Lesson 1: The micro:bit

Year 6 – Programming – Sensing

National Centre for Computing Education

Lesson 1: The micro:bit

To create a program to run on a controllable device

- I can apply my knowledge of programming to a new environment

- I can test my program on an emulator

- I can transfer my program to a controllable device
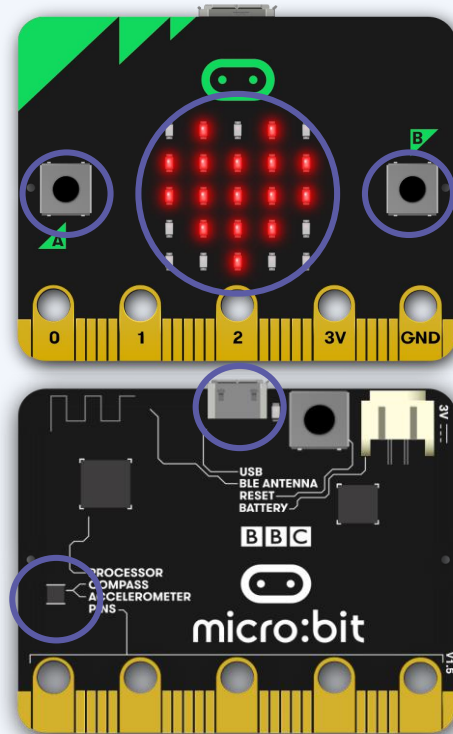
What is a micro:bit?

The micro:bit is a tiny computer.

You can write programs for the micro:bit on your computer and then transfer them to the micro:bit to be run.
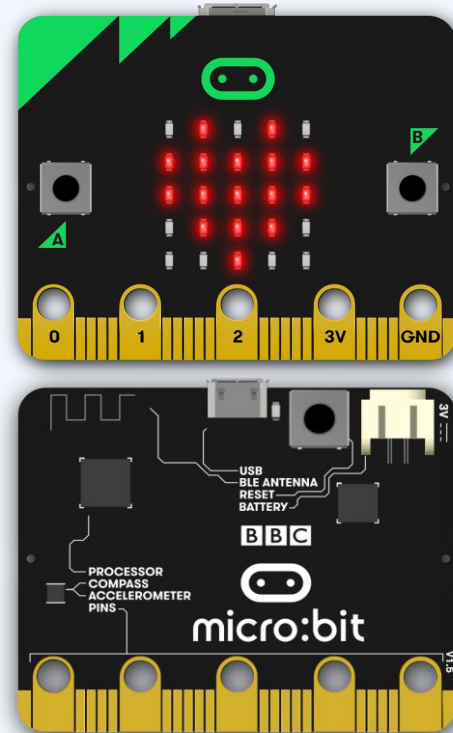
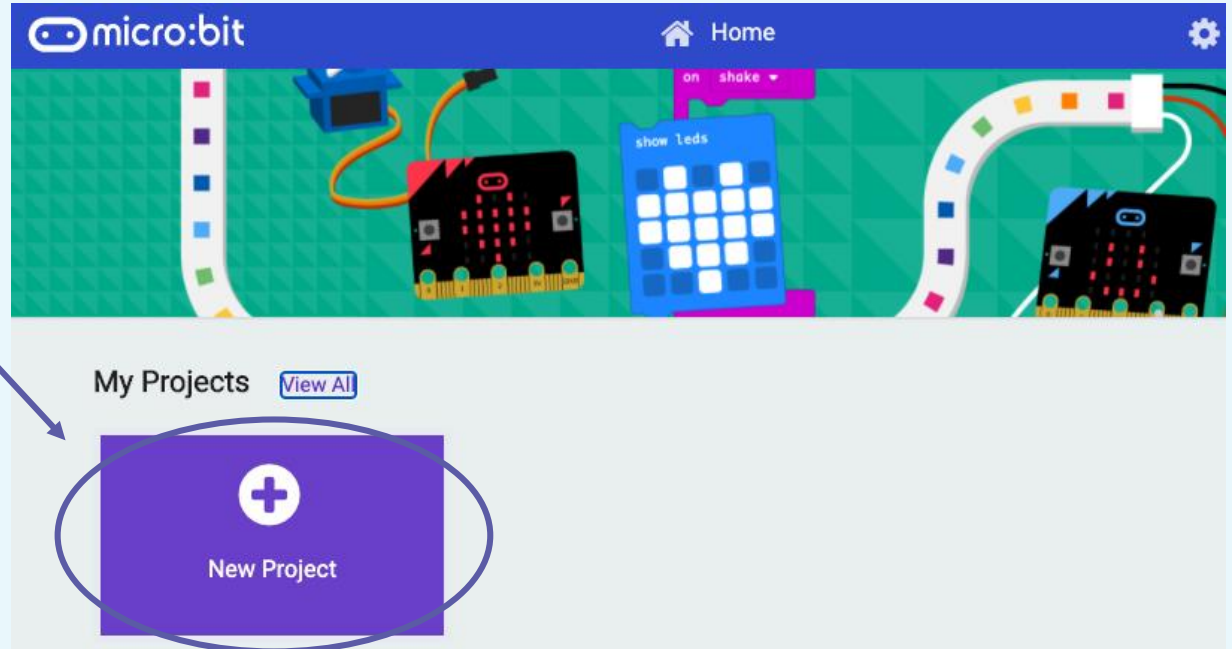# Parts you will be using – can you find them?

