

Overview of Year 8- Python Programming

Lesson	Learning objective	Learning outcomes	Prior learning needed	Cross curricular learning	Home Learning Links
1 (the number in the sequence of lessons)	The big question / the theme for the lesson	The key learning points scaffolded to enable teaching to the top (NB we aspire this for all students, but for some, they might not reach the most challenging outcomes)	What the students need to know / understand / be able to do to be able to access the learning in this lesson (this would make a useful starter!!)	Where the learning in this lesson may require learning that students will have from other subjects	Where teachers can go to get resources to support their planning
Lesson 1	<p>Identify the basic features of the Python Programming language</p> <p>Describe the purpose of the Print command</p> <p>Write simple programs to print lines</p>	<p>Describe the purpose of the Print command</p> <p>Create a program to output text on multiple lines</p> <p>Create a program that prints a 6-line conversation between two people</p>	How to run code using script mode/ code editor onto the shell.	<p>Literacy- Understanding keywords</p> <p>MFL- Programming syntax</p> <p>Maths- Using problem solving skills</p>	<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> L1- Intro To Python & Print PowerPoint, Worksheets + Solutions <p>BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/zwmbgk7/revision/5</p> <p>Oak Academy: https://classroom.thenational.academy/lessons/first-steps-6ctk4d</p>
Lesson 2	<p>Describe the purpose of a variable</p> <p>Create programs using variables</p>	<p>Describe the purpose of a variable</p> <p>Create a program using the variables biscuits and</p>	<p>How to run code using script mode/ code editor onto the shell.</p> <p>What variables are</p> <p>How to code print statements.</p>	<p>Literacy- Understanding keywords</p> <p>MFL- Programming syntax</p>	<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> L2- Variables

		<p>join this variable with a sentence.</p> <p>Write a program that uses three variables, an adjective (descriptive word), a number and an animal. Print a funny response using all variables.</p>		<p>Maths & Science- Using variables</p>	<ul style="list-style-type: none"> PowerPoint, Worksheets + Solutions <p>BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/zwmbgk7/revision/2</p> <p>Oak Academy: https://classroom.thenational.academy/lessons/variables-60w3je</p>
Lesson 3	<p>Describe the purpose of the input command</p> <p>Create programs using the input command</p>	<p>Describe the purpose of the input command</p> <p>Create a program that asks the user for their name. Print what the user inputs on the second line.</p> <p>Create a program that asks the user 2 questions: One for how they get to school and one for how long it takes. Print an appropriate response that uses both of their answers.</p>	<p>How to run code using script mode/ code editor onto the shell.</p> <p>How to create variables in python</p>	<p>Literacy- Understanding keywords</p> <p>MFL- Programming syntax</p>	<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> L3- Input PowerPoint, Worksheets + Solutions <p>BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/zwmbgk7/revision/5</p> <p>Oak Academy: https://classroom.thenational.academy/lessons/input-60u66c</p>
Lesson 4	<p>Describe the purpose of different Arithmetic Operators</p> <p>Create python programs using Arithmetic Operators</p>	<p>Describe the purpose of different Arithmetic Operators</p> <p>Create a python program to do calculations using arithmetic operators (+, -, *, /)</p> <p>Write 2 input lines that asks the user to enter 2 numbers</p>	<p>How to run code using script mode/ code editor onto the shell.</p> <p>How to code input statements in python</p>	<p>Literacy- Understanding keywords</p> <p>MFL- Programming syntax</p> <p>Maths- Using Arithmetic to do calculations in python e.g. (+, -, *, /)</p>	<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> L4- Arithmetic Operators PowerPoint, Worksheets + Solutions <p>BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/zwmbgk7/revision/1</p>

		Multiply number 1 and number 2 together and print the answer			Oak Academy: https://classroom.thenational.academy/lessons/crunching-numbers-6gtked
Lesson 5	Describe the purpose of different Comparison Operators Create python programs using Selection (IF Statements)	Describe the purpose of different comparison operators Create a password program which asks the user to type a password + checks if the password is "abc1". If correct it prints "Access granted" Create a program that might be used inside a police speed camera	How to run code using script mode/ code editor onto the shell. What Selection means How to code using print, variables, input + operators	Literacy- Understanding keywords MFL- Programming syntax Maths- Using Comparison operators (Greater than, less than etc)	Lesson content in more detail on PowerPoint <ul style="list-style-type: none"> • L5- Selection- IF ELSE • PowerPoint, Worksheets + Solutions BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/z2p9kqt/revision/1 Oak Academy: https://classroom.thenational.academy/lessons/at-a-crossroads-cgwkac
Lesson 6	Describe the purpose of Selection Create python programs using ELIF statements- ELIF (ELSE IF Statements)	Describe the purpose of different comparison operators Create a program which asks the user to type in a colour. It should output different messages for different colours. Create a program which asks the user for 2 numbers and multiplies the two numbers. If the total is over 9000, then print "It's over 9,000!!!" else print the total	How to run code using script mode/ code editor onto the shell. How to code using print, variables, input + operators What Selection means. The rules/ syntax of IF statements	Literacy- Understanding keywords MFL- Programming syntax Maths- Using problem solving skills	Lesson content in more detail on PowerPoint <ul style="list-style-type: none"> • L6- Selection- IF ELIF ELSE • PowerPoint, Worksheets + Solutions BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/z2p9kqt/revision/1 Oak Academy: https://classroom.thenational.academy/lessons/more-branches-cmt32d

