

Topic: Computing	Year group	Term
Computer Science - Python	Year 6	Summer 1 6 sessions

Background knowledge

Children will have already completed a unit of block coding in Espresso Coding in Year 6, More Complex Variables. They will have experienced some non-block coding last year in Year 5 when they were introduced to HTML.

What should I already know?

Children learned to use variables in more complex ways, and to manipulate inputs to create useful outputs. Children can explain the link between maths and the outputs produced by their codes. Children practised using HTML to add paragraphs, images and headings to web pages. They recognised the use of some keyboard punctuation symbols in their codes. They practised spotting errors in their codes and debugging them. They took part in an end of unit assessment about HTML.

National Curriculum Objectives / Key Skills	The Journey
<p>To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.</p> <p>To use sequence, selection, and repetition in programs; work with variables and various forms of input and output including some non block coding.</p> <p>To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p><i>I can create programs that use sequence, selection and repetition.</i></p> <p><i>I can use some non block coding.</i></p> <p><i>I can explain how some simple algorithms work and detect and correct errors.</i></p>	<ol style="list-style-type: none"> 1. Children will start their introduction to Python by learning how to print text on the screen. 2. The children will learn how to use Python to make simple calculations. 3. Children learn how to get a variable input from a user, for example, their name, and learn how to store it. 4. Children learn how to make a simple quiz using "if" commands. 5. Children use Python to make calculations with variables to work out how much things cost in a restaurant. 6. Children learn to combine variables with selection and build a quiz that keeps track of how many questions you got right. 7. Children take part in an end of unit assessment to test their Python skills.

Outcomes

An overview of what children will know / can do

Working towards: Children are introduced to basic Python and progress to demonstrate making simple quizzes with some support for reading and numerical skills.

Expected: Children are introduced to basic Python and progress to demonstrate making simple quizzes using inputs, outputs, variables, conditions. Children can give some examples of how punctuation is used in the code.

Exceeding: Children are introduced to basic Python and independently progress to demonstrate making original quizzes using inputs, outputs, variables, conditions. Children can explain the role of different punctuation symbols in the code.

Key Vocabulary

Algorithm - The set of steps to solve a problem.

Code - A list of commands in a computer program.

Debugging - To correct mistakes or problems in a computer program.

Input - the numbers you put into the variables.

Output - the outcomes produced by the numbers you put into the variables.

Print - to make text appear on the screen in Python - a computer programming language.

Program - A set of instructions in a programming language or code that tells a computer what to do.

Python - a computer language.

Run - To make a program follow its instructions.

Text - the words on the screen.

Timeline / Diagrams

```
1 print ('one')
2 print ('two')
3 print ('three')
```

The answer is:
20



```
print ('The answer is:') print (10+10)
```

Key people / places

Guido van Rossum created the programming language Python in the Netherlands. It was first released in 1991.

Assessment questions / outcomes

What does the word print mean in Python? Does it mean to make paper come out of a printer?

What punctuation marks go around codes like the answer is an $10+10$?

What punctuation sign goes between food1 and input?

What sign do we put in front of the correct answer to an if statement?

How can Python help you solve a maths question that you don't know?