



Year 5

micro:bits

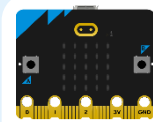
Key Learning

- To create a micro:bit story telling game.
- To code a micro:bit to measure temperature and produce different outputs based on this.
- To code a micro:bit to simulate a magic 8 ball.
- To create an automatic scoreboard display using a micro:bit.

Key Resources



Free Code
micro:bit



micro:bit

Key Vocabulary

Data

A set of facts or information that helps us learn something or make decisions.

Logic

How computers make decisions based on whether things are true or false.

Selection

A conditional decision command. When selection is used, a program will choose which bit of code to run depending on a condition.

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.

Pins

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

Sleep

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

Gesture

A type of input where the micro:bit is moved in different ways such as tilting, dropping and shaking.

Random

Generating values that are unpredictable within a specified range or set. In programming, this is used to introduce variability and unpredictability into the code's behaviour.

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.

If Statement

A computer uses an 'if' statement to decide which bit of code to run. If a condition is true, then the commands inside the block will be run.

Repeat

This command can be used to make a block of commands run a set number of times or forever.



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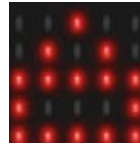
Key Images



USB transfer



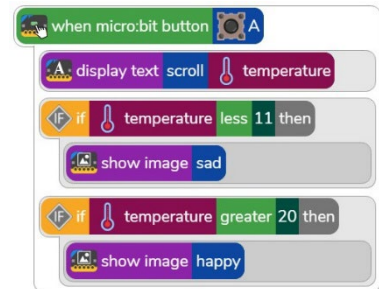
Simulator



LED Screen



Using a variable to keep track of goals scored



Sensing temperature and using If statements to produce different outputs based on temperature.

Key Questions

What sensors does a micro:bit have?

Accelerometer: This measures forces in three dimensions, to determine the micro:bit's orientation.

This can be used for science experiments, games, and alarms.

Thermometer: This measures the ambient temperature in the environment it is in.

Light sensor: The micro:bit's LEDs can act as an input device to measure the amount of light falling on them.

How can the microbit respond to external circuits?

The micro:bit has pins that can be used to create electrical circuits and physically connect the micro:bit to external things. Pins 0, 1 and 2 are GPIO pins (general purpose input and output) they can be connected to crocodile clips, foil, headphones and other equipment. The 3V pin can power accessories.

How can sensors, code and outputs work together?

When using a micro:bit, a user can program the device to sense the environment around it. When particular environmental conditions are met, such as the accelerometer detecting movement. Code written can

then trigger an output response, such as displaying a message on the LED screen.