Year 9 Half Termly 2 Topic Sheet for January – March 2020

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| TOPICS: Introduction to Programming/Coding |

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| Theme: Programming/Coding | Level: Year 9 |
| Objectives: Plan & write programming codes using Python | |

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| Students will use worksheets and the online resource Code Club & Code Academy | Key Words Homework | |
| Assessment   * ***Learning Objectives-*** *1. Plan the content for your programming code, 2. Decide what programming software to use 3. Create various programs such as About me, Rock, Paper, Scissors and many more 4. Create and follow a suitable structure for a program, 5. Understand and use syntax, strings, data types, functions, variables, loops and the role they play in your code/program in order to create complex code* * ***CHROMEBOOKS MUST BE USED IN ALL LESSONS BY THOSE STUDENTS WHO HAVE ONE AS WE WILL USE AN ONLINE EDITOR TO PROGRAM/CODE***   ***Practical skills LO***   * *Know the different programming languages and their advantages and disadvantages as well as where they are used* * *Plan and Create your own code to produce various tasks such as pictures about yourself, two player games, your own encryption program, charts, calculators, passwords and databases etc.* * *Teach the computer how to speak by learning Syntax* * *Learn how to use strings* * *Know how to include a comment in your program to give you a running commentary of what the program is doing* * *Know the key data types and implement them in your program* * *Learn how to use conditionals and control flow to create programs that generate different outcomes* * *Create, use and define functions* * *Learn about and use Lists and dictionaries* * *Learn about and use List and functions* * *Learn about ‘While’ and ‘For’ Loops* * *Advanced topics such as data structures, list comprehensions, list slicing and lambda expressions to challenge the high ability students* * *Apply what you’ve learned about Python Programming to a real world application* | Programming languages, Coding, Python, Online Editor,  Syntax,  Data Types (String, character, integer, Boolean, Real)  Variables and Constants (naming, Assigning, Uses)  Operators (Arithmetic, Boolean, Relational)  Sequence, Selection, Iteration (IF, While)  Programming Languages (Machine Code, low level, high level, translators, assemblers, compilers, Interpreters) | 1. Importance of Coding/Programming to our daily lives…Write down 3 areas where coding is used to help us in our daily lives  2. Research 3 sectors that use programming: who, why, how, explain in detail and give examples (both written and images)  3. Create a code/program in Python that allows you to create a system where a double password must be typed in to allow you to enter the system. If the incorrect password is entered  4. Python Project – Password Generator |

**Online Website:** [https://codeclubprojects.org/en-GB/python/](about:blank)