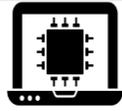


## What is hardware

Hardware is the physical parts that up a computer  
e.g. CPU and RAM



## What is software

Software is the applications that run on a computer  
e.g. Word



## Instruction

Computers need instructions to run as they can only do as they are instructed to. Software applications are a programs that contain a set of instructions that tell the computer what to do.



## Fetch-Decode-Execute

The F-D-E cycle is the process a computer does to execute the instructions. The instructions are stored in the RAM where it is fetched from the instruction is decoded so the processor understand it and finally it will execute it (complete that instruction) e.g. load Call of duty.

## Binary

Binary is a base 2 number system meaning there is only 2 numbers 1 & 0. A computer uses binary as the processor can have 2 states on or off or 1 and 0.



## Boolean Logic

At the heart of Boolean Logic is the idea that all values are either true or false.



## Key Words

Hardware – the physical parts of a computer

Software – Application that run on a computer

Instructions – Commands that tell the computer what to do.

Binary – the number system a computer uses, 1 or 0.

Boolean Logic –

Selection -

Algorithm – a set of instructions to solve a problem

Variable – a way to store data in a program.

Operator – a symbol used to compare to values

## Variable

A variable is used within a program to store data that can be used in a program. e.g. storing a name or number.

Variables are named so all data stored will be stored in a different variable.  
e.g. first\_name

## Grooming

**Grooming** is when someone builds a relationship, trust and emotional connection with a **child** or young person so they can manipulate, exploit, and abuse them.



## Biometrics

Biometrics uses the body to allow access to your devices.



## Viruses

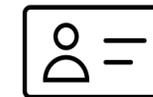
A virus is a computer program that can affect your device in different ways. It could simple slow it down or it could delete files and stop your device from working.



## Personal information

Personal information is information that is personal to you. This would include information such as;

- Name
- DOB
- Phone number
- Address



## PowerPoint

### Hyperlinks

A link to take you to another slide or an external item such as a website.

### Slide Master

An option that allows you to create a slide design across all slides used.

### Multi-media

A product that uses a range of different media that could include;

- Images
- Video
- Sound
- Animation

### Interactive

Allows the user to control what they see and do with a product.

### Target audience

The audience who you are creating the product for. This would be affect by criteria such as;

- Gender
- Age

## What is Scratch?

Scratch is a visual programming language that allows you to create programs using blocks of scripts



## Sprite

A sprite is a character or object in your game

In order to give the impression that a character is moving you can change the sprites' costume



## IF Statements

IF Statements can be used to decide what will happen based on a condition.



## Variables

A variable is used to store data for use in your program. Variables can be used to store lots of different types of data such as name, numbers and scores.



The data stored in a variable can change so if you have 0 lives the game will end. If you collect a bonus your score will increase.



### Key Words

- Algorithms
- Instructions
- Sprite
- Script
- Stage
- Variable
- Loop
- Boolean

## Block menu

The block menu helps you pick which scripts they need to control different parts of the program. The blocks are colour coded depending on what they do

**Motion blocks** – This covers moving, turning and the positioning of sprites.

**Looks** – this covers sprites speaking, thinking and changing costume.

**Sound** – allows you to add sounds and music.

**Pen** – can be used to program a drawing effects.

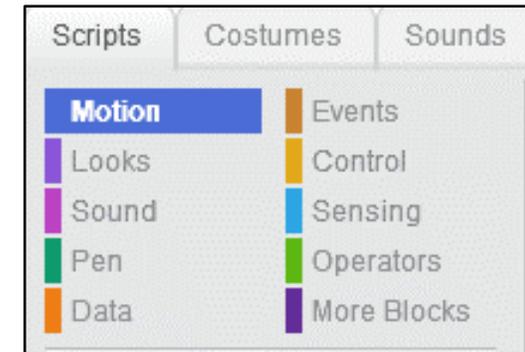
**Data** – this is used to set up variables and lists.

**Events** – this is used to start an event, these will normally be the first block used.

**Control** – this includes the if statements and loops which will be required for the programs

**Sensing** – this will be used to check if keys or mouse is being pressed or sprites are touching.

**Operators** – this allows you to compare or change data. So if lives are below 1 its game over.



## Loops

Loops are used as a way to repeat instructions. Loops are used a lot to reduce the amount of code needed.



Repeat for a number of times



Repeat something until an event happens



Repeat something forever

## What is Python

Python is a **text based programming language** that can be used to create small programs, web applications and games.

Python is easy to learn and is a great beginner language.

## Print Statement

In order to display text in the shell you need to use a print statement.

```
print ("hello World")
print ("I am a programmer")
```

This the output:

```
Hello world
I am a programmer
```

## Variables

A variable is something that can be used to store data. The data that is stored can be changed. An example of a variable include;

- A users name
- Score in a game
- Numbers for calculations

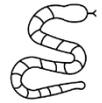
## Input

Using the code =input() we can ask a user to input some data. An input is used with a variable to store data.

```
Print("What is your name?")
UserName = input()
Print("hello", UserName)
```

**UserName** is a **variable** where name of the user is stored, to show the name you have to use the print function and include the variable name.

## Key Words



Python



Programming



Print



Variable



Input



Output



Syntax

Data Type A ,4, 3.5

## Data Types

Different types of data are stored in variables as different data types. There are 3 main data types : string , integer & float

String – this type of variable is for storing text e.g. “hello World”

Integer – a data type for storing whole numbers  
e.g. 10,-34, 176

Float – a type of variable for storing decimal numbers.  
e.g. 2.5, 3.14

## IF statements

If statements can be used to select different options in a program depending on a condition entered e.g. Entering Yes will bring up different options to Entering No.

```
Print("Are you revising?")
Question = input()
If question == "yes":
    print("Well done")
elif question == "No":
    print("You need to start you have a test soon")
```

## Syntax

Syntax is the format that the code needs to be in, in order to be processed correctly. If it is not in the right format then the code will not work. A syntax error could missing a bracket or a misspelt command, python will highlight any errors showing which line they are on.

If there is a error it will show up with the line the error is on.

Below that it will show what the name error

```
Traceback (most recent call last):
  File "main.py", line 3, in <module>
    print ("welcome", name)
NameError: name 'prnt' is not defined
```