Introduction to Micro:bit

CODERS CS Team

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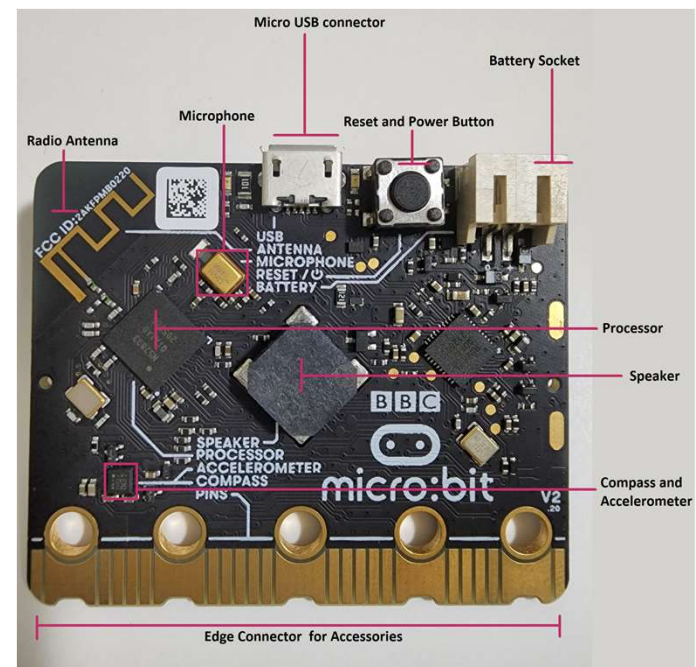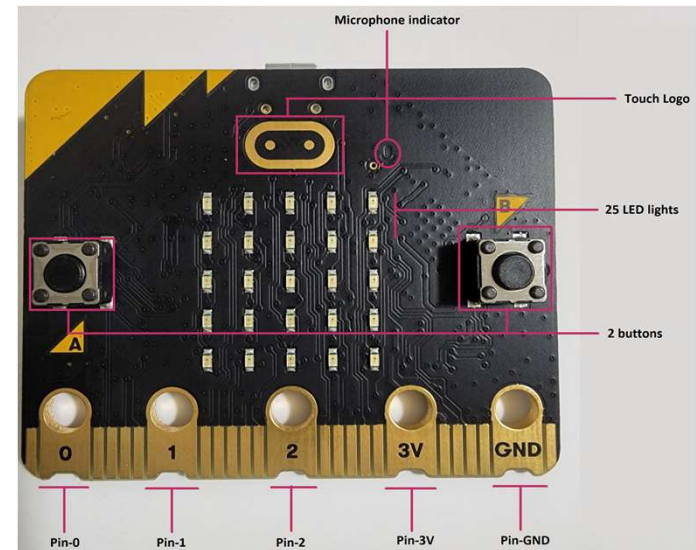

https://microbit.org/

Unpacking the Micro:bit

Micro:bit Components and Capabilities

- **LED Display**
- **Speaker**
- **Buttons**
- **Microphone**
- Accelerometer
- Compass
- Temperature Sensor
- Light Sensor
- Touch Sensor
- **Radio**

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Connecting to the Micro:bit

Connect micro:bit to a computer directly using a <mark>USB-A to micro-USB</mark> cable.

