COMPUTING

Year 8 Intro to Python

Python is a **text** based **programming language**. That can be used to create programs, games, applications and much more!

A **program** is a set of precise instructions, expressed in a **programming language**.
Translating the programming language is necessary for a machine to be able to **execute** the instructions.

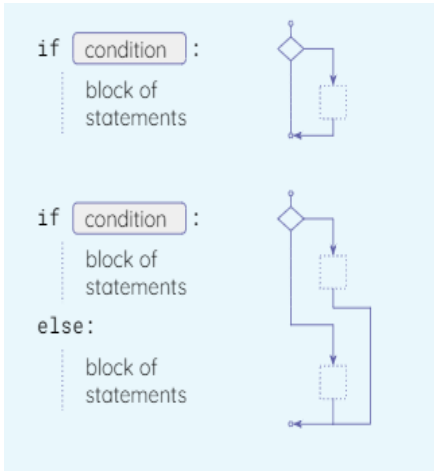
To execute a Python program, you need a **Python interpreter**.

This is a program that translates and executes your Python program.

Useful snippets of code	
print ("Year 8")	Will display the string "Year 8"
input ()	Reads a line of text from the keyboard and returns it
Variable_name = expression	Allows an expression to be assigned to a variable. E.g. year=1944 or name= "Bob"
Name=[item1, item2, item3]	Allows ctreation of a list e.g. shopping = ["oranges", "apples", pears"]

A **selection** statement allows a computer to **evaluate** whether an **expression** is 'true' or 'false' and then perform an action depending on the outcome.

You will need an `if` or an `if, else`:
when there is **more than one possible path** for your program to follow.



Some data types

Whole numbers—**integer**

Yes/no or True/False—**boolean**

Letters, combination of letters, numbers—**string**

Arithmetic operators

+ addition
- difference
* multiplication
/ division
// integer division
% remainder of integer division
** exponentiation (to the power of)

Syntax Errors

All programming languages have rules for **syntax**,
i.e. how statements can be assembled.
Programs written in a programming language must follow its syntax.
Programs with **syntax errors** cannot be translated and executed.

Some programming key terms

input
variable
assignment
selection
algorithm
sequence
walk through
iteration
relational operators
logical operators
list
output

You can use multiple branches using if, elif and else

Python helps by telling the programmer where the error is.
So if you see red error text—read it first.

Some common syntax errors in selection

- use if and else—no capitals
- A colon : is always required after the if condition and after else.
- Use **indentation** to indicate which statements 'belong' to the if block and the else block.
- The == operator checks for equality.
- A single = is only used in assignments