STEM - Smart Robot v2 - Altronics Z6454

Lesson 5.1 - Robot Motor Drive Experiment 1

Scan QR code for Lesson 5.1 Simulation

Simulation of this lesson can be found at https://makecode.microbit.org/17351-85940-06459-72277

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

Goal for this lesson

Learn to control the motors on the Robot, we will achieve forward/backwards and steering with a visual output on the 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*

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.

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 **"…more"** tab under **"Led"** Tab,
c. We will be utilising the **"K_Bit"** Tab,
d. We will be utilising the **"Images"** tab under **"Advanced"** tab,
e. Download the code to the micro:bit,

Expected Result!

a. The display will show an arrow pointing South then initiate the motors to move forward.
b. Next display will show an arrow pointing North then initiate the motors to move forward.
c. Next display will show an arrow pointing East then initiate the motors to move left by setting both motors.
d. Next display will show an arrow pointing West then initiate the motors to move right by setting both motors.
e. Next display will show an arrow pointing East again then initiate the motors to turn left by using pre-set variable.
f. Next display will show an arrow pointing West again then initiate the motors to turn Right by using pre-set variable.
g. Now the display will an upside down heart and stop all movement.
h. This above cycle will then be repeated.

Figure 1

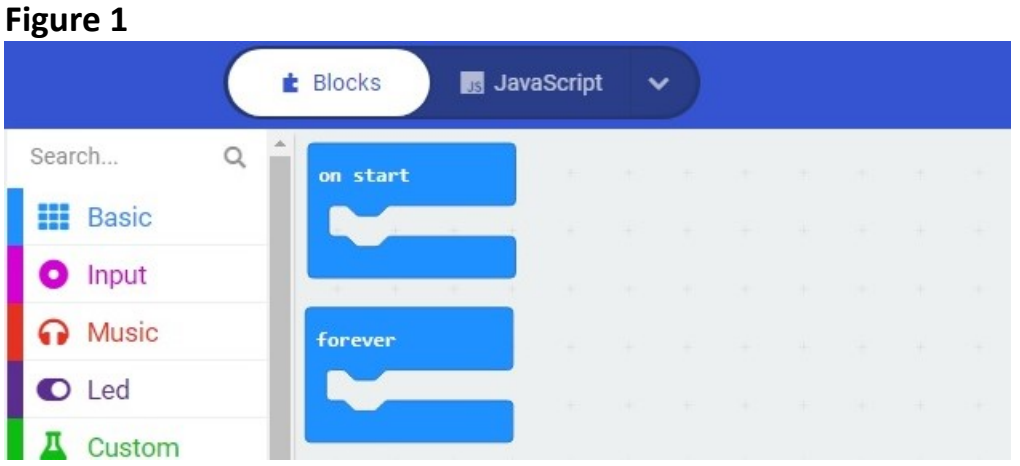
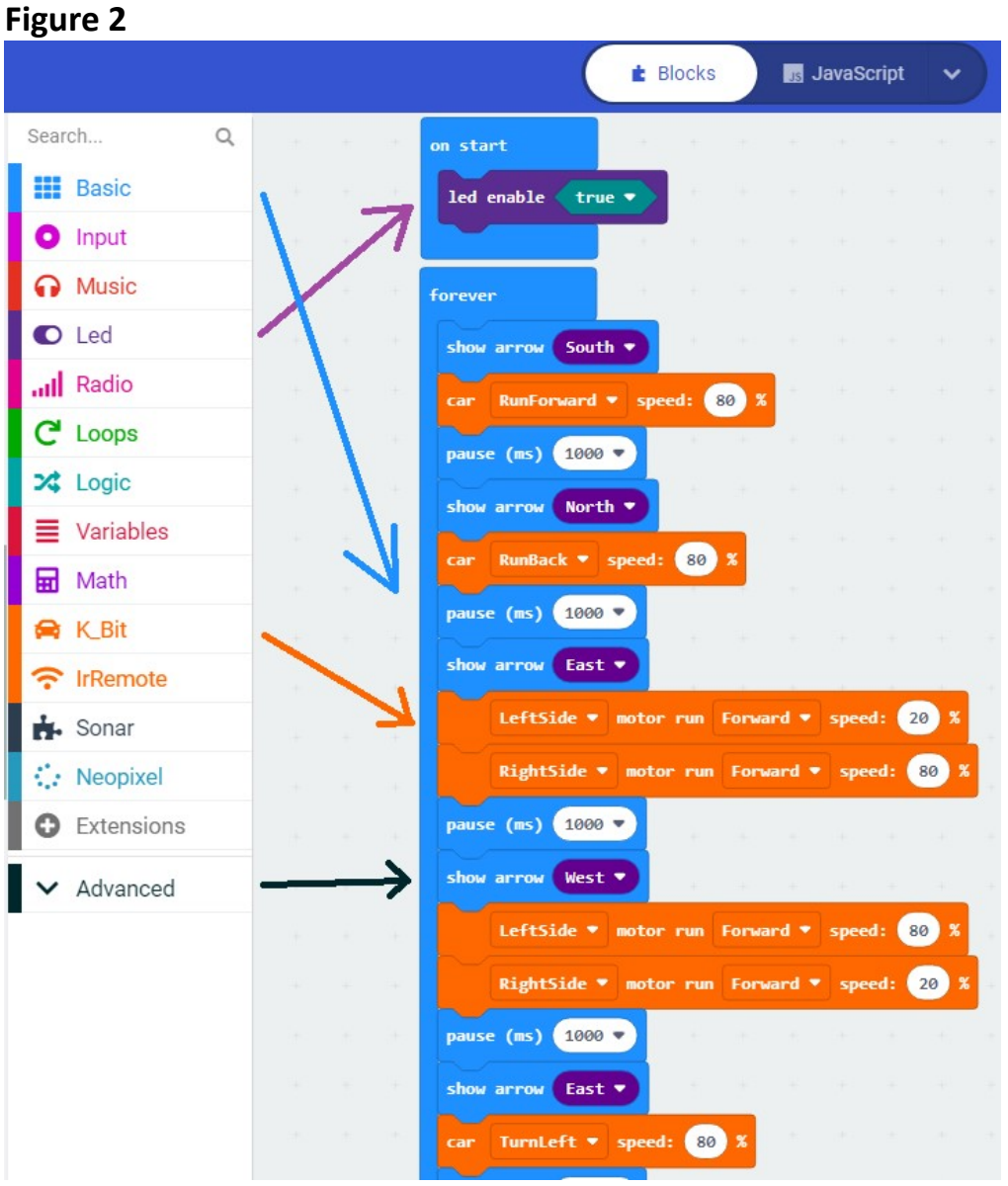


Figure 2



Example Robot Motor Drive Experiment 1 can be found at
https://makecode.microbit.org/17351-85940-06459-72277

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