Striving For Excellence Together
Year 9 Computer Science Curriculum Map

	Key Concepts:		Computational Thinking, reading technical language, data representation, relationship between technology and 'the world', problem solving.

9	Topics	Assessment	Key Concepts	Key Vocabulary	Our Pillars	Knowledge tracking
Topic 1	Binary, Hexadecimal and Data Representation *(NC link: Data representation)*	**End of topic exam** – questions based on all chapters covered in this topic. Some short answer and some multiple choice,.	Understand how numbers can be presented in binary. understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	Binary, hexadecimal, binary shifts, bits, bytes, ASCII, Unicode, Bitmap, characters sets, pixels, sampling, sample resolution, digital processing, analogue, digital, audio, colour depth, compression	Literacy and Oracy	**Prior** << Y8 Binary and Hex << Y8 Computer Hardware **Future** >> GCSE Binary and Hex >> GCSE Data representation
Topic 2	Programming *(NC link: Programming). NB: Is placed here due to GCSE Options*	**End of topic exam** – questions based on all chapters covered in this topic. Some short answer and some multiple choice.	Focus on use of numbers (storing, manipulating, selection and iteration). Covers variables, random numbers, arithmetic, relational and Boolean operators.	Integers, reals, floats, variables, relational operators, Boolean operators, arithmetic operators, sequencing, selection, iteration (count and condition), Data structure, Array	Literacy and Oracy	**Prior** << Y7 Algorithms << Y7 Coding << Y8 Computational thinking and coding **Future** >> GCSE Programming >> GCSE Computational Thinking
Topic 3	Computational Logic *(NC link: Data representation)*	**End of topic exam** – questions based on all chapters covered in this topic. Some short answer and some multiple choice.	Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming.	Logical operators, AND, OR, NOT, XOR. Logic gates, logical circuits, logical expressions, Boolean logic, Boolean algebra		**Prior** << Binary and Hex << Computer hardware **Future** >> GCSE Logic
Topic 4	Databases and SQL Introduction *(NC link: information technology, programming))*	**End of topic exam** – questions based on all chapters covered in this topic. Some short answer and some multiple choice.	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems	Database, records, fields, relational databases, flat file database, SQL, SQL commands.	Life beyond School	**Prior** << Y7 Spreadsheets **Future** >> GCSE Databases and SQL
Topic 5	Cyber Security *(NC link: Digital literacy, information technology)*	**End of topic exam** – questions based on all chapters covered in this topic. Some short answer and some multiple choice.	Understand the key concepts of cyber security, the treats and methods of protection to computer systems and networks.	Cyber Security, Malware, Viruses, Trojans, social engineering, shouldering, blagging, phishing, pharming, penetration testing.	Literacy and Oracy Life beyond School	**Prior** << Y7 Digital Citizenship << Y8 Digital Citizenship **Future** >> GCSE Cyber Security