STEM - Smart Robot v2 - Altronics Z6454

Lesson 4.1 - Robot Photosensor Datalogging

Scan QR code for Lesson 4.1 Simulation

Simulation of this lesson can be found at https://makecode.microbit.org/27401-49539-36169-24475

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

Goal for this lesson

Learn to control and utilise the onboard photo resistor to read serial data via USB on a PC.

Hardware Required

PC **(PC will be required for datalogging)**
1 x micro USB cable
1 x Smart Robot with micro:bit & battery installed

Step 1 *As per Figure 1*

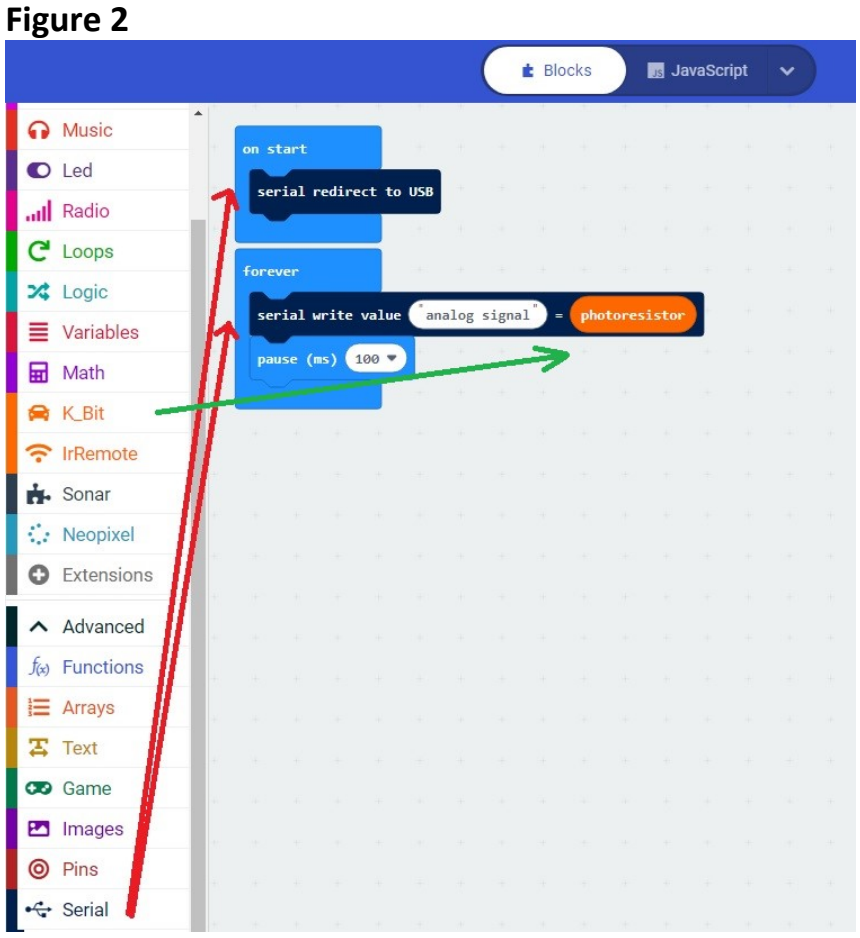
a. Goto URL https://makecode.microbit.org/#
b. Create **"+New Project"** & give it a name
c. Press **Gear** symbol – top right
d. Press Extensions
e. Add repository found using link below.
https://github.com/AltronicsAUKits/Z6454-Robot-Kit-v2_KS0426
f. On start up both **"on start"** & **"forever"**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

Figure 1

Step 2 *as per Figure 2*

a. Press **"Advanced"** Tab
b. Press **"Serial"** Tab
c. Drag **"serial redirect to USB"** into **"on start"** field
d. Drag **"serial write value "x" = 0"** into **"forever"** field
e. Press **"K_Bit"** Tab
f. Drag **"photoresistor"** into **0** field on **"serial write value "x" = 0"**
g. Adjust **"x"** field to say **"analog signal"** – *this will give the data set a name*
h. Press **"Basic"** Tab
i. Drag **"pause (ms) 100"** into **"forever"** field

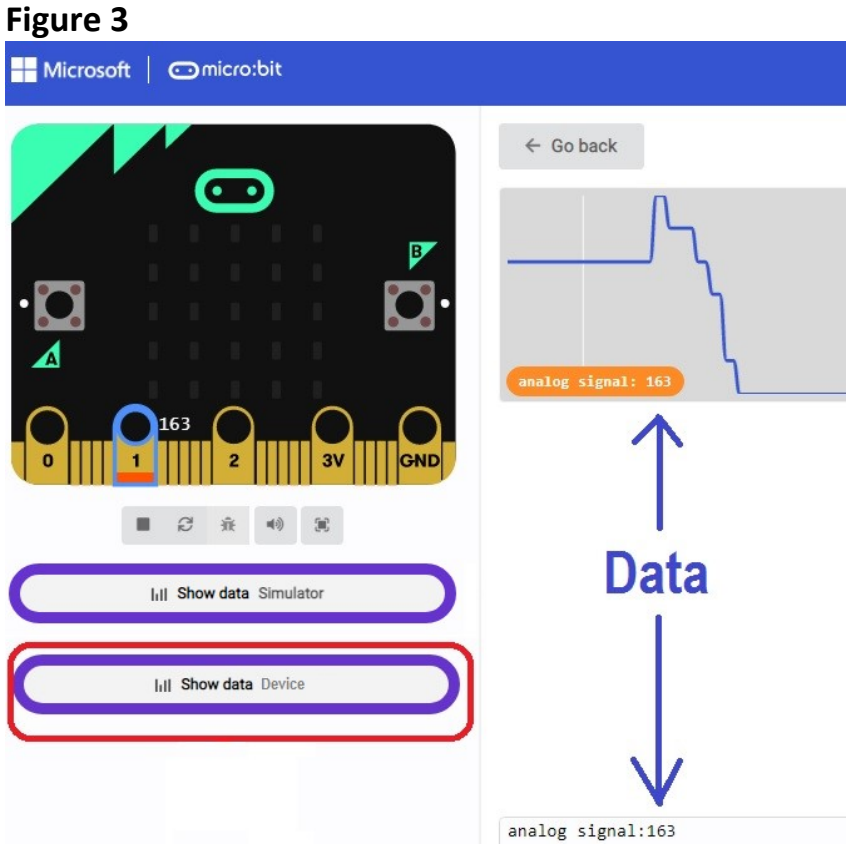
Figure 2



Step 3 *as per Figure 3*

a. Press **"Show data** Simulation" button on the left.
b. Now a **"bar graph"** and **"analog signal"** data will be display.
c. Move cursor over the **Pin 1 Location**, to increase/ decrease data simulation.
d. Connect micro:bit to PC & download the code.
e. Once download is completed.
f. Press **"Show data** Device" button on the left.
g. Now the live data from the photosensor can be logged and recorded.
h. Download the code to the micro:bit.

Figure 3



Example Photo sensor LDR simulation can be found at
https://makecode.microbit.org/27401-49539-36169-24475

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