



Year 9 Computing Knowledge Organiser

Year 9 Computing Half Term 1 & 2

Digital Detectives

Browsers

A browser is a piece of software that allows a user to access the internet. Without the browser the user would not be able to use the internet.

There are various types of browsers available and users can choose whichever one suits them best depending on the features they need/want.



Browsing for information



When looking for information, the user must consider how accurate and how reliable the source is. One way a user can narrow down search results when browsing online is through **Advanced searches**:

AND	Results must contain both criteria	Harry AND potter which would only return results containing both words.
OR	Results must contain at least one of the search criteria	Harry OR Potter would return all results containing the words either Harry or Potter
NOT	Results must not contain the specified criteria	Harry NOT Potter would only return results containing the word Harry.

Airbrushing

Airbrushing is the manipulation and altering of an image or photo. It is mostly done using a piece of software called Adobe Photoshop.

Benefits

- Helps businesses market their products
- Can increase self confidence
- Can remove unwanted parts of photos

Drawbacks

- Gives people a false image of "perfection"
- Can be misleading
- Overused in media to create fake news

Key Terms

Key Term	Definition
Browsers	A piece of software that allows a user to access the internet. An example of this is Safari, Chrome, Edge etc.
Accuracy	This refers to how up to date a source of information is. If information hasn't been updated/isn't updated regularly it will not be reliable.
Reliability	This refers to how trustworthy and truthful information is.
Advanced Searches	Making use of Boolean terms to ensure you get relevant results when searching for information online.
Photoshop	A piece of software used to manipulate and edit photos/images
Airbrushing	The process of editing an image.
Spot healing brush	A tool in Photoshop that removes blemishes/spots on the skin in photos.
Quick Selection Tool	A tool in Photoshop that allows the user to quickly select parts of a photo
Cloning	A tool in Photoshop that allows the user to select parts of an image, which can then be copied and used elsewhere within the image.
Composition	Where two or more images are combined.
Liquify	A tool in Photoshop where the user can push/pull/smudge pixels within an image. This method quickly distorts images as the pixels are turned to "liquid"
Masking	This allows the user to manipulate layers within an image.

Year 9 Computing Half Term 3

Introduction to Python

Coding in Python

File Edit Format Run Options Window Help

```
#MyMagic8Ball

import random

# write answers
ans1="Go for it!"
ans2="No way, Jose!"
ans3="I'm not sure. Ask me again."
ans4="Fear of the unknown is what imprisons us."
ans5="It would be madness to do that!"
ans6="Only you can save mankind!"
ans7="Makes no difference to me, do or don't - whatever."
ans8="Yes, I think on balance that is the right choice."

print("Welcome to My8Ball.")

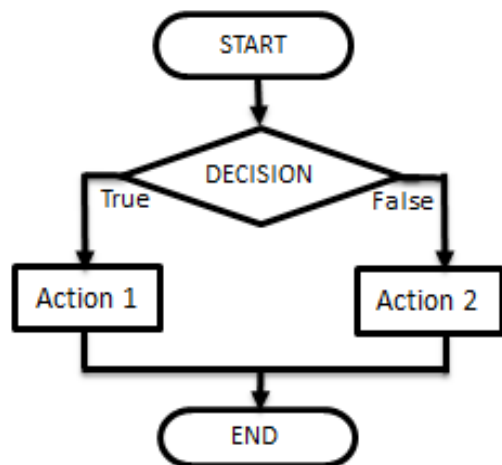
# get the users question
question = input("Ask me for advice then press ENTER to shake me.\n")

print("shaking ...\n" * 4)
```

Coding in Python

Flowcharts are methods sets of instructions/ planning represented by shapes within a diagram.

Pseudocode is fake code used a planning tool prior to developing code within a developer.



Operator	Definition
Exponentiation	Raises a number to a power eg: 2**3 OR 2 ^3 (=2 ³)
DIV	Gives the whole number after a division
MOD	Gives the remainder part of a division
==	Is equal to
! or <>	Is not equal to
<	Is less than
>	Is more than
>=	Is more than or equal to
<=	Is less than or equal to

Programming Constructs

A Sequence is when there are programming steps that are carried out one after another.

Selection is where there are different paths in your code eg: IF, ELIF, ELSE

Iteration is when there is repetition (loops) in code. This could be a WHILE loop (do something WHILE a condition is met) or a FOR loop (do something for a set number of times)

Sequence
↓

Selection
↙ ↘

Iteration
↻

Year 9 Computing Half Term 4

Introduction to Python

Programming

Programming is a set of instructions a computer uses to work and run correctly and efficiently. Without Programming most technology wouldn't exist!