1. Plug small connector of micro-USB cable into the micro:bit USB connector.

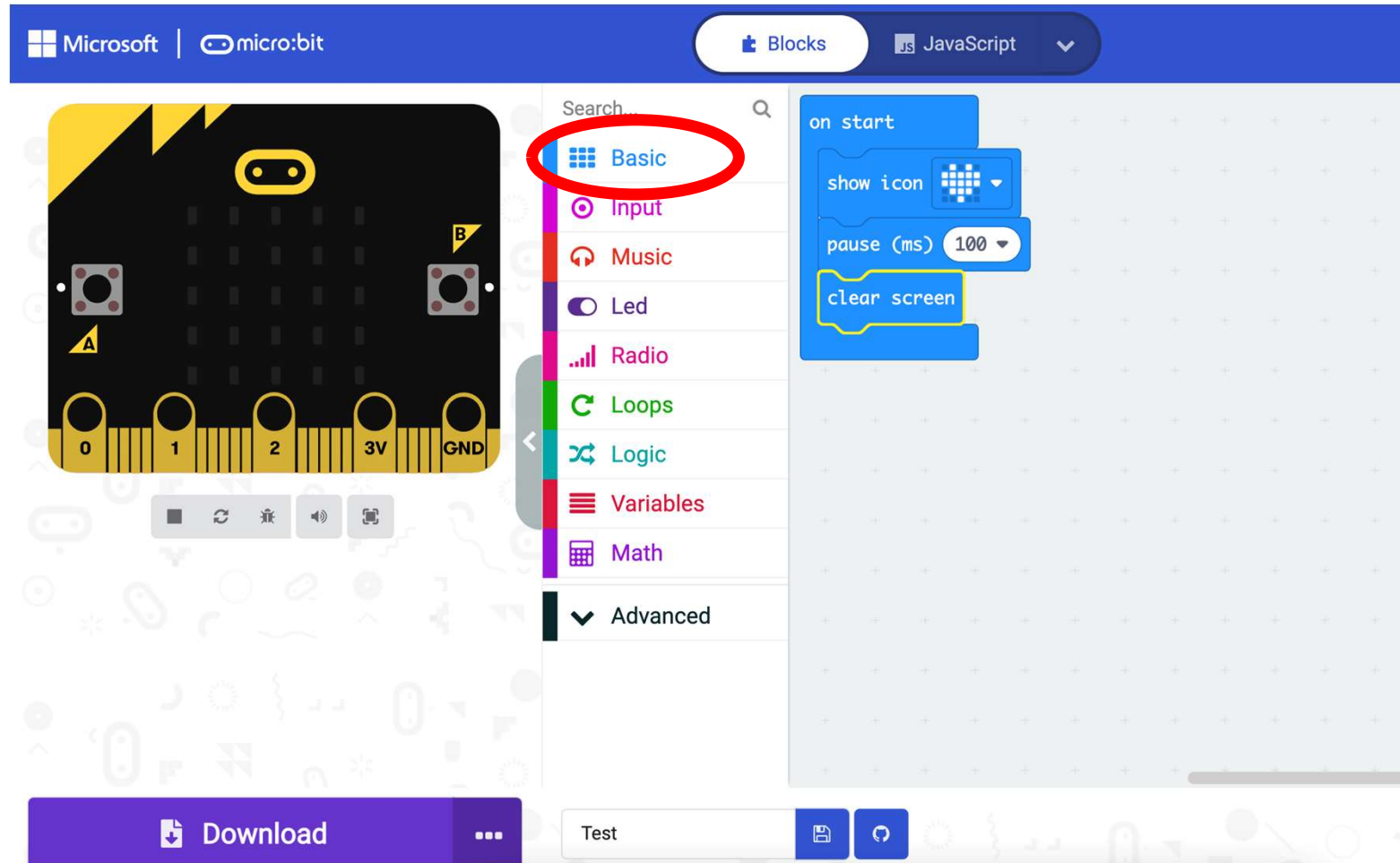2. Plug USB type A connector into an open USB port on the computer.

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Let us code!

1. Open Google Chrome web-browser
2. Navigate to https://makecode.microbit.org/
3. Select "New Project" and type in a name for your project, e.g. "My First".


