COMPUTER SCIENCE CURRICULUM MAP

Curriculum Content:		
Year group	*Topics include*	*By the end of the year, students should be able to:*
7	- Digital Literacy – Using Windows / Microsoft Office / Google Docs/ E-Safety - Modelling using spreadsheets - Programming 1 Using Scratch - Programming Using Scratch (Advanced Concepts) - Computer Hardware - Using Media – Gaining Support for a cause	Students should have developed their SKILLS in: - using a range of input and output devices - collecting, organising and presenting data and information that is suitable for the purpose. - making appropriate improvements to solutions based on feedback received, and comment on the success of the solution - being able to create digital products for a particular audience - being able to use arithmetic operators, 'if statements' and 'loops' to create a basic program. - being able to find and correct errors in programs (debugging) - identifying opportunities for improvement
8	- Digital Literacy – E-safety and My Digital World - Data Representation (From Clay to Silicone) - Binary Bits and Bobs - Programming 1 Using Scratch - Programming Using Scratch (Advanced Concepts) - Digital Graphics	Students should have developed their SKILLS in: - binary and decimal conversions - binary addition - being able to break down a problem and create a suitable solution - being able to effectively use search engines - being able to use arithmetic operators, 'if statements' and 'loops' to create a functioning program

		- being able to find and correct errors in programs (debugging) - being able to declare and assign variables
9	- Digital Literacy - Creating a website and Back to the Future - Python Programming Basics - iMedia - Comic Life (Collaboration with history) - Python Programming Advanced - Networks - Data Representation (Images and Sound)	Students should have developed their SKILLS in: - using logical reasoning to predict outcomes - breaking down a problem to create a suitable solution - making appropriate improvements to solutions based on feedback received, and comment on the success of the solution - creating digital products for a particular audience - using arithmetic operators, 'if statements' and 'loops' and functions to create programs for multiple scenarios - finding and correcting errors in programs (debugging) - using HTML to create a simple website - create digital artefacts for a given audience
10	**Component 1 - Computer systems** - Systems Architecture - Memory - Storage - Wired and wireless networks - Network topologies, protocols and layers - System security - System software - Ethical, legal, cultural and environmental concerns - Preparation for Programming Project	By the end of the year students should be familiar with key topics in Computer Science and their application in modern domestic and commercial use. This includes the Central Processing Unit (CPU), computer memory and storage, wired and wireless networks, network topologies, system security and system software. It is expected that learners will become familiar with the impact of Computer Science in a global context through the study of the ethical, legal, cultural and environmental concerns associated with Computer Science. At the end of year 10 students should a solid working knowledge of this content and be developing the necessary

COMPUTER SCIENCE CURRICULUM MAP

		exam skills and techniques to enable them to have made good progress towards their end of Year 11 target.
11	**Component 2 – Computational thinking, algorithms and programming** • Algorithms • Programming techniques • Producing robust programs • Computational logic • Translators and facilities of languages • Data representation • Completion of Programming Project	During Year 11 students will build on the knowledge and understanding gained in Component 1, and encouraged to apply this knowledge and understanding using computational thinking. Students will be introduced to algorithms and programming, learning about programming techniques, how to produce robust programs, computational logic, translators and facilities of computing languages and data representation. Learners will also become familiar with computing related mathematics. Students will have good knowledge of the specified content and be confident in exam skills and technique to allow them the best possible opportunity to achieve their target in Year 11 external examinations.