Year 10 Overview

HT1	HT2	HT3	HT4	HT5	HT6
2.4 Boolean Logic • Simple logic diagrams • Applying logic operators and truth tables to solve problems • Create, complete or edit logic diagrams and truth tables	**2.1 Algorithms** • Abstraction • Decomposition and structure diagrams • Algorithmic thinking	**2.2 Programming Fundamentals** • File handling • Records and SQL • Arrays and sub-problems • Random number generation	**1.1 Systems architecture** • The purpose of the CPU - The fetchdecode-execute cycle • Common CPU components and their functions • Von Neumann architecture • The common characteristics of CPUs • Embedded systems	**1.2 Memory and storage** • The purpose of primary storage • RAM and ROM • Virtual Memory • The need for secondary storage • Common types of storage • Suitable storage devices and storage media • The units of data storage	**1.3 Computer networks,** connections and protocols • Star and mesh network topologies • Modes of connection - wired and wireless • Wireless encryption • The use of IP and MAC addressing • Standards • Common protocols • The concept of layers
1.2 Memory and storage • Converting data into binary to be processed by a computer • Data capacity and calculating data capacity requirements • Converting between denary and 8-bit binary • Adding two 8-bit binary integers • Converting between denary and 2-digit hexadecimal • Binary shifts	2.2 Programming Fundamentals • Basic programming constructs • Data types, operators and string manipulation			**1.2 Memory and storage** • Representing characters and character sets • Representing images • Representing sound • Compression	EOY Exams

Year 11 Overview				
HT1	**HT2**	**HT3**	**HT4**	**HT5/6**
1.4 Network Security • Forms of attack • Threats posed to networks • Identifying and preventing	**1.6 Ethical, legal, cultural and environmental concerns** • Impacts of digital technology on wider society • Legislation relevant to computer science • Open-source vs proprietary software	**2.3 Producing Robust Programs** • Input validation • Defensive design consideration • Maintainability and refining algorithms • Types of testing and errors • Suitable test data	**2.1 Algorithms** • Algorithmic thinking • Linear search • Binary search • Bubble sort • Merge sort and insertion sort • How to produce algorithms • Interpret, correct or complete algorithms • Identifying common errors and suggesting fixes • Trace tables	Exam revision **1.1 Systems architecture** **1.2 Memory and storage – Part 1** **1.2 Memory and storage (Part 2)** **1.3 Computer networks, connections and** **1.4 Computer networks, connections and** **1.5 System software** **1.6 Ethical, legal, cultural and environmental concerns** **2.1 Algorithms** **2.2 Programming fundamentals** **2.3 Producing robust programs** **2.4 Boolean logic** **2.5 Programming languages and IDEs**
1.6 Ethical, legal, cultural and environmental concerns • Investigating and discussing computer science technologies • Privacy issues • Cultural implications of computer science • Environmental impact of computer science				

• Impacts of digital technology on wider society • Legislation relevant to computer science • Open-source vs proprietary software				