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| Topic: 7.4 Python | | | | Duration: 6 weeks | | Composite: EOU Project | |
| Key vocabulary: | | Core knowledge questions | | Powerful knowledge crucial to commit to long term memory | | Links to previous and future topics | |
| Print Syntax Input Variable Data type String Integer Float Boolean Sequencing Iteration Selection | | <ol style="list-style-type: none"> 1. What is programming? Programming is the process of writing a computer program. 2. What is Python? Python is a text-based programming language. 3. What is syntax? Syntax are the rules of a programming language which must be followed in order to reduce errors occurring in the program code. 4. What is an “input”? An input is where a user is required to enter data into a program. It is usually stored in a variable. 5. What is a variable? A variable is a storage container for a value that can be changed. 6. What is a data type? A data type is the type of data that is being stored in a variable. 7. What is a string data type? A string is comprised of a “string” of characters or text e.g. “hello” 8. What is an integer data type? An integer is comprised of a whole number e.g. 182 9. What is a float data type? A float is comprised of a decimal or floating point number e.g. 2.5 10. What is a Boolean data type? A Boolean data type is comprised of a TRUE or FALSE value. 11. What is sequencing? Sequencing is the order in which instructions are processed 12. What is iteration? Iteration is how programs repeat instructions. These can be count-controlled (FOR loop) or condition controlled (WHILE loop) 13. What is selection? Selection is how programs can be used when a decision needs to be made based on a condition. In Python this is achieved by using IF, ELIF and ELSE. | | <ul style="list-style-type: none"> • Programming is the process of writing a computer program. • Syntax are the rules of a programming language which must be followed in order to reduce errors occurring in the program code. • An input is where a user is required to enter data into a program. It is usually stored in a variable. • A variable is a storage container for a value that can be changed • Sequencing is the order in which instructions are processed • Iteration is how programs repeat instructions. These can be count-controlled (FOR loop) or condition controlled (WHILE loop) • Selection is how programs can be used when a decision needs to be made based on a condition. In Python this is achieved by using IF, ELIF and ELSE. | | <ul style="list-style-type: none"> • Builds on skills gained from 7.3 Scratch unit and uses the same concepts of Sequencing, selection and iteration. • Utilises computational thinking and skill builds reading for KS4 Computer Science. | |
| We will develop these skills: | | | | | | | |
| Impressive reading | Impressive speaking | Impressive writing | Resilience | Numeracy via: | Digital Literacy via: | Employability via: | |
| Read and follow instructions carefully. Understand how syntax works and the need for attention to detail. | Articulating where errors have occurred and how they can solve them. | Explaining and analysing the code that has been created. Commenting to signify skills used | The need to constantly edit and run a program until it is error free (debugging) | Understanding of different data types, how these can be calculated in Python as well as logical decisions to be made. | Programming a computer | Understanding how to program. Using core building blocks of programming. Utilising computational think skills and problem solving. | |