



Year 7 Computer Science - Using Computers



Test Yourself

New message Click new message to create an email

This is where you will type the senders email address – remember it must have an @ symbol and an ending - .com, .co.uk etc.

Email

Attach will allow you to choose a file or files to send to the recipient

Email will be written here

Your must send your message with a sensible subject

Send email to recipient

Social Networking

Definition: The use of websites to interact with friends, family and classmates, or to find people with similar interests

Online Issues	What they mean	How to protect yourself
Cyberbullying	<i>"Bullying others through the use of technology, for example a mobile phone or the Internet."</i> Includes: threats, rumours, identity theft	<ul style="list-style-type: none"> Don't reply, however tempting Block the sender Keep any evidence
Online strangers	People aren't always who they say they are online. Sometimes they might pretend to be your friend or your age when they are not	<ul style="list-style-type: none"> Tell somebody Only add people to your social network who you know offline
Inappropriate content	<ul style="list-style-type: none"> Malicious or personal attacks on others (cyberbullying) Impersonating another person or company without permission Sexually explicit material (nudity, pornography) 	<ul style="list-style-type: none"> Don't post personal details about yourself Make sure your privacy settings are set to high or Friends Only

Keeping Data Safe

Using passwords keeps your data safe

Do NOT:

- Write it down
- Tell anyone
- Use something easy to guess such as your name or date of birth, or a word in the dictionary
- Use the same password for all your online accounts

When creating a password you should:

- Use at least 8 characters
- Use a mixture of UPPERCASE and lowercase letters, numbers and symbols

File Management

It is important to organise your files so saving and searching become faster.

File Name	Is it appropriate?
Stuff.jpg	No. We do not know what the image is off
Homework_2014_Nov.xls	No. We know it is homework from November 2014 but we do not know what it is about
ResearchTaskOn Frogspawn.doc	Yes. We know exactly what our document is about

Our School Network

Every student has their own work area which they can access from any computer in the school. To log into school computers you need to use your personal log on which looks like this - **21brindleyk** – and the password you have created. To log onto Office 365 you need to use your email which looks like this – **21brindleyk@bishopullathorne.co.uk** – and the password you have created for this.

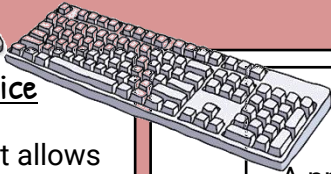
Year 7 Computer Science - How Computers Work



Test Yourself

Input Device

Something that allows you to input data into a computer – e.g. mouse, keyboard, digital camera, scanner



Motherboard

A printed circuit board (PCB) connecting all the main components in a computer system.

Internal Parts of a Computer



CPU

This is the 'brain' of the computer. Each computer has at least one and it processes all the instructions you are using. It also controls the input and output devices.

Expansion Cards

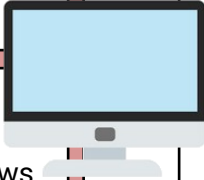
The performance of a computer can be improved by adding printed circuit boards to perform a specific task. These are plugged directly into the motherboard and provide the computer with additional ports at the back. The two most common types of expansion cards are:

- Graphics cards
- Sound cards



Output Device

Something that allows you to output information from a computer – e.g. printer, monitor, speakers



Storage Devices

A storage device is needed to store permanent copies of you OS, Program, Apps and data.

Heat Sink

Helps keep the CPU cool.



CPU

This stands for Central Processing Unit and is often referred to as the 'brain' of the computer. Its job is to carry out instructions in a computer system.

Power Supply

Takes power from the mains and feeds it to the motherboard.

ROM

Read Only Memory – permanent storage which holds the boot up sequence.

RAM

Temporary, volatile storage which holds data and programs in use.

Fan

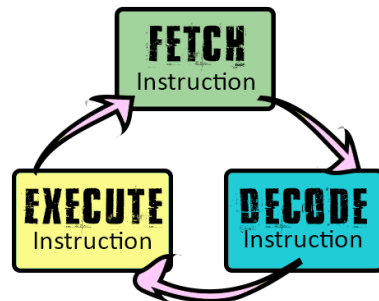
Helps keep the computer components cool.

Graphics Card

Boosts graphics capabilities by including a GPU, which frees the CPU up to perform other tasks.

