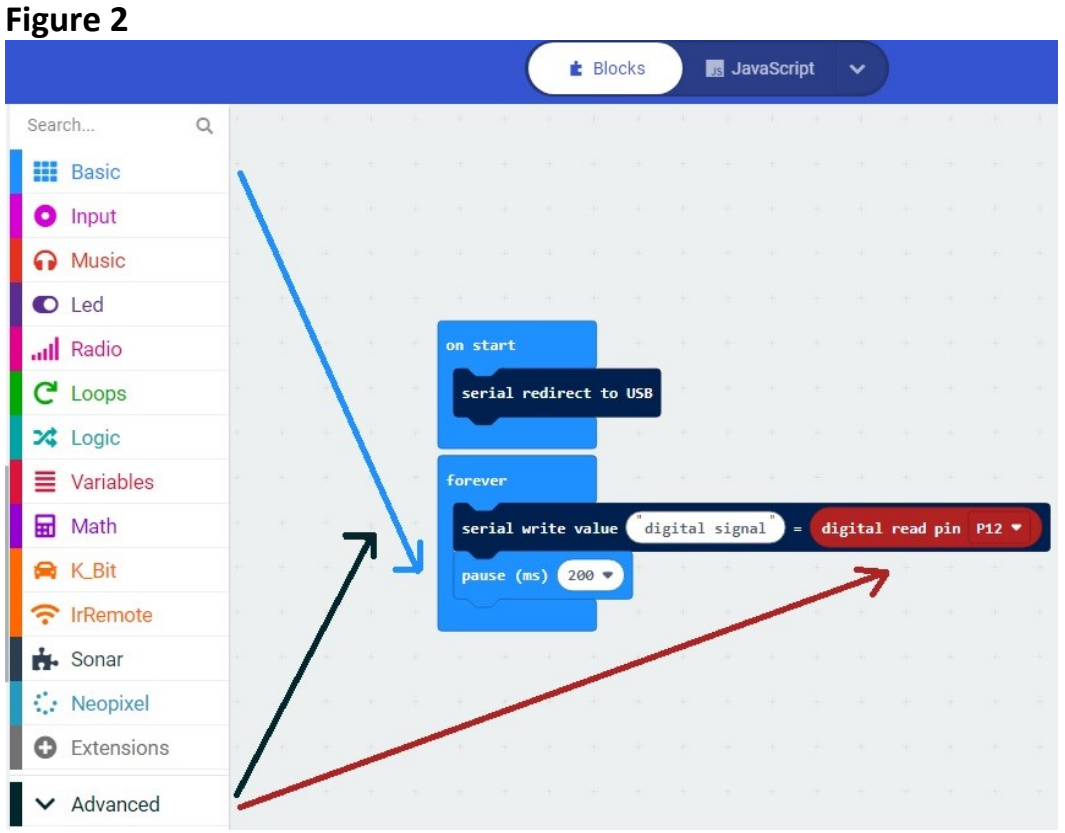
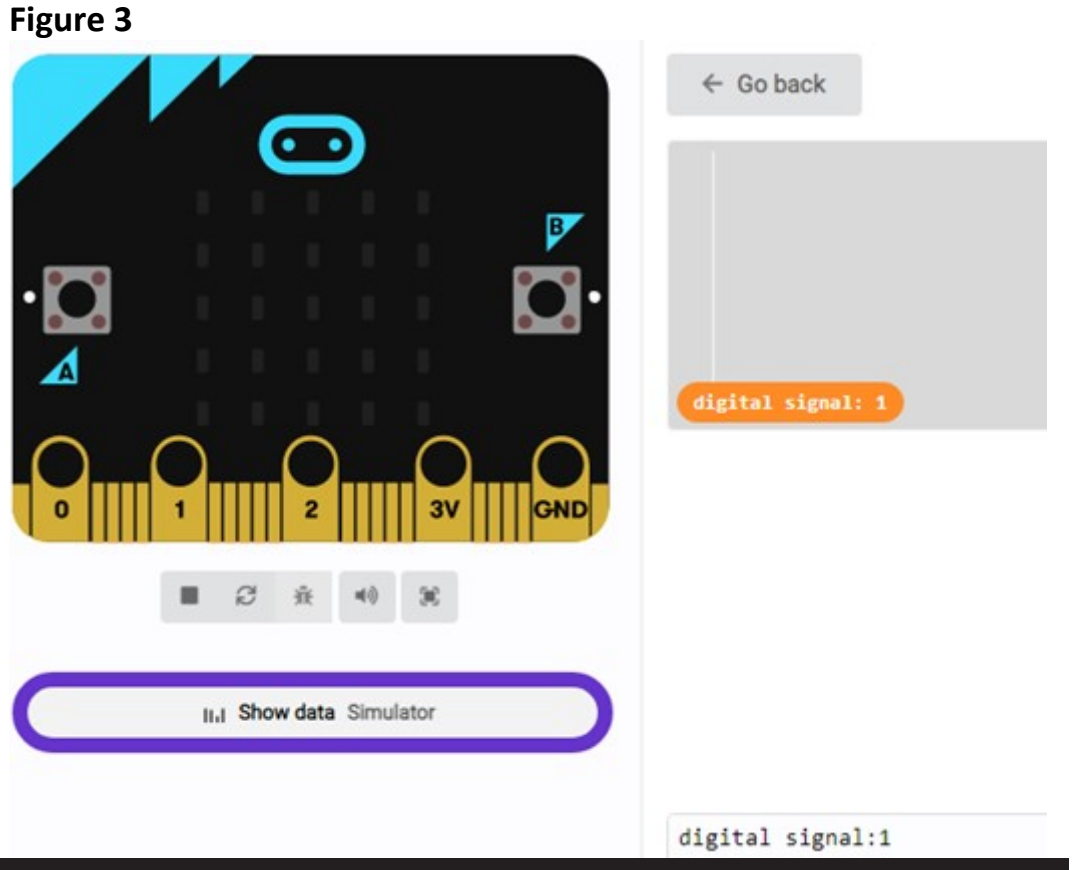


Figure 3

Expected Result!

a. Once the code has been written to the micro:bit.
b. Insert the micro:bit into the robot.
c. Power on the robot and plug the USB lead into the micro:bit.
d. On the Makecode website press "**Show data** device**"**
This will now begin to read the data on Pin 12 which is connected to the robots photo interrupter.
e. Now if you move the robot over a black line on white paper several times you will see a digital signal readout and rolling data display up top
As per Figure 3.



Example Line Tracking Sensor Datalogging can be found at
https://makecode.microbit.org/57670-47999-45900-55680

STEM Smart Robot can be purchase from Altronics.
https://www.altronics.com.au/p/z6454-stem-microbit-mini-smart-robot-car-v2.0/