Coleman Primary School
Year 4 Autumn 2 Knowledge Organiser
Computing—We are makers

You will learn...

- about the input-process-output model of computation
- to program using the MakeCode block environment
- to test and debug programs you write

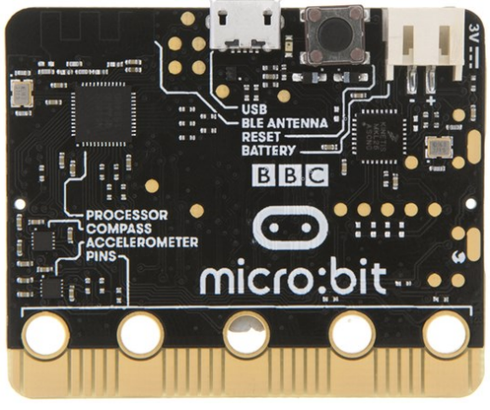
Key Vocabulary: We are makers

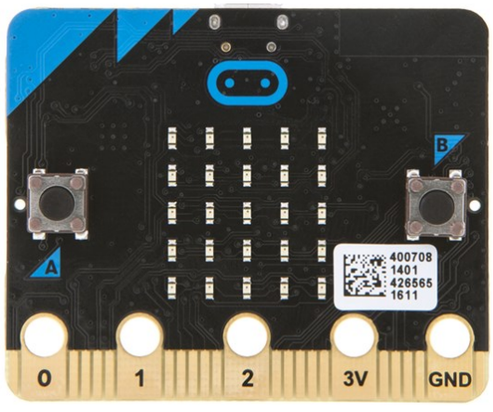
accelerometer: hardware component providing data on changes in motion	**object code:** a version of the program converted into detailed instructions to be followed by the computer
algorithm: a sequence of precise steps or instructions to achieve a goal	**simulator:** software allowing one computer system to behave like another
MakeCode: block– and text-based editor from Microsoft	**source code:** the program we write
micro:bit: simple, single board programmable computer	**variable:** lets computer programs store, retrieve or change simple data

micro: bit inputs and outputs

The **micro:bit** is a small programmable computer. It has various inputs and outputs that it can use as part of its programs.

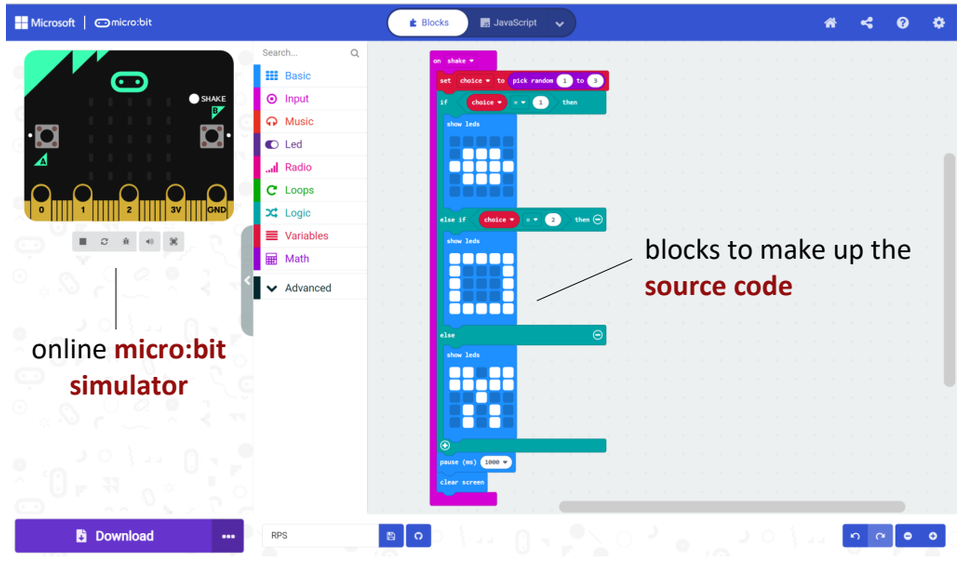
Inputs: buttons (A and B), an **accelerometer**, a compass, a magnetometer (detects if a magnet is near), a tiny radio receiver.





Outputs: a 25 pixel LED display, a tiny radio transmitter.
The edge connectors can have additional inputs or outputs attached to them.

MakeCode block environment



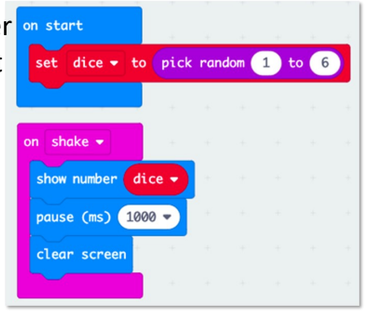
On the **MakeCode** website, we can use blocks to make the **source code**. It is translated into **object code** when it is transferred to the **micro:bit**. Alternatively, we can test our **algorithm** on the online **simulator**.

Debugging and testing

We will try to test our source code and check it for mistakes or 'bugs'.

This program is meant to show a random number between 1 and 6 when the micro:bit is shaken. It doesn't work – what needs to change?

a) The pause block needs to be longer
b) The clear screen block shouldn't be in the on shake event
d) The set dice block should be in the on shake event



Computing Skills Progression

In Year Three you learnt to...

- design, write and debug programs
- use sequence in programs; work with various forms of output

In Year Four you will...

- design, write and debug programs that accomplish specific goals
- use sequence and repetition in programs; work with inputs and outputs