Lesson 7	<p>Describe the purpose of Iteration</p> <p>Create python programs using Iteration (FOR Loops)</p>	<p>Describe the purpose of Iteration</p> <p>Create a FOR loop to print your name 100 times</p> <p>Create a program that asks for a number and store this in a variable</p> <p>Use a FOR loop to print the times table for that number up to the 10 times table</p>	<p>How to run code using script mode/ code editor onto the shell.</p> <p>What Iteration means.</p> <p>How to code using print, variables, input + operators</p>	<p>Literacy- Understanding keywords</p> <p>MFL- Programming syntax</p> <p>Maths- Using problem solving skills</p>	<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> • L7- Iteration- Count Controlled Loops • PowerPoint, Worksheets + Solutions <p>BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/z3khpv4/revision/1</p> <p>Oak Academy: https://classroom.thenational.academy/lessons/round-and-round-6cr6ae</p>
Lesson 8	<p>Describe the purpose of Iteration</p> <p>Create python programs using Iteration (WHILE Loops)</p>	<p>Describe the purpose of Iteration</p> <p>Create a WHILE loop to print all the numbers from 1 to 11</p> <p>Create a guess the number game.</p> <p>While total is not equal (!=) to 4 ask the user to input a guess for a number between 1 and 10.</p>	<p>How to run code using script mode/ code editor onto the shell.</p> <p>What Iteration means.</p> <p>How to code using print, variables, input + operators</p>	<p>Literacy- Understanding keywords</p> <p>MFL- Programming syntax</p> <p>Maths- Using problem solving skills</p>	<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> • L8- Iteration- Condition Controlled Loops • PowerPoint, Worksheets + Solutions <p>BBC Bitesize Notes: https://www.bbc.co.uk/bitesize/guides/z3khpv4/revision/3</p> <p>Oak Academy: https://classroom.thenational.academy/lessons/while-loops-6gt68r</p>
Lesson 9	Re-learn keywords in Python	Re-learn keywords for Python	Key programming concepts: Sequence, Selection, Iteration	Literacy- Understanding keywords	Lesson content in more detail on PowerPoint

	<p>Programming (Revision)</p> <p>Create python programs to solve real life problems</p>	<p>Complete the Programming challenges on Selection</p> <p>Complete the Programming challenges on Iteration</p>		<p>MFL- Programming syntax</p> <p>Maths- Using problem solving skills</p>	<ul style="list-style-type: none"> • L9- Python Revision • PowerPoint, Worksheets + Solutions <p>Oak Academy: https://classroom.thenational.academy/lessons/putting-it-all-together-cthkad</p> <p>https://www.ocr.org.uk/Images/202838-20-code-challenges.pdf</p> <p>https://www.ocr.org.uk/Images/260930-coding-challenges-booklet.pdf</p>
Lesson 10	<p>Complete an End of unit assessment</p> <p>Peer Assess the End of Unit Assessment using the Mark Scheme</p>	<p>Completing an End of Unit Assessment</p>	<p>Knowledge of topics in the SOL</p>		<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> • L10- Assessment • PowerPoint, Assessment + Mark Scheme available in T Drive: <p>T:\Department Specific\Computing and ICT\2018-2019\KS3\Year 8</p>
Lesson 11	<p>Reflect on your End of Unit Assessment</p> <p>Apply improvements using DIRT (Dedicated Improvement and Reflection Time)</p>	<p>Identify areas for improvement based on target set by teacher</p> <p>Mastery: Research + complete the Mastery targets</p>	<p>How to research using the Internet/ specific websites to use</p>		<p>Lesson content in more detail on PowerPoint</p> <ul style="list-style-type: none"> • L11- DIRT & Mastery Week • PowerPoint, Assessment + Mark Scheme available in T Drive: • DIRT + Mastery sheet attached to Assessment for targets • List of Dirt targets available of T Drive: <p>T:\Department Specific\Computing and ICT\2018-2019\KS3\Year 8</p>