

Lesson 6.2 - Line Tracking Sensor & Display

Simulation of this lesson can be found at <https://makecode.microbit.org/35533-78420-76198-58366>

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

Goal for this lesson

Learn to utilise the photo interrupter and when a line is detected we will see a visual output on the micro:bit matrix display.

Hardware Required

- PC or Tablet
- 1 x micro USB cable
- 1 x Smart Robot with micro:bit & battery installed

Step 1 As per Figure 1

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

Step 2 as per Figure 2

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

- We will be utilising the **"Basic"** Tab
- We will be utilising the **"...more"** Tab under **"Led"** Tab
- We will be utilising the **"Logic"** Tab
- We will be utilising the **"Variables"** Tab
- We will be utilising the **"Pins"** Tab under **"Advanced"** Tab
- Download the code to the micro:bit

Expected Result!

- Once the code has been written to the micro:bit.
- Insert the micro:bit into the robot and power it on.
- The robot will display a **"large heart"** on the matrix screen.
- Now if we move the Robot over a black line on white paper the matrix display will show us a **"line"** on either the left or right of the screen.
- If we see a **"small heart"** on the screen this is telling us that both photo interrupters have detected a black line.

Scan QR code for Lesson 6.2 Simulation

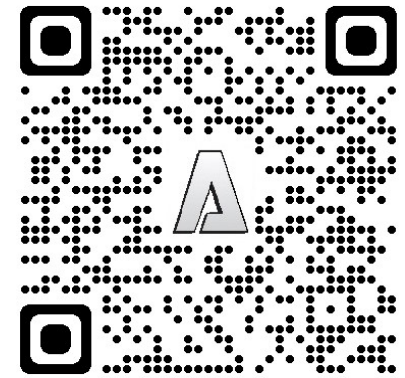
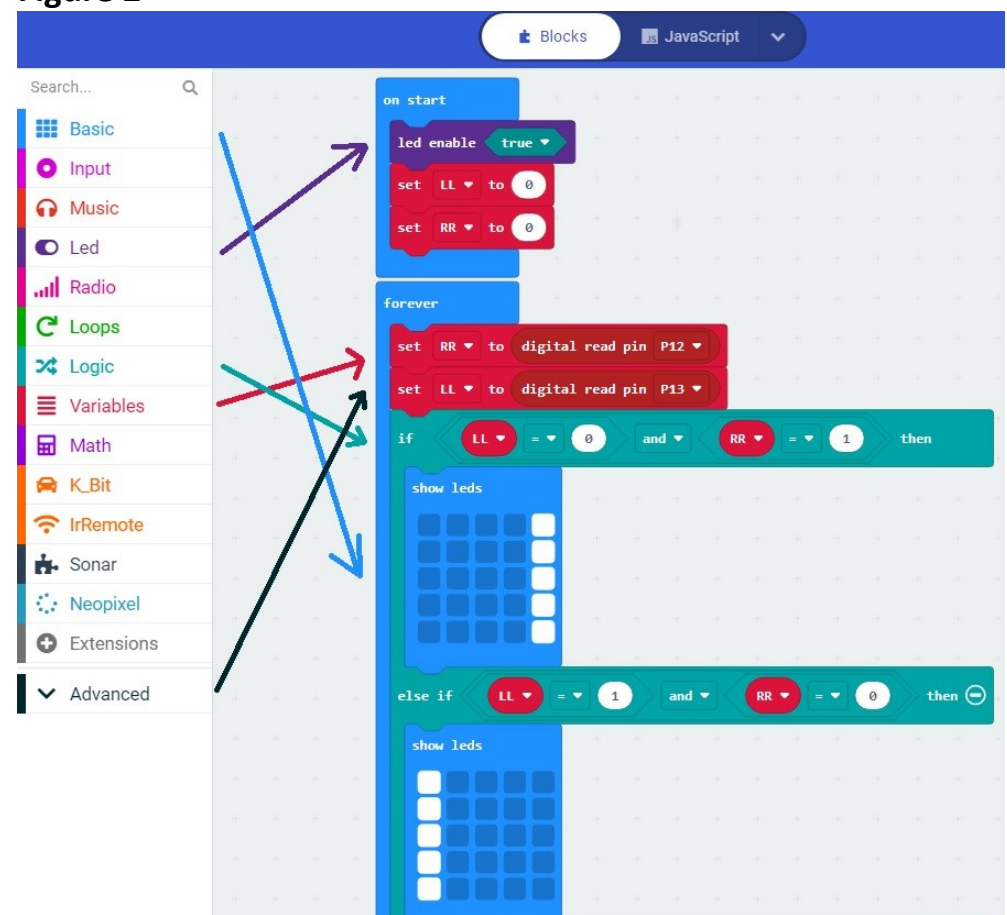


Figure 1



Figure 2



Example Line Tracking Sensor & Display can be found at
<https://makecode.microbit.org/35533-78420-76198-58366>

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