



I N D E P E N D E N C E		KNOWLEDGE / LITERACY / NUMERACY / ORACY / AGENCY		CONTENT / TOPICS / CONCEPTS	
		VOCABULARY			
		SKILLS			
		ASSESSMENT			
		Worksheets and opportunities for formative assessment are provided throughout the lessons and highlighted in the 'Assessment opportunities' section of each lesson plan Online topic specific testing with Eedi.com Paper topic tests and mock exam board tests.		Year 10 Algorithms The main focus of this unit is on searching and sorting algorithms, though other topics are covered, such as computational thinking, flow charts, and tracing algorithms. Students will have opportunities to analyse, interpret, modify, and implement a range of algorithms Computing Systems In this unit, learners will gain an understanding and knowledge of how computer systems work. Starting with the building blocks of the microprocessor - logic gates - learners will discover how a computer system works and executes instructions Databases and SQL This unit introduces learners to the world of databases and SQL. Learners explore the key terms used in a database and learn why relational databases are used to eliminate redundancy and inconsistencies that can occur in a flat file database. Next they explore increasingly challenging SQL commands where they retrieve, update and delete data in a relational database Data Representation This unit allows learners to gain the understanding and skills required for the data representation sections of the GCSE computer science exam. First, learners look at binary and hexadecimal numbering systems, how they work, and how to convert between bases. Then, learners explore different coding systems and find out how text, images, and sound are represented in computers Programming Sequence This extensive programming unit takes learners from being complete novices to having the confidence to tackle any GCSE level programming challenge. Essential programming theory is also interleaved into the practical elements of programming to provide tangible links between required knowledge and skills	
		Decomposition, Abstraction, Algorithmic thinking . Linear, Binary, Implementation, Function, Embedded, CPU, Components, Fetch– Decode– Execute. RAM, ROM, Cache, Secondary Storage, Solid State, Optical and Magnetic Memory, Assembly language, Boolean expression, Mathematical operations. Table, Record, Field, Primary Key, Foreign key. Relational Database, Flat file database. Interrogate . Hexadecimal, notation, bit, nibble, byte, megabyte, gigabyte, terabyte, and petabyte.		Impacts of technology Through a range of real-world examples, students will learn how to identify the specific type of impact, i.e. legal, cultural, privacy, environmental, and ethical. They will then progress to identifying stakeholders who are impacted by technology, and learn how these impacts are experienced, negated, or adapted to Networks This unit guides learners to gain an understanding of computer networks as required for GCSE Computer Science. It starts by defining what networks are and where we find them in our modern world. Then, learners look at the hardware involved in creating networks. In this unit, you will use Raspberry Pi computers to create a network and demonstrate to learners how data is shared across networks Security This unit enables students to gain knowledge and understanding of the range of cybersecurity threats impacting the world, our organisations, as well as us as individuals. Learners will explore security measures that can be put in place to protect networks and your data against different forms of automated and non-automated forms of attack. Once they have understood the impact of cybercrime, they will be inspired to be part of the solution, when they learn about the potential for lucrative and fulfilling careers in cybersecurity.	
		Understand the components that make up a computer system and their roles in computation. It also teaches learners about the generations of programming languages and how software and hardware work together in computation.		ASCII, Unicode, Resolution, metadata, analogue, sampling, Compiler, Interpreter, diagnostics, syntax, variables, procedure. Privacy, Legal, Ethical, environmental, cultural, legislation, obligation, stakeholder, infringement, copyright, downtime, digital divide, Ethernet, Wi-Fi, topology, communication, protocols, cybersecurity, vulnerable, cybercrime, hacker, cyberattack, encryption, filtering, backup, disaster recovery, validation, authentication, biometric, firewall.	
		Worksheets and opportunities for formative assessment are provided throughout the lessons and highlighted in the 'Assessment opportunities' section of each lesson plan Online topic specific testing with Eedi.com Paper topic tests and mock exam board tests.		Develop a knowledge and understanding of the fundamentals of computer science and programming including: networks and the importance of: connectivity, both wired and wireless, types of network, common network topologies, network security, the concept of networking protocols, including Ethernet, Wi-Fi, TCP/IP, HTTP, HTTPS, FTP and email protocols, layers. Develop their capability, creativity, and knowledge in computer science, digital media, and information technology	
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A T T I T U D E		Develop and apply their analytic, problem-solving, design, and computational thinking skills.		R E S I L I E N C E	
Understanding others, behaviour and attitudes, SMSC, PHSE				Character, personal Development, wellbeing and CIAG	
				Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns.	