



QPHS Year 12 Computer Science Curriculum Map

Term	Title	Unit summary	Assessment
1	Topic 4 – Hardware and Software Topic 1 – Fundamentals of programming	<ul style="list-style-type: none"> The differences between hardware and software, The types of software, The roles/functions of an operating system, The classifications of programming languages, The types of programming language translators, The different logic gates (diagrams, truth tables), How to understand Boolean algebra and simplify expressions Recap or introduction to Programming (depending on past experience of students) – covering all GCSE level knowledge of Programming along with theory of programming constructs 	<p>Past paper questions on Topic 4</p> <p>Text book exercises for each chapter within the topic</p> <p>Isaaccomputerscience quizzes</p> <p>Assessment of programming tasks</p>
2	Topic 5 – Computer Organisation & Architecture Topic 2 – Problem solving and theory of computation	<ul style="list-style-type: none"> Storage devices, Internal hardware, The processor (components and roles of components), The processor instruction set, Assembly language, Input and output devices How to solve logic problems, Structured programming, Writing and interpreting algorithms, (pseudocode, flowcharts, trace tables), Testing, Abstraction and automation, Finite State Machines 	<p>Past paper questions on Topic 2 & 5 (and previous units)</p> <p>Text book exercises for each chapter within the topics</p> <p>Isaaccomputerscience quizzes</p> <p>Assessment of programming tasks</p>
3	Topic 6 – Communication: technology & consequences Topic 3 – Data representation Non-Examined Assessment (programming project)	<ul style="list-style-type: none"> Communication methods, Network topologies, Client-server and peer-to-peer networks, Wireless networking, CSMA (including RTS/CTS) and SSID, Communication and privacy, The challenges of the digital age Number systems, Bits, bytes and binary, Binary arithmetic and the representation of fractions, Bitmapped graphics, Digital representation of sound, Data compression and encryption algorithms Start work on NEA – focusing on Analysis and Design sections, starting Implementation section 	<p>Past paper questions on Topic 6 & 3 (and previous units)</p> <p>Text book exercises for each chapter within the topics</p> <p>Isaaccomputerscience quizzes</p> <p>Assessment of exam style programming tasks</p>