

**Long
Term Plan**

Computing – 2023/24

Year 12: Computing

	Learning Cycle	Key Concepts	Something to read	Something to code	Something to watch
HT1	Components of a computer and their uses Programming Techniques	<ul style="list-style-type: none"> • Processor components • Processor performance • Types of processor • Input/Output/Storage Devices • Programming basics • Iteration and selection 	<ul style="list-style-type: none"> • Computational fairytales – Jeremy Kubica • CGP – Python guide 	<ul style="list-style-type: none"> • CodeAcademy – Python 3 course 	<ul style="list-style-type: none"> • CraigNDave SLR 1-6 • CraigNDave SLR 8
HT2	Systems software and application generation Programming Techniques	<ul style="list-style-type: none"> • OS Functions • Types of OS • Nature of applications • Translators • Modularity, functions and procedures 	<ul style="list-style-type: none"> • Best Practises of Spell Design – Jeremy Kubica • The computers that made Britain – Tim Danton 	<ul style="list-style-type: none"> • Future Learn – Object oriented programming • Advent of code 	<ul style="list-style-type: none"> • CraigNDave SLR 4-5 • CraigNDave SLR 23
HT3	Exchanging Data Software Development	<ul style="list-style-type: none"> • Compression and encryption • Database concepts • Relational databases • Using SQL • Transactional processing • Writing and following algorithms • Assembly Language 	<ul style="list-style-type: none"> • The Cathedral and the Bazaar- Eric S. Raymond • Create graphical user interfaces in Python – Laura Sach 	<ul style="list-style-type: none"> • CodeAcademy – Learn SQL 	<ul style="list-style-type: none"> • CraigNDave SLR 9-10 • CraigNDave SLR 7
HT4	Networks and Web Technologies	<ul style="list-style-type: none"> • Structure of the internet • Internet communication • Network security and threats • HTML and CSS • JavaScript • Client server and peer to peer 	<ul style="list-style-type: none"> • Hackers – Stephen Levy • Retro gaming with Raspberry Pi – Raspberry Pi Foundation 	<ul style="list-style-type: none"> • CodeAcademy – Learn HTML course • CodeAcademy – Learn how to build websites course 	<ul style="list-style-type: none"> • CraigNDave SLR 11-12 course
HT5	Data Types Boolean Algebra Algorithms	<ul style="list-style-type: none"> • Data types, binary and hex • Floating point arithmetic • Bitwise manipulation and masks • Logic gates • Karnaugh maps • Searching and sorting algorithms 	<ul style="list-style-type: none"> • Logic, an introduction to elementary logic – Wilfred Hodges • Nine algorithms that changes the future – John MacCormick 	<ul style="list-style-type: none"> • CodeAcademy – Discrete math course 	<ul style="list-style-type: none"> • CraigNDave SLR 13 • CraigNDave SLR 25 •
HT6	Data Structures Legal and Cultural issues	<ul style="list-style-type: none"> • Arrays, tuples and records • Stacks and queues • Computer related legislation • Ethical, moral and cultural issues • Privacy and censorship 	<ul style="list-style-type: none"> • Living in a digital world: Demistifying technology – Mark C Baker • Code the Classics – Raspberry Pi Foundation 	<ul style="list-style-type: none"> • CodeAcademy – Linear Data Structures 	<ul style="list-style-type: none"> • CraigNDave SLR 14 • CraigNDave SLR 16-17