Year 6 Computing knowledge mat: Introduction to Python

Subject Specific Vocabulary

Algorithm	A sequence of instructions which, when followed, solve a problem.
Code (computer)	A set of instructions written in programming language, to tell a computer what to do.
Computer command	To give an order or instruction to a computer, to complete a particular task
Decompose	To break something down into smaller chunks.
Import (software)	To pull another file into software, to place, edit and manipulate.
Indentation (programming)	In programming (for example 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 libraries	A series of pre-written, functional codes that can be accessed and imported into the 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.

Key Knowledge

I know that there are text-based programming languages such as Logo and Python.

I know that nested loops are loops inside of loops.

I understand the use of random numbers and remix Python code.
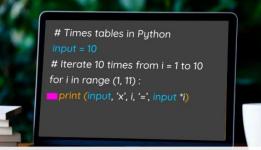
Prior Learning

Year 5:

- I know that a Micro: bit is a programmable device.
- I know that Micro: bit uses a block coding language similar to Scratch.
- I understand and recognise coding structures including variables.
- I know what techniques to use to create a program for a specific purpose, including decomposition.

Year 3:

- I know how to use loops to improve programming.
- I know how decomposition is used in programming.
- I know that you can remix and adapt existing code.

Connect

Try this Python code out yourself, and change the variable (input = 'x') to display a different times table chart.

```
# Times tables in Python
input = 10
# Iterate 10 times from i = 1 to 10
for i in range (1, 11) :
    print (input, 'x', i, '=', input *i)
```

Indentation
Variable
Loop

Did you know?

Python is used to teach computers how to think for themselves!

This is sometimes known as artificial intelligence (AI) or machine-learning.

They can learn skills such as speech recognition.