

Year 9 Computer Science Knowledge Organiser

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TOPIC 1: Microbits

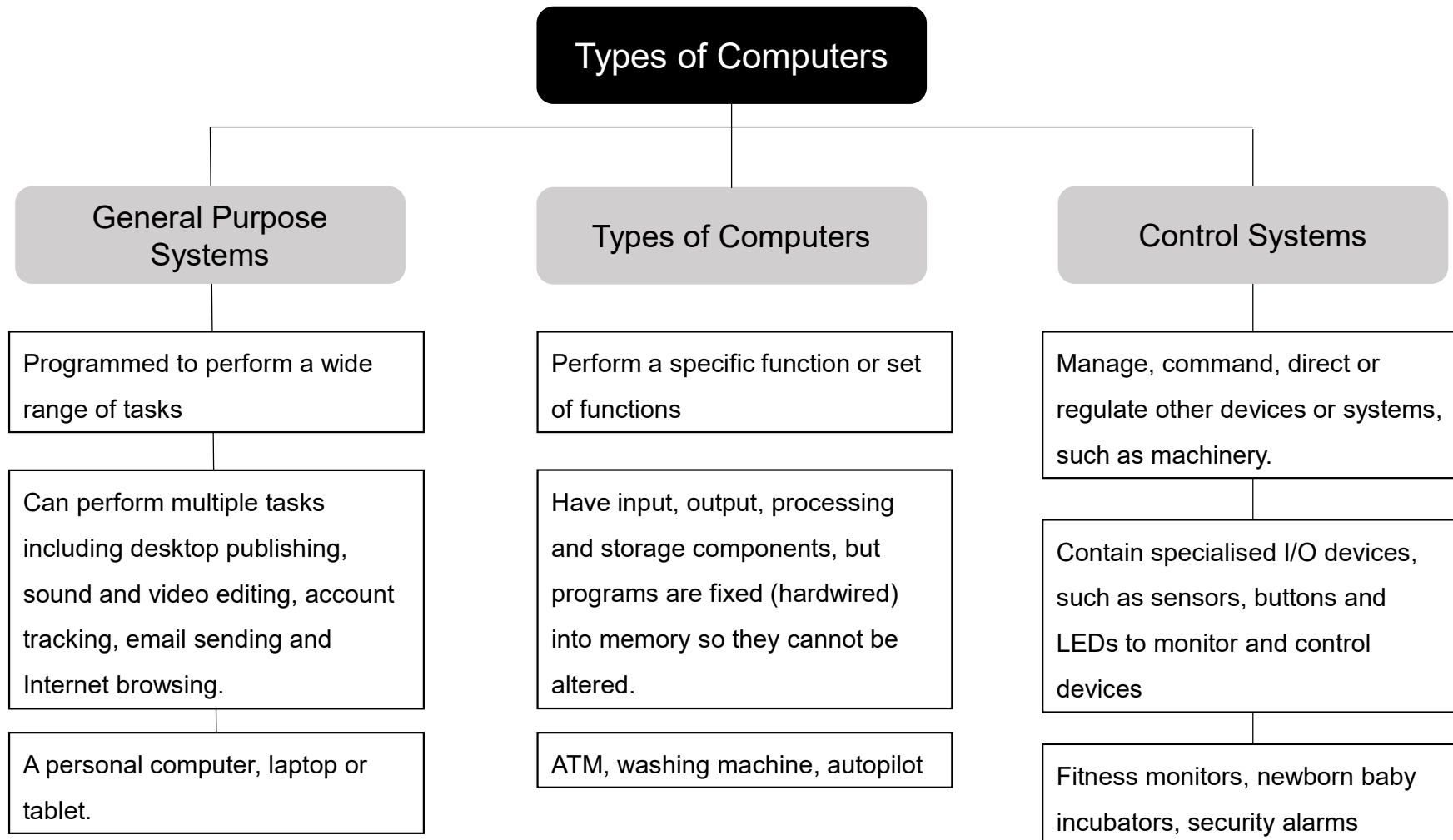
In this topic you will study the hardware components that make up the BBC Microbit.

You will learn how to program them and then design and create your own project using the Microbit and external sensors.

You will consolidate your knowledge of research skills and make a professional looking presentation.

Element	Description
CPU	The “brain” of the microbit is the Nordic processor
RAM	Random Access Memory
ROM	Read Only Memory
LED Matrix	The 5 x 5 grid of LED lights which provide output
Motion Sensor	Compass and accelerometer to measure orientation and movement of the microbit
Accelerometer	Measure tilt and whether the Microbit is being shaken (see On-shake function)
Antenna	Bluetooth and radio functions allow connection to other microbits and hardware devices
Crocodile Clip	Clip on to the input pins to allow external devices such as speakers to be connected to the Microbit
Actuator	A motor attached to the Microbit

TOPIC 1: Types of Computers



TOPIC 2: Scratch 3

In this topic you will further develop your programming skills using graphical based programming.

You will use the online version of Scratch to build on the work you did on Scratch and Scratch 2 in Years 7 and 8.

Scratch 3 Component	What it means
Sprite	The character within your program that is being controlled by commands.
Script	Each script is a group of commands. Each sprite can execute one or more scripts.
Costume	Each sprite can have many costumes. These are found in the purple Looks commands and control the appearance of the sprite.
Stage	Includes backgrounds for the Scratch project and scripts but no motion commands as the stage cannot move.
Clone	A copy of a sprite. Each sprite can spawn many clones.

Terminology	What it means
Iteration	A command that repeats or loops eg. Repeat 10, Repeat until, Forever
Selection	IF ELSE command that selects which programming path to follow
Condition	A condition is either true or false, for example touching colour red. In Scratch these commands have a long hexagon shape – either green or light blue
Broadcasts	A broadcast is a message that is sent by one sprite to other sprites. Upon receiving a broadcast a script can begin execution.
Variable	A value stored by the program that can change. For example, Score

TOPIC 3: HTML Programming

In this topic you will further develop your programming skills using text based programming.

You will learn how to create a professional looking website about a GCSE subject that you are motivated by and will be doing in September.

Keyword	What it means
HTML	Defines the content of webpages
CSS	Cascading Style Sheets are used to describe the layout and formatting of the HTML webpage
Javascript	Programming language used to control the behaviour of webpages

Javascript	What it does
Method	Actions that can be performed on objects
Literal	Fixed value that doesn't change
Variable	Value that changes
Operators	Used to perform arithmetic on numbers
Function	Block of code to perform a particular task
Object	Instance of something consisting of properties and methods
Event	An action performed by the user or browser that can cause Javascript to be executed
Array	Holds many values under a single name