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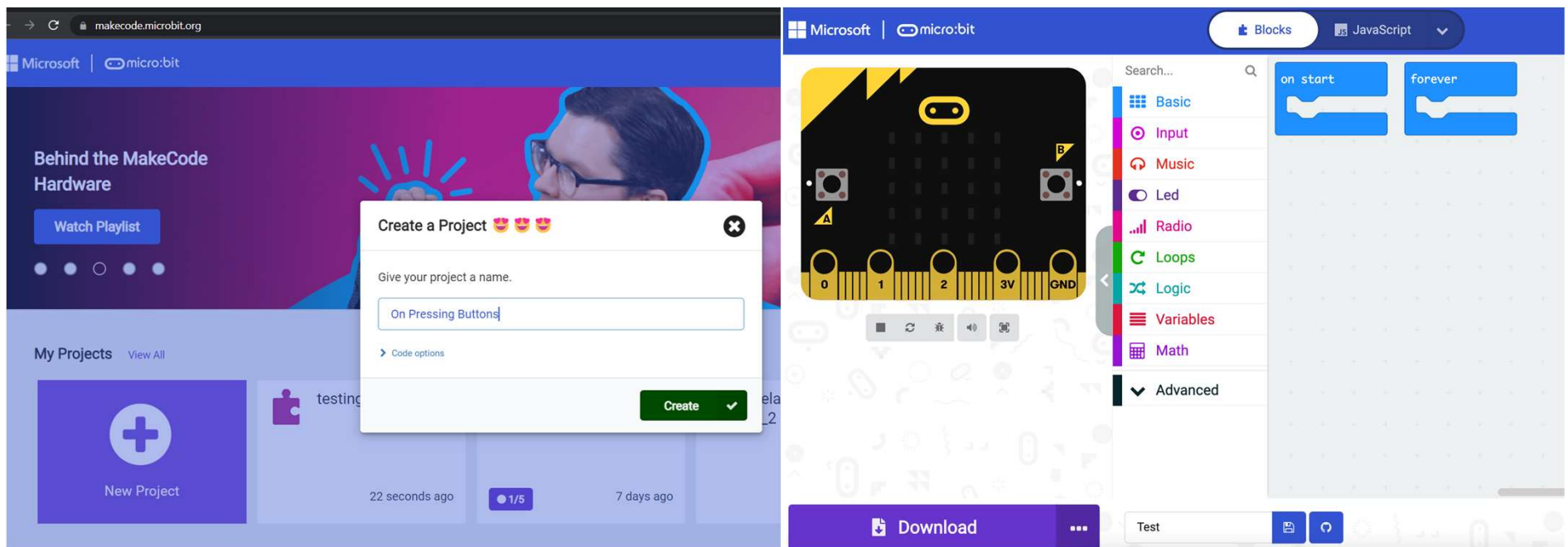
Micro:bit - Let us code!
