



Subject	Computing	Theme	Python	Term	4
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What should I already know?

- How to design and program a character game.
- How to design an original character or backdrop for a game.
- How to add features or effects to enhance a game.
- How to create an original animated game with a specific goal.
- How to program costume changes for a sprite
- How to add point-scoring and levels to game code.

What should I know by the end of the unit?

- To know how to start Python IDLE and run a Python program.
- To use Python to perform calculations.
- To write simple programs that respond to user input.
- To understand why programming language use data types.
- To use type casting in Python to enable numerical inputs.
- To understand the importance of annotating code
- To know how selection is used to make a decision in a computer program
- To recognise and use comparison operators.
- To be able to use if, elif and else in Python programs.
- To use Python lists as a data structure.
- To use iteration in a program to repeat blocks of code.
- To know how to use for, in and range in Python
- To know how to use while-loops in Python to iterate blocks of code
- To understand the difference between validation and verification
- To import the random module and generate random numbers

Key Vocabulary

Boolean	Boolean data type is a data type that has one of two possible values (usually denoted true and false)
Float	A float is a data type composed of a number that is not an integer
IDLE	IDLE is an acronym of Integrated Development Environment. An Integrated Development Environment contains all the tools needed to write, test and run computer programs.
Inputs	An input is data that a computer receives
Integer	Integers are whole numbers represented as binary values. Most programming languages provide a data type called 'integer', often called 'int' for short.
Interactive Mode	The Interactive mode gives immediate feedback to every line of code that is entered, and is useful for testing ideas and small snippets of code.
Loop	A loop is a sequence of instructions that is continually repeated until a certain condition is reached.
Script Mode	The Script mode allows a programmer to type in many lines of Python code, and then save the code as a single program with a file name.
Selection	Selection is how computer programs make decisions.
String	A string can contain any sequence of characters, visible or invisible, and characters may be repeated.
Syntax Error	Syntax errors are mistakes in the source code, such as spelling and punctuation errors, incorrect labels, and so on, which cause an error message to be generated by the compiler
Text-Based Language	These are languages that are typed using a keyboard and stored as text files. Not as blocks in programmes such as Scratch & 2Code.
Type Casting	Where you can change the data type of the given information.
Validating	Validating data is checking that inputted data is in the correct format
Variable	We can think of variables as like boxes in computer memory. Each box has a label, and we can store information in each box.
Verifying	Verifying data is showing a user what they have already inputted, so that they can look at it and check (verify) that the inputted data is as they expected it to be