1.   A and B buttons

2.   LED display

3.   Accelerometer and compass

4.   USB port to connect to a

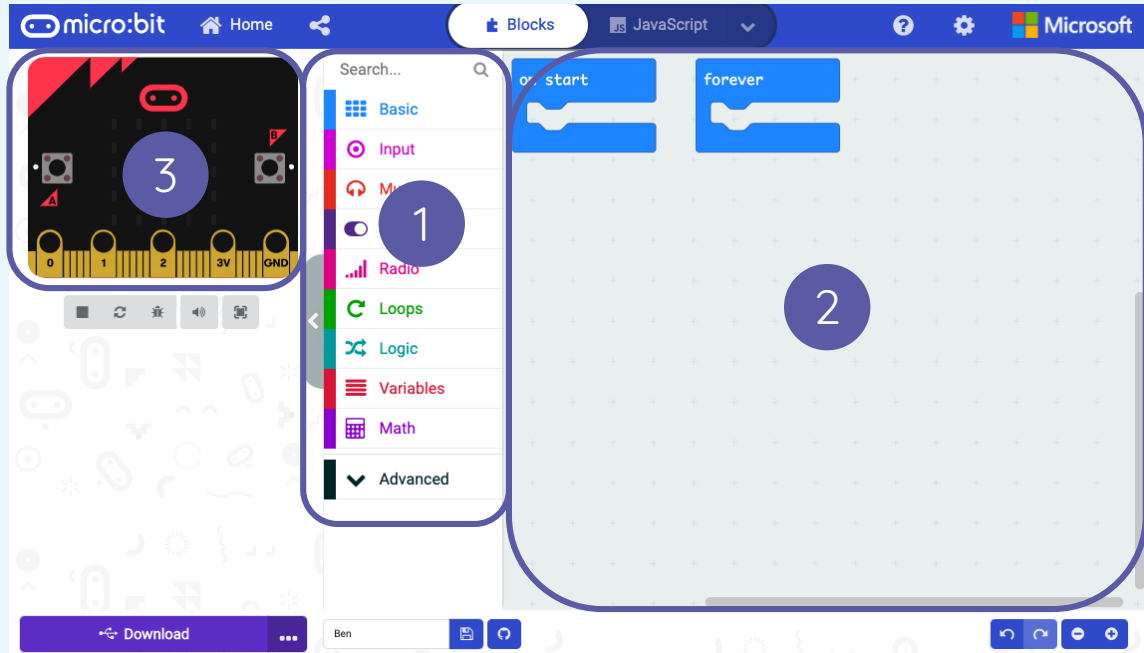computer

The micro:bit programming environment

Go to makecode.microbit.org

Click on 'New project'

Name your project

The micro:bit programming environment

1. Programming blocks - choose your blocks

2. Programming area - place your blocks

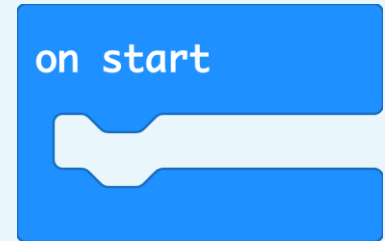3. Emulator - a simulation of a physical micro:bit where you can test your code

Explore the environment — does it look familiar?

