



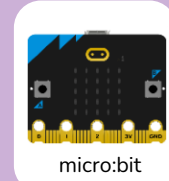
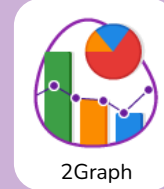
Year 6

micro:bits

Key Learning

- To code a micro:bit to identify materials that are conductors.
- To use a micro:bit to collect step count data and use this data in graphing software.
- To use a micro:bit to collect light level data and use this data in graphing software.
- To use a micro:bit to collect temperature data and use this data in graphing software.

Key Resources



Key Vocabulary

Accelerometer

A sensor that detects movement.

Chart

A diagram that represents data. Charts include graphs and other diagrams such as pie charts and flowcharts.

Data

A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.

Data Logging

Collecting and recording data over a period of time

Electrical Circuit

A loop in which an electrical current can flow. A micro:bit can have wires connected to its pins to make a circuit.

Input

Information going into the computer. Can include button presses or information gathered by a sensor such as movement, light and temperature.

LED

Light emitting diode - the micro:bit display is made of 25 LEDs.

Output

The computer sending information back to us e.g. sound or lights on an LED display.

Pins

Small connection areas on the micro:bit used to communicate with external devices.

Sensor

An input that senses things in the real world, such as movement, temperature and light levels.

Simulation

A computer model of something in the real world.

Sleep

In Free Code micro:bit, a sleep command can be used to delay when the next piece of code is executed.

Variable

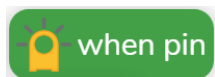
A named area in computer memory. A variable has a name and a value. The program can change this variable value. Variables are used in programming to keep track of things that can change while a program is running.



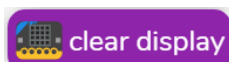
Year 6

Graphing

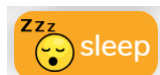
Key Images



Event Command



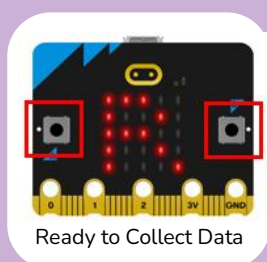
Output Command



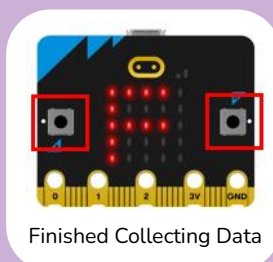
Control Command



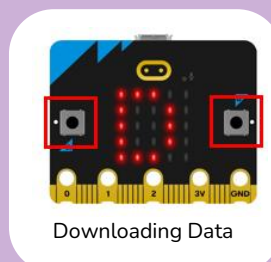
USB Transfer



Ready to Collect Data



Finished Collecting Data



Downloading Data

Key Questions

How can a micro:bit be used with 2Graph to collect environmental data?

The micro:bit has temperature, light, sound and movement sensors. It is possible for the micro:bit to collect environmental data using its sensors. In order to do this, the micro:bit needs to be set-up in 2Graph, then any data it collects can be downloaded to 2Graph and presented on a graph,

What is data logging and how does it help us?

Data logging is collecting, measuring and presenting data over a period of time. Data collected over time can help us track how things change and help us make decisions.

How does a micro:bit detect inputs by using pins?

If the micro:bit detects a circuit between a pin and the GND pin, it recognises this as an input. For example, someone might use crocodile clips to create a circuit between pin 1 and pin GND. Code can be written to count the number of inputs detected and produce outputs as well.

How can outputs be coded when a pin is detected?

The 'When pin' will run code that is nested inside it when the micro:bit detects a circuit on a selected pin. Output code such as 'show image' and 'play music' can then be triggered.