



Topic Name	Term	Skills Developed	Link to NC Subject Content	Next link in curriculum	Other Notes
Computer Systems 2	Autumn 1	• The function of the CPU. • Role of internal components of a computer (CPU/RAM hard disk) • RAM vs ROM • Secondary storage – comparison of cloud and local storage methods.	• Understand the hardware and software components that make up computer systems and how they communicate with one another and with other systems. • <i>Understand how instructions are stored and executed within a computer system</i>	• <i>Computer Systems 3 (Year 9 - Autumn 1)</i>	Links to Prior Learning: Y7 Computer Systems. Y7 Data Representation,
Data Representation 2	Autumn 2	• <i>Binary representation of text using ASCII/Extended ASCII/Unicode table.</i> • <i>Bitmap image representation.</i>	• <i>Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits.</i>	• <i>Data Representation 3 (Year 9 – Autumn 2)</i>	Foundations for GCSE section 2.2 and 2.3 Links to Prior Learning: Year 7 Data Representation



Computer Networks 1	Spring 1	- Basics of computer networks – Advantages and limitations. - Computer networks – Equipment used. - Encryption	Understand the hardware and software components that make up computer systems and how they communicate with one another and with other systems.	Computer Networks 2 (Year 9 – Spring 1)	Foundations for GCSE section 1.3 and 1.4 Links to Prior Learning: Y7 Computer Systems. Y7 Web Design (some elements)
Programming with Python – 2	Spring 2	<i>Iteration – For and While loops. Counter controlled and condition controlled.</i> <i>Use of python list data structures.</i>	<i>Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions</i>	<i>Programming with Python 3 (Year 9 Spring 2)</i>	Foundation for GCSE section 2.2 Links to Prior Learning: Y7 Introduction to Python Y7 Computational Thinking
Searching Algorithms	Summer 1	- Be able to compare the two methods with number sets. - Understand and compare the linear and binary search algorithms for searching through data sets.	<i>Understand several key algorithms that reflect computational thinking [for example ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem.</i>	Sorting Algorithms (Year 9 – Spring 1)	Foundation for GCSE section 2.1 Links to Prior Learning: Y7 Computational Thinking



Computing Impacts Project – Ethical and Social Impacts	Summer 2	• Concept of artificial intelligence and Machine Learning. • Ethical issues surrounding the growth of AI. • Social impacts of the growth of computing technology including privacy and changes to the employment market.	• <i>Understand a range of ways to use technology safely, respectfully, responsibly, and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns.</i> • <i>Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</i> • <i>Undertake creative projects that involve selecting, using, and combining multiple applications.</i>	• <i>Impacts of Computing Project – Digital Divide (Year 9 – Summer 2)</i>	Links to Prior Learning: Y7 – Impacts of Computing Project (Environmental Issues)
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