Long Term Plan

Computing – 2023/24

Year 13: Computing

	Learning Cycle	Key Concepts	Something to read	Something to code	Something to watch
HT1	Data Structures Computational Thinking NEA - Analysis	• Linked lists, graphs, trees and hash tables. • Creating, traversing, adding and deleted nodes from data structures • Thinking abstractly, ahead, procedurally, logically, concurrently • Analysis of the NEA problem	• Tackling A Level Projects in computer science – Ceredig Cattanach-Chell • Isaac Computer Science Workbook	• CodeAcademy – Python 3 course •	• CraigNDave SLR 1-6 •
HT2	Boolean Algebra Algorithms NEA - Design	• Rules to simplify Boolean algebra • D Type flip flops, half and full adders • Merge sort and quick sort • Big O notation • Design of the NEA solution	• Logic, an introduction to elementary logic – Wilfred Hodges • My Revision Notes: OCR A level Computer Science – George Rouse	• CodeAcademy – Python 3 course • Advent of code	• CraigNDave SLR 1-6 •
HT3	Algorithms NEA - Development	• Shortest path algorithms • Algorithms for the main data structures • Modes of addressing memory • Iterative development of the NEA • Testing to inform development of the NEA	• In Pursuit of the Travelling Salesman – William Cook • CraigNDave – Defold project guide	CodeAcademy – Python 3 course	• CraigNDave SLR 1-6 •
HT4	Advanced programming techniques NEA - Evaluation	• Recursion • Search engine indexing and PageRank algorithm • Evaluation of the NEA	• Algorithms Unplugged – Ed Vocking	CodeAcademy – Python 3 course	• CraigNDave SLR 1-6 •
HT5	Revision	• Component 1 key areas • Component 2 key areas	• The most complex machine – David Eck • My Revision Notes: OCR A level Computer Science – George Rouse	CodeAcademy – Python 3 course	• CraigNDave SLR 1-6 •