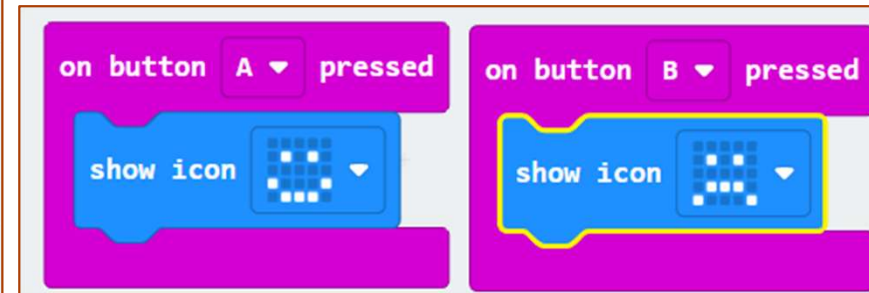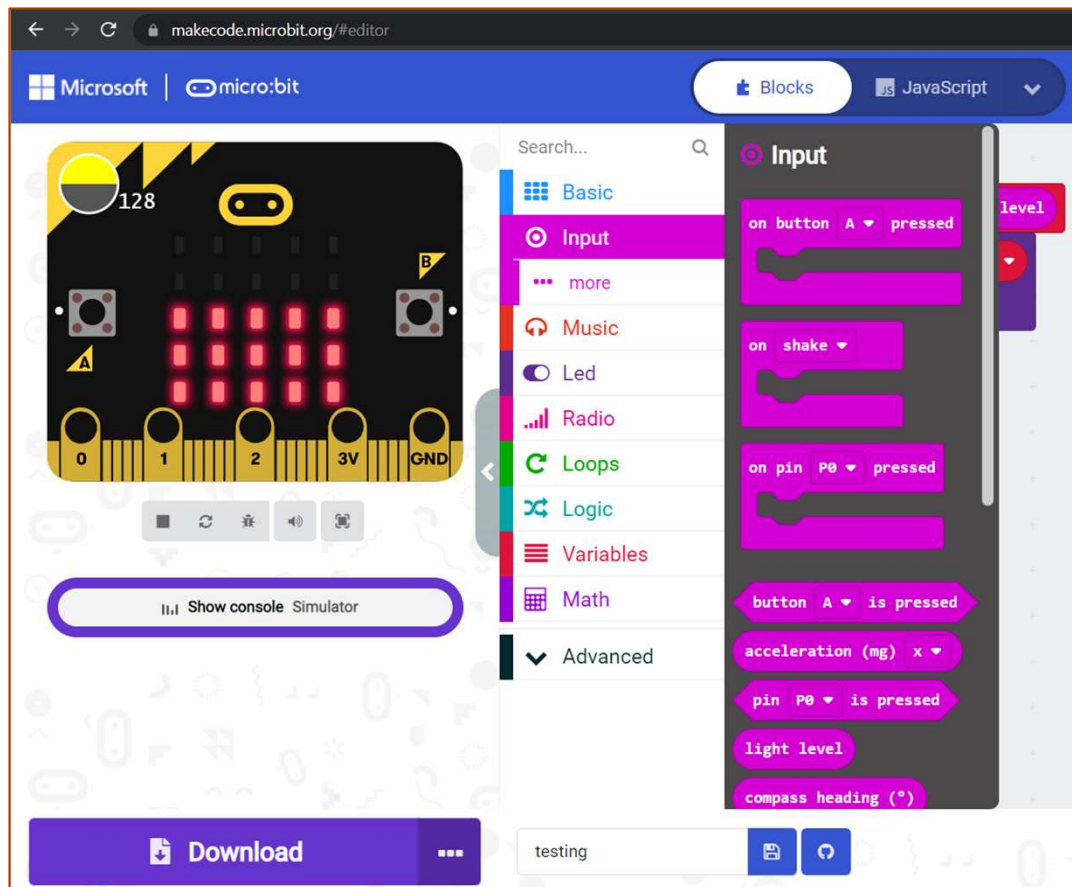
Flashing Program: Direct Flashing

