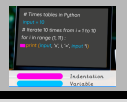
Swans Aut 2 (cycle A)

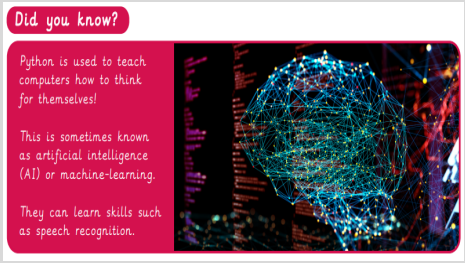
Programming: Intro to Python



What I should already know: Children will be familiar with Scratch coding programme and will understand how to use loops to improve programming and know how decomposition is used in programming. They know that you can remix and adapt existing code. They can use decomposition to solve a problem by finding out what that code was used for and understand the purpose of a script of code.They can create algorithms for a specific purpose and can incorporate variables to make code more efficient. They can remix existing code.

Enquiry Questions

- Can I tinker with a new piece of software?
- How does having a loop-within-a-loop change a design?
- How do you alter an image using text based programming language?
- How does tinkering with Python help me draw Islamic art?
- How can Python re-create work in the style of Mondrian?



Key Vocabulary

Algorithm - a sequence of instructions which when followed, solve a problem

Code - a set of instructions written in programming language to tell a computer what to do.

Command - to give an order of instruction to a computer to complete a particular task.

Input - enter

Import - to pull another file into software, to place, edit and manipulate.

Indentation (in programming) - In programming, eg Python, indentation is used to define a block of code.

Loop - a repeated sequence of instructions

Nested loop - a loop within a loop

Random numbers - an unpredictable sequence or reveal of numbers

Remix - something that has been reworked to produce a varying version of the original.

Script liberties - A series of pre-written, functional codes that can be accessed and imported into a program to save time.

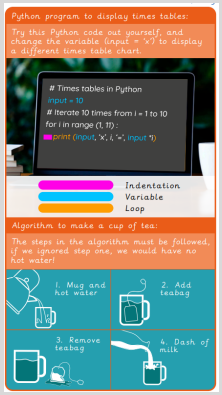
Variable - this could be a number or text that can change each time the program is run and often in combination with selection to change the end result of the program

Computing Skills:

- Decompose a program into an algorithm.
- Write increasingly complex algorithms for a purpose.
- Debug quickly and effectively to make a program more efficient.
- Remix existing code to explore a problem
- Use and adapt nested loops.
- Programme using the language Python.
- Change a program to personalise it.
- Evaluate code to understand its purpose.
- Use logical thinking to explore software independently, iterating ideas and testing continuously.

NC Skills:

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.



Links to other curriculum areas: Maths – compare and classify geometric shapes based on their properties and sizes. Describe positions on the full coordinate grid. Art – improve their mastery of art and design techniques, including drawing, painting and sculpture and know about great artists, architects and designers in history