Fetch-Decode-Execute

1. Instructions are fetched from the main memory (RAM)
2. The instructions are decoded from the coding language to binary
3. The instructions are executed



Storage

Non-volatile storage means data can be stored permanently, even when the computer is turned off. This is also known as secondary storage:

- Optical storage – Blue-Ray, CD etc.
- Solid state Storage – Memory Stick/Memory Card
- Magnetic Storage – Hard disk drive (HDD)





Year 7 Computer Science - Micro:bit (Rookie)



Test Yourself

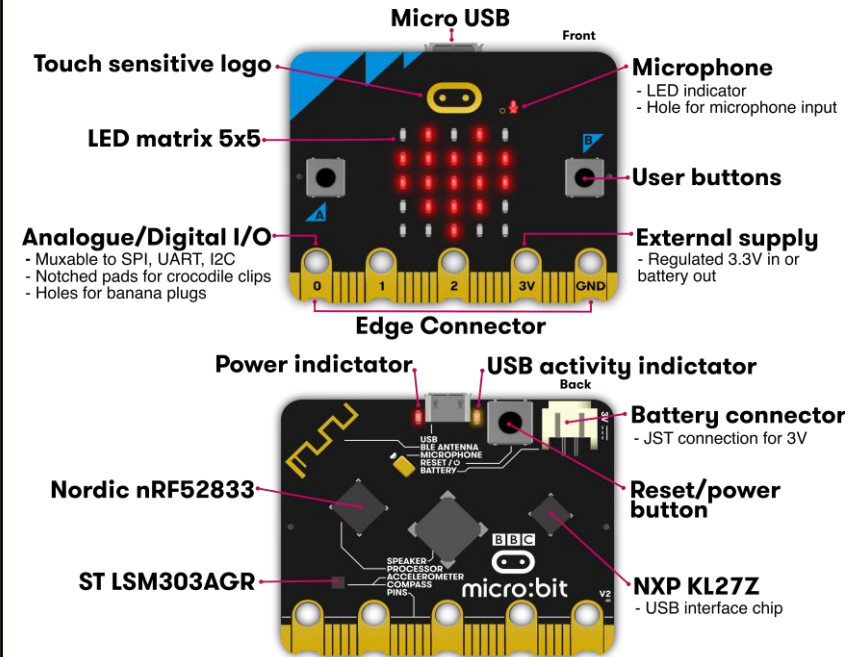
Keywords

Keyword	Definition
Algorithm	Step by step instructions to solve a given problem
Pattern Recognition	Looking for similarities or characteristics that can help solve the problem
Decomposition	Breaking the problem down into smaller problems to solve
Abstraction	Removing aspects that are not required to solve the problem
Selection	A choice built into the program to determine the next section of code to execute based on the output to a set condition
Sequence	The order the program code must be in to work correctly
Repetition	A loop of a set section of the program code
Variable	A single temporary storage location within the program code that can be changed or edited
Function	A set of instructions that are given a name and only when this name is called in the main program, is it executed

Micro:bit Hardware

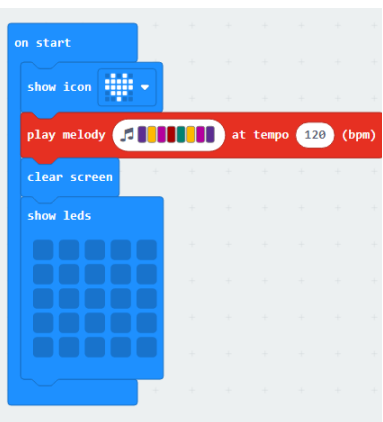
Definition: The micro:bit is a tiny computer.

You can write programs for the micro:bit on your computer and then transfer them to the micro:bit to be run.



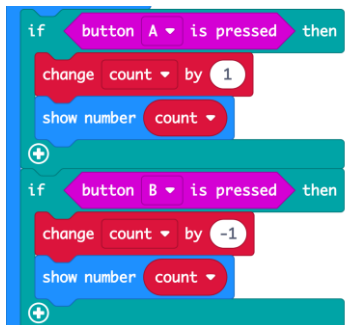
Sequence

A program which is executed line by line



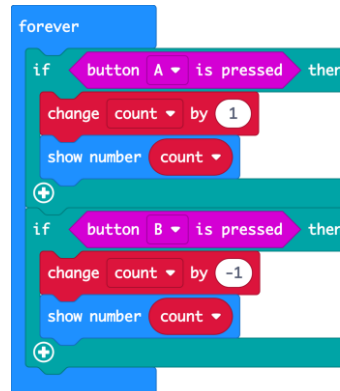
Selection

A program which makes a choice or decision – sometimes there may be more than one.



Iteration

A program which repeats a number of times or until a condition is met



Functions

A function is a piece of code that is created with a name and you can call this function anywhere else by using its name.