Your first micro:bit code
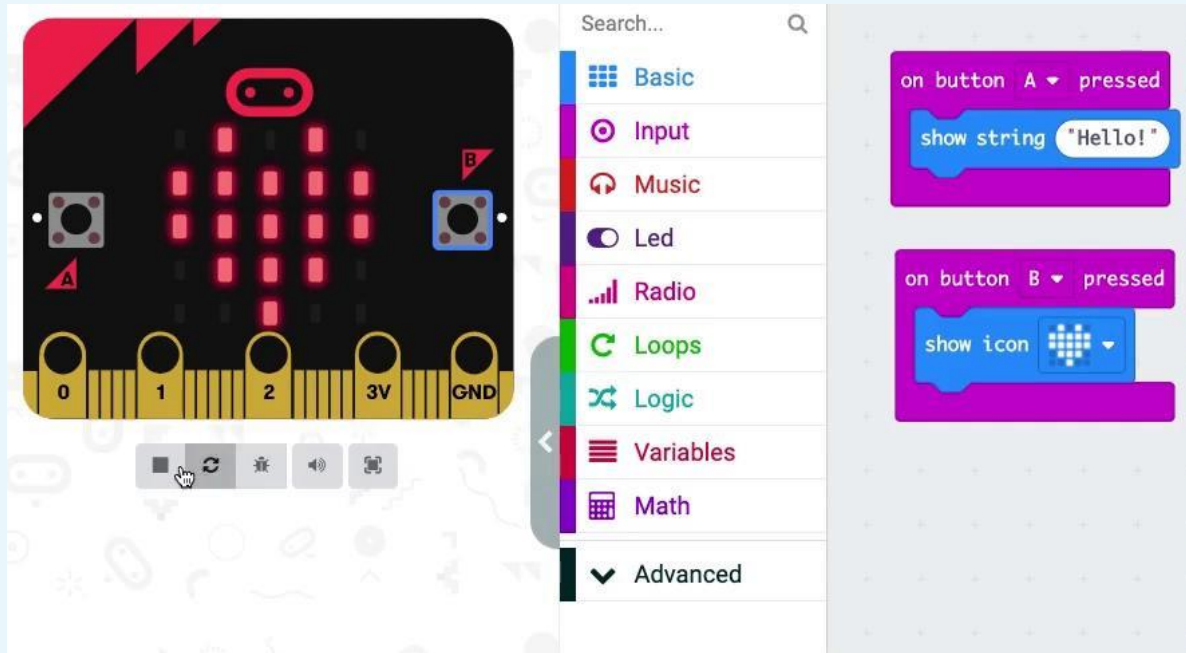
Use the **Basic** blocks to:

1. Display an image on the LEDs
2. Display a piece of text
3. Combine an image and text to make a sequence

You will need to place your code inside the `on start` block:

on start

Check your code as it runs on the emulator.