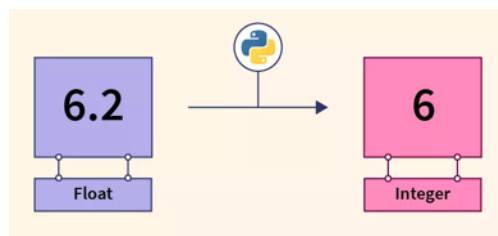
Python is a high-level programming language



We are going to continue using an IDE to write and produce code in IT this term.

Data Types

Data Type	Definition
String	Text e.g. "Hello"
Integer	Whole number e.g. 32
Float/Real	Decimal number e.g. 1.2
Boolean	Two values e.g. true or false
Character	A single character e.g. b



Debugging



If you have a syntax error look for the following errors in your code:

- Spelling
- Punctuation
- Capitals
- Indentation
- Use of functions

Key Terms

IDE	Integrated development environment
Debugging	Getting rid of an error within a programme.
Algorithm	A method of planning a programme either using Pseudocode or a flowchart.
Flowchart	A combination of shapes and arrows to demonstrate a process within a programme
Pseudocode	A planning method used to write code where both English and short script code is used. It is basically "fake code"
While Loop	A programme that repeats while the condition being tested is true.
Iteration	Where something repeats several times. This occurs within a loop.
Syntax error	The most common error in python where the programme doesn't understand the code and can therefore not run it.
Logic Error	Logic errors in a program are mistakes in the algorithm you have devised to perform the required task
Counter	Counter variable to say how many times the user attempted the question
Compiler	A compiler or interpreter to translate your program into machine code
Error diagnostics	Used to point out syntax errors
Searching	A process used in python to find a specific piece of data.
Sorting	Where you organise data in a way that allows the user to search/find information easier.

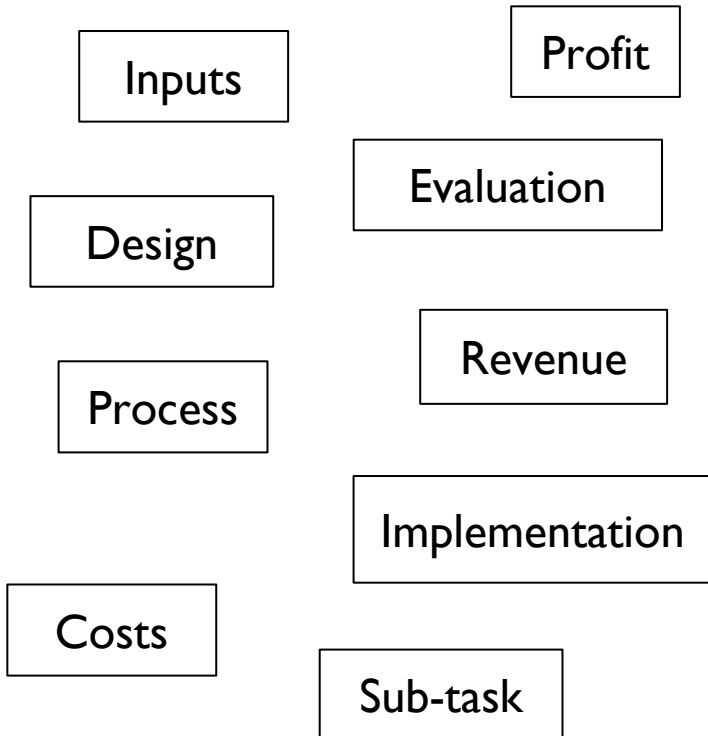
Year 9 Computing Half Term 5 & 6

Mayhem Manor

What is Project Planning?

Setting a goal whereby **resources** and **skills** are managed in order to successfully **coordinate** and complete a project.

Key words



Project Life Cycle



For this unit you will take on the role of a project manager for the theme park Mayhem Manor and plan the opening of a new theme park water ride, by following the stages of the project life cycle.

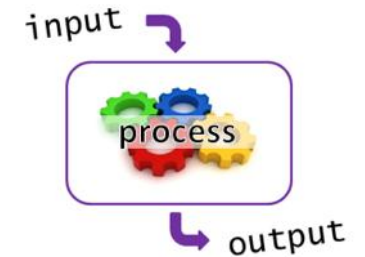


Business Calculations

Revenue is the money made from selling products/services. It is calculated using:
 $\text{Selling Price} \times \text{Quantity Sold}$

Profit is the money you have left from your revenue, after your costs have been deducted. It is calculated using:
 $\text{Total Revenue} - \text{Total Costs}$

Inputs, Processes and Outputs.



Input - Data is input into a computer system EG a rollercoaster senses the movement of a carriage on the track.

Process - The system processes the data and handles it the appropriate way. EG The camera is activated

Output - The action is then taken dependent on how the data has been processed. EG A ride photograph is taken