1. From your project window, click on the three dots next to Download and select "==Connect Device==".

2. Click "next" twice and select your micro:bit.

3. Once connected, click the "==Download==" button.

4. Your code will be sent to the micro:bit and the amber light on the back of the micro:bit will be flashing while the download is in progress.
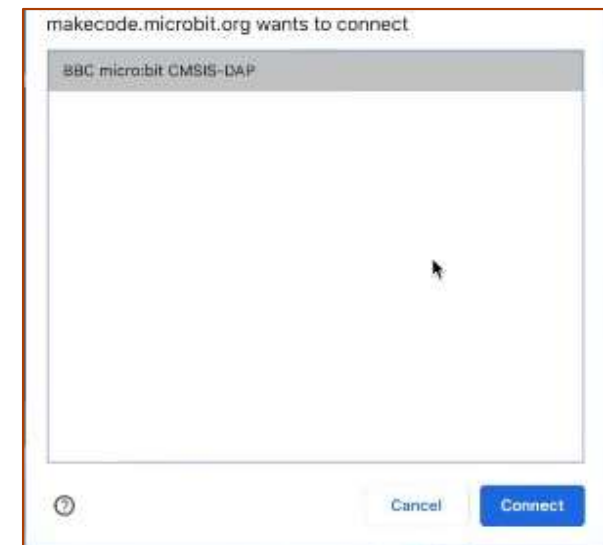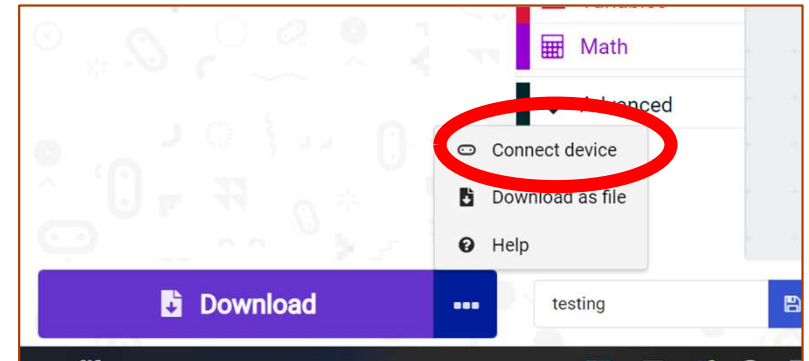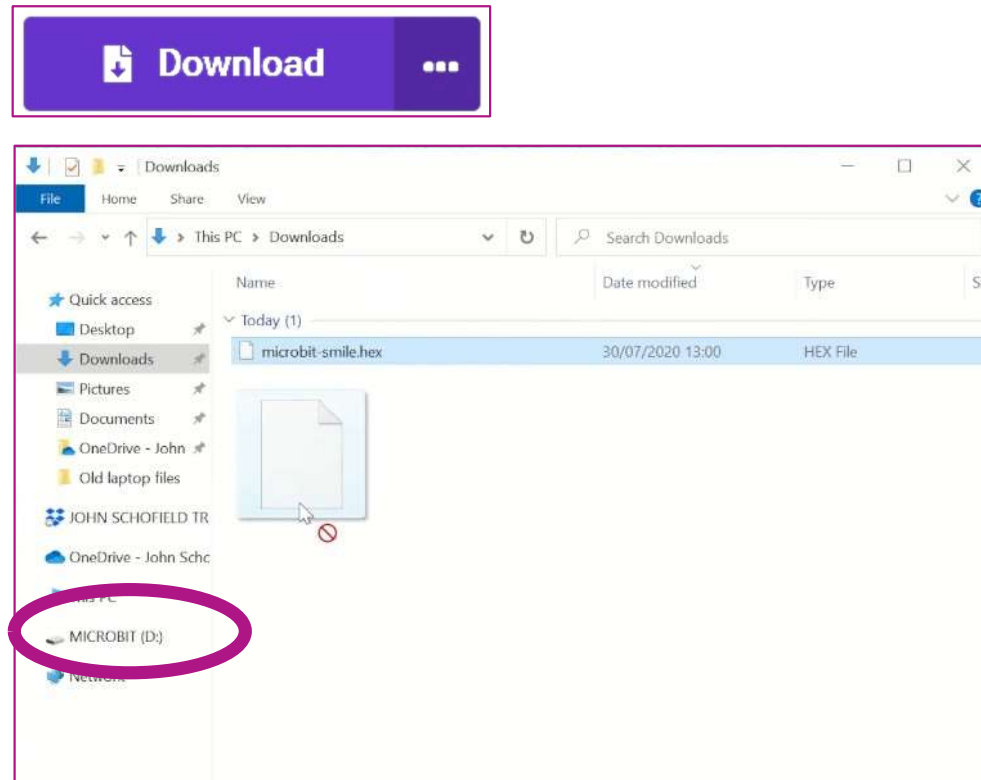
Activity-1: Emotion Badge

