

## Computing - Summer - Year 6

### Programming with a micro:bit

This term's eSafety focus is to know how to respond to unfamiliar online safety scenarios.

Children will develop their programming skills further using a micro:Bit.

#### In this unit children will:

- **eSafety** - develop confidence in their ability to act appropriately when confronted with unfamiliar situations involving technology and the internet.

Learn that the micro:bit:

- can be programmed
- has input sensors including accelerometer, thermometer, compass and light sensor.
- can make sound, and send messages using the radio feature.

Programming is completed in an online editor - <https://makecode.microbit.org/>

Write algorithms with clear instructions

Test and debug algorithms

#### Prior Learning

**eSafety is taught in every year group.**

**Year 1** –Scratch Jnr

**Year 2** - Intro to programming / Beebots

**Year 3** - Programming with Logo – Part 1

**Year 4** - Programming with Logo – Part 2

**Year 4** - Intro to Programming with Scratch

**Year 5** - Programming with Scratch – Part 2

**Year 6** - Programming with Scratch – Part 3

#### Cross Curricular Links to Scratch

Maths - direction, movement and position,  
geometry, coordinates

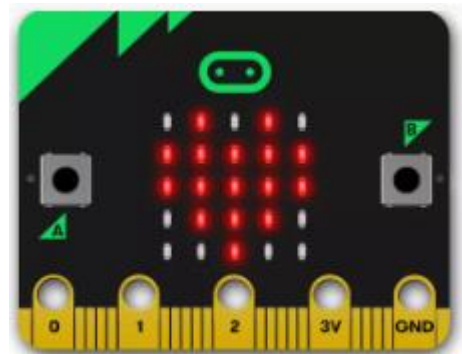
#### Key Vocabulary

**micro:bit** is a tiny computer that makes coding tangible (you can touch it!) and promotes digital creativity.

**.hex file** - a version of your program that your micro:bit can read

**emulator** – it acts like the micro:bit but is just on the screen.

**LED**, or light-emitting diode - an output device that gives off light, it has a display of 25 LEDs for you to program.

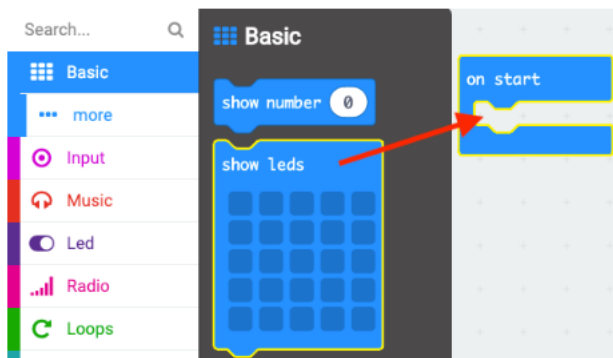


An **accelerometer** is a motion sensor that measures movement. The accelerometer detects when you tilt it left to right, backwards and forwards and up and down.

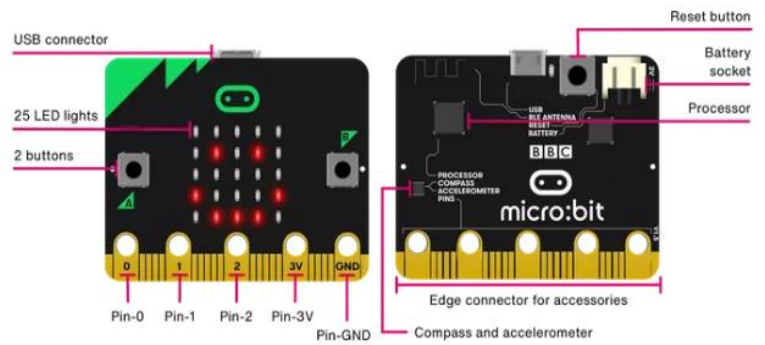
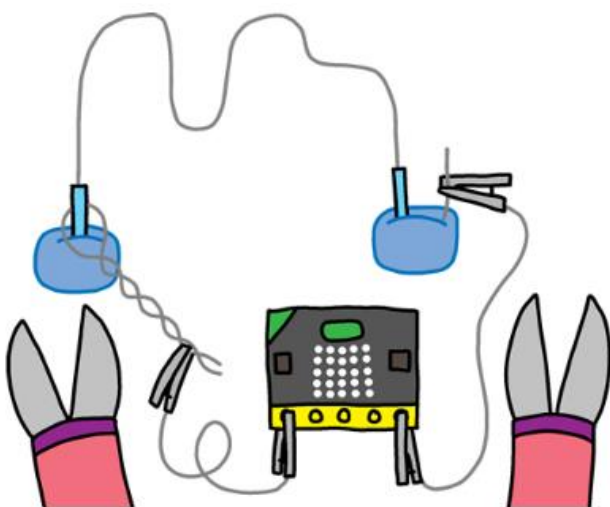
## Key Knowledge

When you've created your program in the online editor, transfer it to your micro:bit to make it run independently of your computer. You can even unplug your micro:bit from the computer, attach a battery pack, and your program still runs!

It uses blocks, just like Scratch, to build the programme.

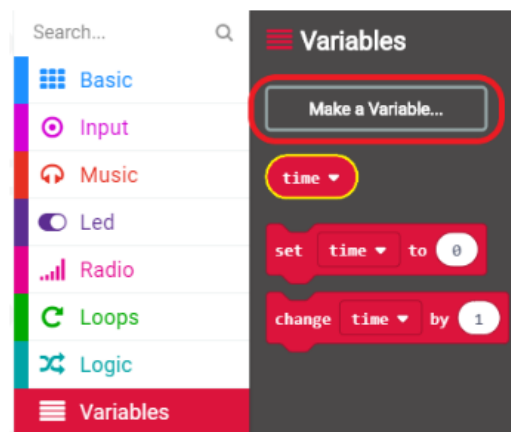


Pins can be added that allow games to be made.



These are the main features of a micro:bit.

Just like in Scratch, it uses loops and variables.



## Key Questions

- Can you write a programme that uses button A and B?
- How can you send a message to another micro:bit in your classroom?
- Can write a programme that counts your steps?
- How do I make a programme that create a dice which produces random numbers?