COMPUTING & ICT—Year 07 Knowledge Organiser: Micro:Bits

Summary

A Micro:bit is a small, programmable computer designed to make learning about coding and electronics fun and easy. It's about half the size of a credit card and comes with a range of features like LEDs, buttons, sensors, and Bluetooth connectivity.

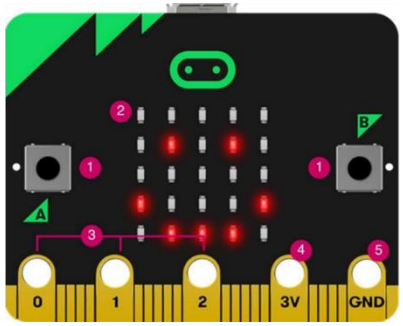
With a Micro:bit you can create all sorts of cool projects, from simple games to controlling robots. You program it using block-based coding languages like Scratch or more advanced ones like Python, making it accessible for beginners and more experienced users.

The Micro:bit helps you learn important skills in science, technology, engineering, and math (STEM) by allowing you to experiment and see your ideas come to life. It's a great way to get hands-on experience with technology and understand how the devices around us work.

Students work through tasks learning to manipulate code that will display different items on the Micro:bit's screen. Students will also

Key features of the micro:bit

- On-board motion detector or "accelerometer" that can detect movement and tell other devices you're on the go. Featured actions include shake, tilt and freefall.
- A built-in compass or "magnetometer" to sense which direction you're facing, your movement in degrees, and where you are.
- Bluetooth Smart Technology to connect to the internet and interact with the world around you.
- Five Input and Output (I/O) rings to connect the micro:bit to devices or sensors using crocodile clips or 4mm banana plugs.



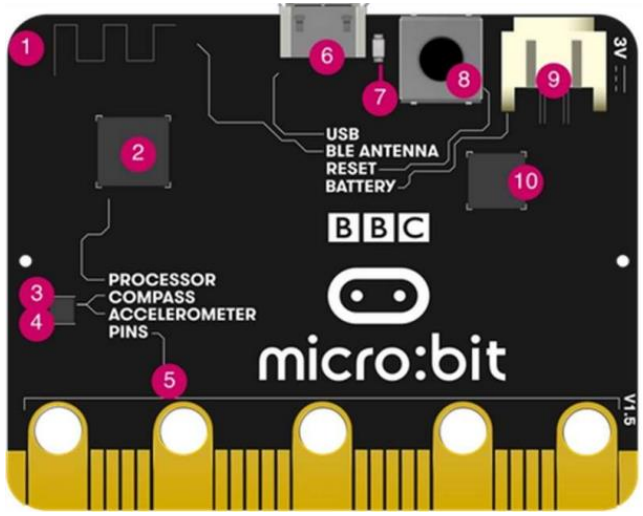
1. Buttons
2. LED display & light sensor
3. Pins - GPIO
4. Pin - 3 volt power
5. Pin - Ground

Why should you use a Micro:bit?

- Using a micro:bit in class makes learning to code fun and interactive, allowing students to see the immediate results of their programming on a physical device.
- It is easy to use, with block-based coding for beginners and more advanced options like Python for experienced students.
- The micro:bit encourages creativity and problem-solving as students can build and experiment with various projects, from games to simple robots.

Micro:bit parts

1. Radio & Bluetooth antenna
2. Processor & temperature sensor
3. Compass
4. Accelerometer
5. Pins
6. Micro USB socket
7. Single LED
8. Reset button
9. Battery socket
10. USB interface chip

Key Vocabulary

Accelerometer	An input device within the Micro:bit to control or alter programs by tilting or moving the device.
Algorithm	A set of instructions to be followed to complete a given task or solve a problem.
Buttons	Input devices used within the Micro:bit to control or alter programs whilst running.
LED (Light emitting diodes)	(LEDs) – used on the Micro:bit as a screen in a 5x5 grid to display information.
Micro:bit	The systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.
Processor	Receives inputs from the computer and produces outputs.
Program	A sequence of instructions used by a computer.
USB	The form of power supply used by the Micro:bit – power is transmitted from the computer via a micro-USB cable.