Flashing Program: Drag and Drop

1. Click "Download" and save your code as a <mark>.hex</mark> file in your computer.

2. Drag and drop the .hex file to the micro:bit drive shown in your file explorer.
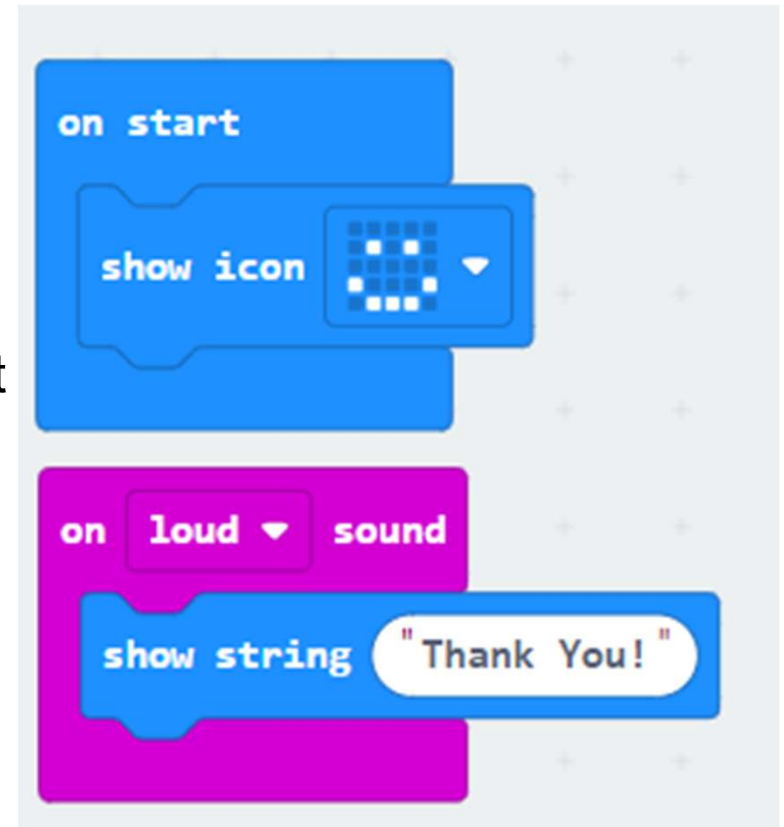
Activity-1: Thank You!

Code the micro:bit to display "Thank You" when a coin is dropped in a jar/box.

Input:
Coin drop sound.

Output:
Display a "Thank you" message on the micro:bit

Activity-2: Radio Message

Goal of this exercise is to send a message to another micro:bit

1. The sender micro:bit sends a message to another micro:bit.

2. The receiver micro:bit displays the message.

3. On start, show an 'X'.

Notes:

- Micro:bit can communicate with another micro:bit wirelessly using radio.

- With a strength of 7, and without many other computers around, the micro:bit signal can reach as far as 70 meters (~ 230 feet).

- Reference: https://makecode.microbit.org/reference/radio

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Activity-2: Code

Sender

Receiver

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Activity-3: Variable and Logic

