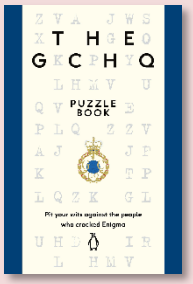
The English Martyrs Catholic School and Sixth Form College

Y12 Comp Sci	Module 1	Module 2	Module 3
Topic Theme and Intent	Develop understanding of the **CPU**, it's **component parts** and knowledge of I/O and storage devices. Understand how to write and produce **algorithms** with a focus on programming techniques using **command-line based programming**.	Gain an understanding of **software types** and the use of **low-level languages** including their translation into machine code. Explain structure of a **database** and the use **search** and **sort** techniques focused on efficiency.	Develop skills in the use of **HTML**, **CSS** and **JavaScript** and identify how data is stored and represented. Investigate **moral**, **social**, **ethical** and **cultural** issues and create small programs using form builders and appropriate commands.
Knowledge	• Characteristics of contemporary processor, software and software development. • Computational thinking skills, problem solving, algorithms and programming techniques.	• Software and software development and the way in which data is exchanged using databases. • Practical elements of software development including the use of search and sort algorithms.	• Exchanging data, data types and structures and relevant legal, moral, ethical and cultural issues. • Elements of computational thinking, problem solving and programming and application of algorithms.
Skills	Identify structure and function of **CPU** and different operating systems. Be able to use programming constructs, read and write **algorithms** and think logically using computational methods.	Use of various software applications including **system software** and key features of **database** usage. Software development using **C#** focused on program efficiency and search/sort.	Develop **webpages** using HTML, CSS and JavaScript and convert between data types, use data structures and enhanced Boolean algebra. Further develop software using **C#** focused on technique.
Literacy Links	**Reading –** Analyse context of questions to determine response based on data. **Writing –** Extended response questions, draw appropriate conclusions. **Oracy –** Group work to build and present an argument in a debate setting.	**Reading –** Contextual questions based on determining a response and research. **Writing –** Subject specific terminology to demonstrate knowledge. **Oracy –** Class discussion around key issues, group presentation.	**Reading –** Understand acts of legislation and read and correct computer code. **Writing –** Extended responses focused particularly on legislative issues. **Oracy –** In groups, prepare and present an argument for/against a point raised.
Essential Vocabulary	Accumulator, Cache, Decomposition, Heuristic, Index, Multicore, Register	Decompose, Defragmentation, Kernel, Polling, Proprietary, Translation	Abstraction, Checksum, Concurrently, Exponent, Mantissa, Normalised, Tuple

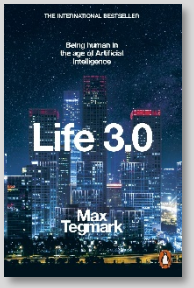
Disciplinary Reading

GCHQ Challenge Book

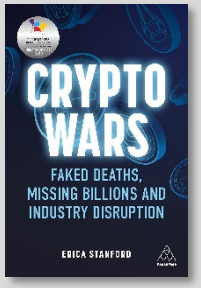


Reading for Pleasure

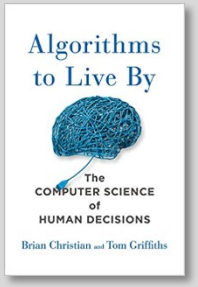
Life 3.0



Crypto Wars



Algorithms to Live By



Outnumbered