Test your program using the emulator

The emulator lets you test your code before you flash it to your micro:bit.
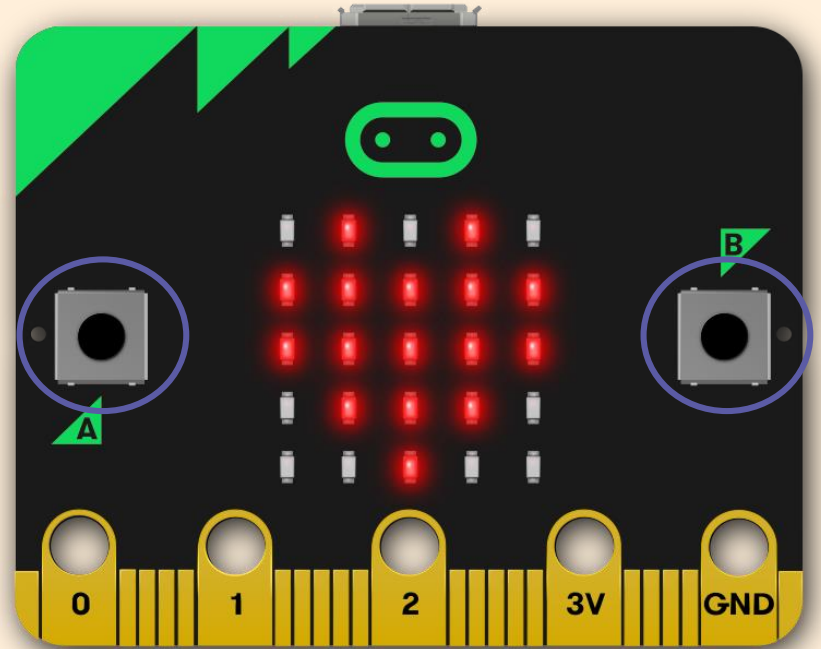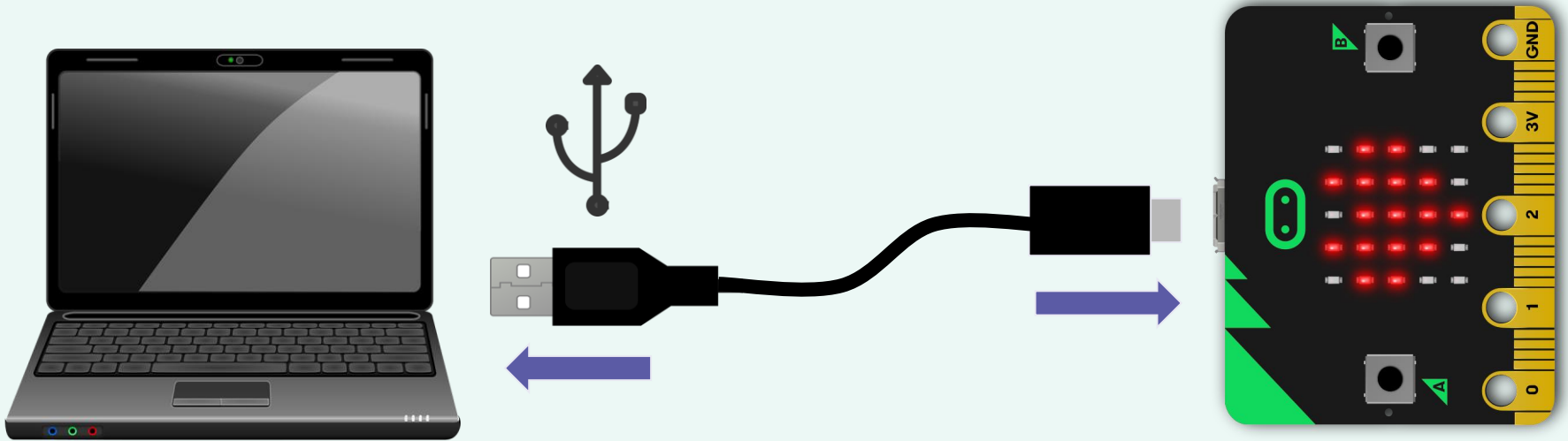
Using inputs

Algorithm:

When button A is pressed, show the message "Hello" three times.

When button B is pressed, show a heart symbol.

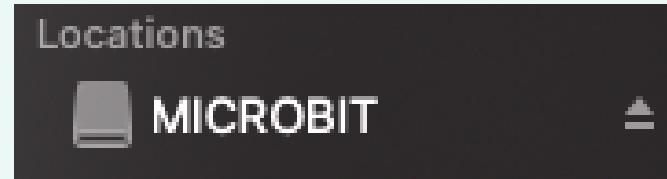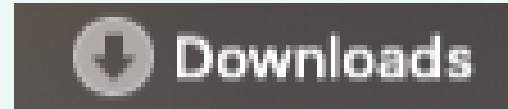Test your program on the emulator.

Running code on a micro:bit

Connect the micro:bit to your computer using the USB cable.

Flashing your program

1. Click on 'Download'

2. Locate the file in your 'Downloads' folder

3. Copy the file from the folder to the MICROBIT drive

4. Run the program on your micro:bit

Change your program

The micro:bit will only run code which has been downloaded.

If you change the code in the editor, you need to download it again on to your micro:bit.

Try changing what each button does in your program, then download it again on to your micro:bit.

Input, process, output

The buttons can be used to _____ an instruction to the micro:bit.

A _____ is carried out on the micro:bit.

The _____ can be displayed on the LEDs.

INF   S   'UT

Accelerometer – input, process, or output?

The accelerometer is a sensor that detects movement.

Why do these devices need to detect movement?

Think, pair, share.

How confident are you? (1–3)

- I can apply my knowledge of programming to a new environment

- I can test my program on an emulator

- I can transfer my program to a controllable device

3 – Very confident

2 – Unsure

1 – Not confident

Next lesson

In this lesson, you…

Familiarised yourself with the micro:bit as an input, process, output device

Created and flashed a program to the device

Next lesson, you will…

Look at how selection can be used to direct the flow of a program in a micro:bit project