https://arcade.makecode.com/blocks/variables/var
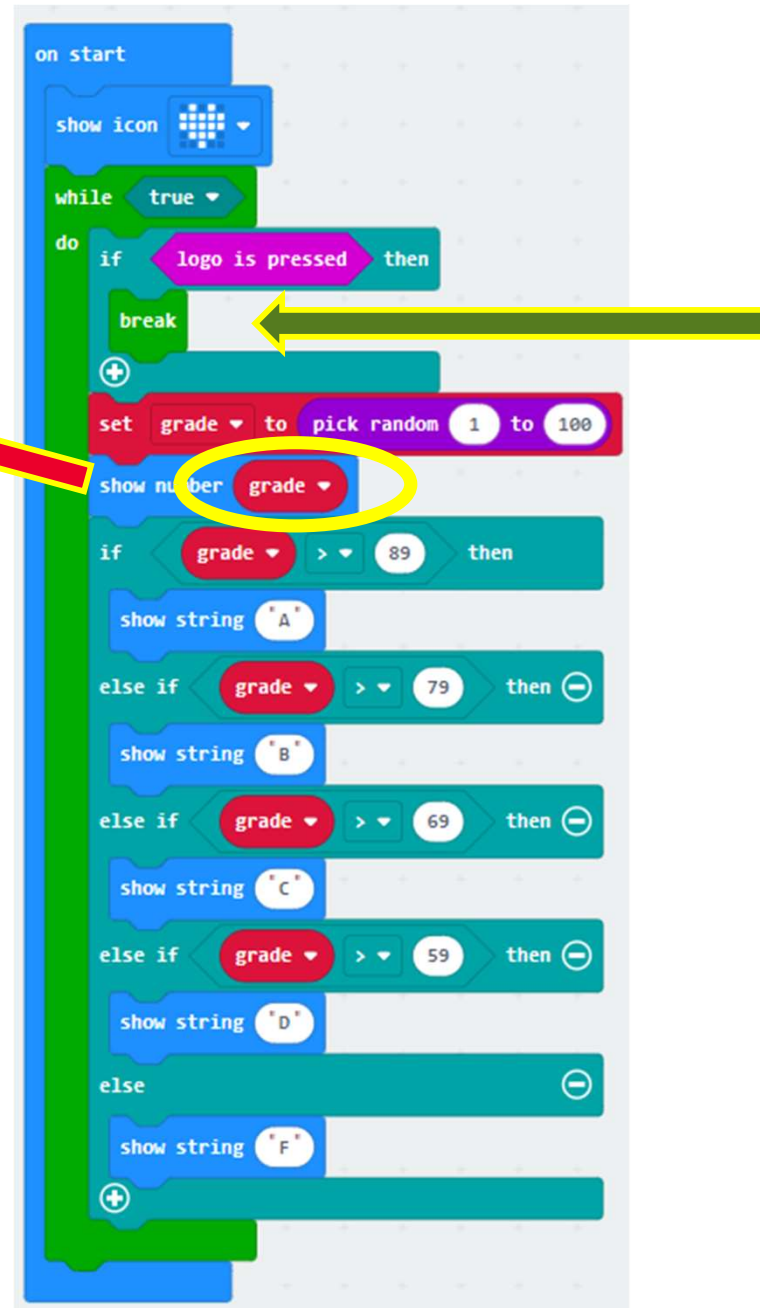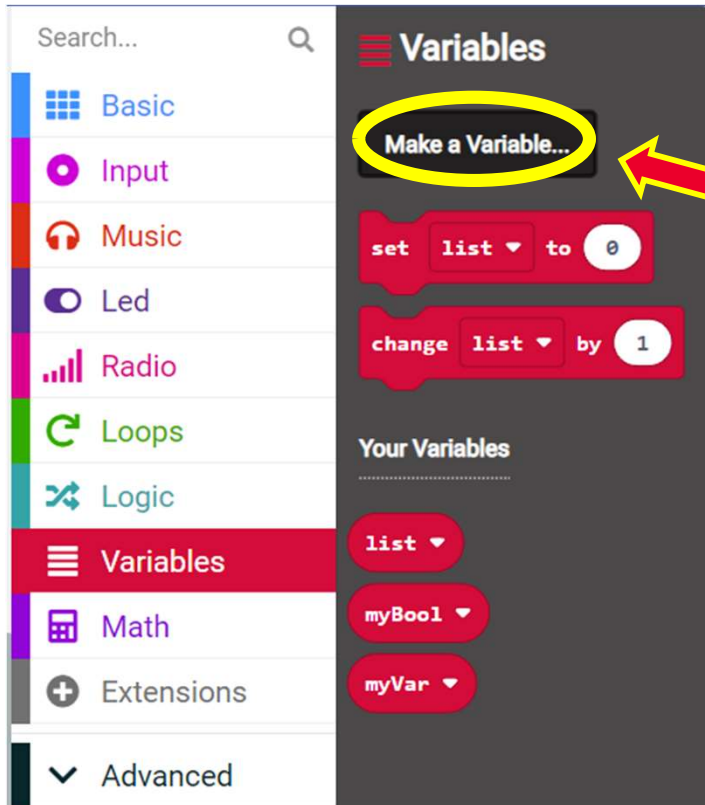
1. Create a new variable called 'grade'

2. Set it to a random value between 1 and 100

3. The code runs forever and waits for the user to press the logo to stop.

4. The value is displayed on the LEDs

5. If the value is greater than 89, display "A"

6. If the value is greater than 79, display "B"

7. If the value is greater than 69, display "C"

8. If the value is greater than 59, display "D"

9. Else, display "F"

Activity-3: Code

Thank You

Any Questions?

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