



The English Martyrs Catholic School and Sixth Form College

<u>Y10 Comp Sci</u>	<u>Module 1</u>	<u>Module 2</u>	<u>Module 3</u>
<u>Topic Theme and Intent</u>	Gain an understanding of computational thinking and how this process can be applied to sorting and searching algorithms . Be able to use computational methods to solve real life problems using basic programming constructs .	Develop an understanding of additional programming concepts including an understanding the use of data structure and how to store records of data utilising text-based programming and working with an IDE.	Gain an understating of the need for testing and different testing strategies. In addition, gain an understanding of further programming languages , SQL and the need for ensure that programs are maintainable and efficient.
<u>Knowledge</u>	<ul style="list-style-type: none"> • Methods of computational thinking i.e. abstractions, decomposition and algorithmic thinking. • Benefits and drawbacks of searching and sorting algorithms and the use of interaction and selection. 	<ul style="list-style-type: none"> • String manipulation techniques such as strip, slice and casting methods used in programming. • Knowledge of file handling and the use of 2D and 3D arrays in programming. 	<ul style="list-style-type: none"> • Basic SQL commends including select, from and where and the need for clear comments and variable names when programming. • Advanced Boolean logic and use of logic gates and logic diagrams.
<u>Skills</u>	Break larger, more complex problems down into smaller more logical procedures that are easier to use. Be able to solve simple programming problems using Python skills.	Ability to solve more complex problems with the use of programming including reading and writing to a text file and being able to store data within a pre-defined data structure or array .	Interrogate a given database using SQL searches in addition to being able to use header and line comments within programs to ensure that program code is easy to maintain .
<u>Literacy Links</u>	<p>Reading – Read and analyse problems within task-based learning.</p> <p>Writing – Response to written exam style questions to develop skill.</p> <p>Oracy – Discussion of key terms as part of class discussion on a topic.</p>	<p>Reading – Read and analyse complex problems to produce a solution.</p> <p>Writing – Response to linked topic exam questions developing knowledge.</p> <p>Oracy – Discussion of key terms and topics in pairs or small teams.</p>	<p>Reading – Read and analyse complex problems and use algorithm solutions.</p> <p>Writing – Response to extended exam questions to develop understanding.</p> <p>Oracy – Class discussion around key concepts and debating an argument.</p>
<u>Essential Vocabulary</u>	Abstraction, Algorithm, Decomposition, Linear, Merge, Iteration, Sequence	Array, Dictionaries, File Handling, Manipulation, Read, String, Write	Boolean Algebra, Comments, Logic Gates, Maintainability, Validation

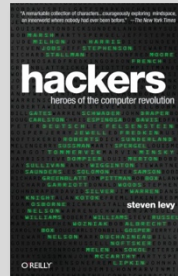
Disciplinary Reading

Ready Player One



Reading for Pleasure

Hackers: Heroes of the Computer Revolution



The Facebook Effect

