

Computing and Enterprise: What Do We Want Students To Learn?

Year 7		Year 8		Year 9		Y10	Y11	Y12	Y13
Theme 1 - Discovering Computing	E-safety: How our IT systems work at CHS What good password hygiene looks like How much data is there about them & where does it go? How to stay safe online What cryptography is → Caesar ciphers	Theme 1 - Exploring Computing In A Connected World	Being a digital citizen: How to write appropriate emails Where information comes from - including use of large language models The impacts of sharing information Forms of cyber-bullying → Prevention & protection How to talk to parents about their online life	Theme 1 - Leading Digitally	Fake news and social media: Importance of considering sources of information - revisit large language models/content generation What fake news is → Impact of technology on this Social media use → Safe/appropriate use (including legal issues) Why thinking about what people can see on social media is important	GCSE CS: Unit 1 - Topic 5 - Social, Cultural, Legal, Environmental Issues	GCSE CS: Unit 1 - Topic 5 - Social, Cultural, Legal, Environmental Issues	A-Level CS: Unit 1 - Topic 5 - Social, Cultural, Legal, Environmental Issues	A-Level CS: Unit 1 - Topic 5 - Social, Cultural, Legal, Environmental Issues
	Basic components → History linked project (development of computers): How have computers developed over time? What are the basic components in a computer and what do they do?		How PCs talk to each other → Basics of networking: What is networking? Why is it beneficial? What a star topology is and how it works		Network hardware → Designing networks: What hardware is needed for a network? What does basic networking hardware do? How to identify the networking needs of different scenarios	GCSE CS: Unit 1 - Topic 3 - Networking	GCSE CS: Unit 1 - Topic 3 - Networking	A-Level CS: Unit 1 - Topic 3 - Exchanging Data	A-Level CS: Unit 1 - Topic 3 - Exchanging Data
	Introduction to binary - what is it? How does it work?: What binary is How counting in binary works How to convert from binary to denary and back		Storing images, text and sound as binary numbers → ASCII; 1, 2, 8 bit images; How characters are stored Converting from characters to binary How images are stored (1, 2 and 4-bit images) What bit-depth is & how changing it changes an image The difference between analogue and digital sound, including basics of how digital sound is created		Binary addition → Using to change things (e.g. images, etc): How to add binary numbers together Why we need to add them together How adding binary numbers can change outcomes (e.g. changing a colour)	GCSE CS: Unit 1 - Topic 2 - Images, Sound, Text	GCSE CS: Unit 1 - Topic 2 - Images, Sound, Text	A-Level CS: Unit 1 - Topic 4 - Data Types	A-Level CS: Unit 1 - Topic 4 - Data Types
	Basic logic circuits: What are logic circuits for? How NOT, AND and OR gates work How truth tables work, what they show and how to complete them		Web design → Adapting sites for accessibility (colour schemes, etc): What accessibility is Why it is important to build solutions with accessibility in mind How to build accessibility features into web pages		Messaging for different audiences → Adapt products to reflect audiences: How to adapt a solution to provide the same message for different audiences	GCSE CS: Unit 1 - Topic 4 - Network Security	GCSE CS: Unit 1 - Topic 4 - Algorithms	A-Level CS: Unit 1 - Topic 2 - Software and Software Development	A-Level CS: Unit 1 - Topic 3 - Algorithms
Theme 2 - Discovering Enterprise	Identifying audience needs → Developing based on these: How to identify what different users need from solutions Why we should do this What happens if we don't do this	Theme 2 - Exploring Enterprise	Business Finance: Difference between costs, revenue and profit How changes to these can impact business decisions	Theme 2 - Leading Communication	Functional areas: Four main functional areas How each interacts with the others Specific focus on the role of the Marketing function	GCSE E&M: R067	GCSE E&M: R067; R068	BTEC Business: Unit 1 - Exploring Business	A-Level Business: Unit 1; Unit 2; Unit 5
	Enterprise skills: What is an entrepreneur? What are the main entrepreneurial skills? How to identify target markets for solutions/products		Publishing skills: How to use a range of publication tools to create professional documents and presentations How to adapt presentations for different audiences		Collaborative project: How to make use of prior learning and skills development, combining them to produce professional publications How to use collaborative tools Collaboration techniques - how to work effectively in teams (local and remote)	GCSE CS: Unit 2 - Topic 1 - Algorithms	GCSE CS: Unit 2 - Topic 1 - Algorithms	A-Level CS: Unit 2 - Topic 2 - Problem Solving Techniques	A-Level CS: Unit 2 - Topic 2 - Problem Solving Techniques
	Basic publishing, presenting skills: Understand rules of document layout How to lay out documents and presentations What makes a good document for different uses? What makes a good presentation for different uses?	Theme 3 - Exploring Algorithms	Using problem solving techniques: What abstraction, decomposition and backtracking are How to use these to solve problems Artificial intelligence - uses, risks, etc	Theme 3 - Leading Development	Computational thinking skills: Further development of abstraction, decomposition and backtracking	GCSE CS: Unit 2 - Topic 1 - Algorithms	GCSE CS: Unit 2 - Topic 1 - Algorithms	A-Level CS: Unit 2 - Topic 3 - Algorithms	A-Level CS: Unit 2 - Topic 3 - Algorithms
Theme 3 - Discovering Algorithms	Problem solving (strategies → Logic puzzles): How to use techniques such as pattern recognition to solve problems How to solve different puzzles - building up practical problem solving skills		Choosing between algorithms: How to trace algorithms How to choose between pre-written algorithms for specific solutions Understanding what makes an algorithm better than another		Adapting algorithms for different situations: How to use prior learning to build algorithms for specific situations How to adapt pre-written algorithms	GCSE CS: Unit 2 - Topic 2 - Programming Fundamentals	GCSE CS: Unit 2 - Topic 2 - Programming Fundamentals	A-Level CS: Unit 1 - Topic 2 - Applications Generation	A-Level CS: Unit 2 - Topic 3 - Algorithms
	Understanding the difference between basic algorithms: What is an algorithm? How to trace an algorithm How to identify differences between different algorithms		Micro:Bit → Python: How to write algorithms to solve specific problems Introduction to Python How to write programs for Micro:Bit in Python		Python: Secure use of basic programming constructs How to write programs using Python	GCSE CS: Unit 1 - Unit 3 - Networks GCSE E&M: R068	GCSE CS: Unit 2 - Topic 3 - Programming Fundamentals GCSE E&M: R069	A-Level CS: Unit 1 - Topic 3 - Exchanging Data	A-Level CS: Unit 3 - Programming Project
	App design → Basic constructs: What makes a good app? Sequence, selection and iteration How to write algorithms using block-based programming Basic understanding of different data types (string, integer, Boolean) How to write programs for Micro:Bit and using Scratch		Physical computing: How to combine logic gates to create logic circuits How to build logic circuits for different scenarios		Using circuits with external inputs: Combining prior learning to create physical logic circuits How to use physical connections, logic and programming skills to create physical computing solutions	GCSE CS: Unit 2 - Topic 4 - Boolean Logic	GCSE CS: Unit 2 - Topic 4 - Boolean Logic	A-Level CS: Unit 1 - Topic 4 - Boolean Algebra	A-Level CS: Unit 2 - Topic 3 - Algorithms