



Long Term Plan – KS3 Computing

Vision: The curriculum is designed to allow students to have access to transferable skills through both Computer Science and Information Technology and make informed choices on how they pursue the subjects as they continue their learning journey through the school. Computer Science should be engaging and practical, it should encourage creativity and develop problem solving skills through a variety of tasks. As active, aware and informed participants in the digital world. We also aim for the students to leave The Radclyffe School as responsible digital citizens with the skill set to keep their knowledge up to date in the ever-changing digital world. Students should be able to go online and stay safe and understand what they need to do if they do not feel safe while online.

	HT1	HT2	HT3	HT4	HT5	HT6	Threshold concepts
Year 7	E-Safety & ICT skills Passwords, social media, cyberbullying taught alongside Office apps Word, PowerPoint and Excel	What is a computer? Peripherals, Inputs, Outputs, Software & Hardware	Data Representation Introduction to Binary, ASCII, and Is mage	Computational Thinking Decomposition, abstraction, and flowcharts using Flowol	Programming Using Scratch to learn programming concepts e.g. variables and program flow	Issues Computing fundamentals how computing impacts on the real world e.g. Copyright, Data Protection and Privacy	Understand the differences between computer hardware and software while being able to use them safely, confidently, and effectively. The ability format documents using the different software in MS Office package (Word, PowerPoint, Excel). Able to identify the different peripherals (Input, output and storage) Understand how data is represented on computers in Boolean/binary. Write a detailed step-by-step set of instructions and can perform decomposition and abstraction on everyday tasks. Can write simple programs using programming concepts like loops, selections, and variables in a block-based programming language. Understand the evolution of ICT over the years and the impacts in the real world.
Year 8	Business & ICT Project Product, price, place and promotion taught alongside digital skills e.g. Photoshop	Understanding Computers RAM/ROM, Storage types, Operating Systems and Software Types	Data Representation Binary, character sets, sound and hex	Computational Thinking Algorithms and flowcharts using sequence, selection & iteration	Programming Python programming using sequence, selection, and iteration	Networks Looking at what is a network, network hardware and topologies	Understand what a business plan is and be able to identify what you may find on one (The marketing mix). Explain the differences between primary and secondary memory. Understand the purpose of operating systems and be able to identify other types of computer software (proprietary and open-source software). Understand how data is represented in computers (Binary, ASCII, sound, Images). Understand how to use flowcharts and other programming techniques to write algorithms. Using a text-based programming language to create variables, selection, iteration, and sequences.



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							Be able to explain how computers are connected over networks and understand the different types of networks and topologies.
Year 9	Business project Learning business concepts e.g. market research, segmentation, and digital skills such as web design	Computer architecture Learn about Von Neumann, the fetch-execute cycle, CU/ALU and embedded systems	Data representation Learn binary addition, logic gates, and compression	Computational Thinking Searching and Sorting algorithms	Programming Python programming project including arrays/ lists	Cyber Security Malware, social engineering and prevention methods	Able to define key term in business (market research, market segmentation, market mapping, ecommerce, web design). Able to use web authoring software and identify some characteristics of HTML code. Understand the fetch decode and execute cycle and be able to explain key terms in computer architecture. Understand how data is represented in computers (Hex, binary addition, ASCII). Can perform Linear, binary, insertion, and bubble in algorithms. Able to use pseudo code to write algorithms, Use Python to create basic programs using appropriate programming techniques. Understand some of the dangers and risks in cyber security. (Malware, hackers, and social Engineering).

Curriculum Intent

Year 7	Year 8	Year 9	Year 10	Year 11
By the end of Year 7, students have developed basic ICT competencies and can use computers effectively to achieve an outcome. They understand the fundamentals of Computer Science — for example: binary, algorithms, and the importance of sequencing in both computational thinking and programming. This year lays the foundations by introducing students to key concepts and habits required for successful programming, using block-based tools such as Scratch. Online safety is revisited and reinforced from KS2 to reflect the ever-changing nature of technology.	By the end of Year 8, students are able to build on the concepts learned in Year 7 with more advanced computer science knowledge. They explore the purpose of computer components and develop the ability to justify which device or system is most appropriate in a given context. Students begin using text-based programming to create purposeful outcomes, deepen their understanding of the risks associated with digital technology, and extend their prior knowledge of binary to include binary addition and an introduction to hexadecimal.	By the end of Year 9, students are able to study topics that bridge the gap between Key Stage 3 and Key Stage 4. They develop a more advanced understanding of how computers work through the Von Neumann architecture and produce independent coding outcomes using advanced Python programming techniques. Students explore searching and sorting algorithms and examine how operating systems use this information. They also investigate common threats to systems and networks, alongside appropriate prevention methods.	By the end of Year 10, students will have a strong foundational understanding of how computer systems work. They will be able to describe key theoretical concepts such as systems architecture, memory and storage, networks, systems software, and cybersecurity. Students will understand how digital technologies impact society, considering ethical, legal, environmental, and cultural issues. While the primary focus is theory (Paper 1), students will also begin to develop core programming skills using Python. Throughout the year, students are encouraged to think critically about the role of technology and apply knowledge through discussions, low-stakes quizzes, and retrieval practice. This builds the knowledge base and thinking skills needed for success in both written exams and programming tasks.	By the end of Year 11, students will be able to apply computational thinking to solve problems using the Python programming language. They will confidently use key programming techniques including selection, iteration, arrays, procedures, and file handling. Students will design, trace, and evaluate algorithms, including searching and sorting, and write robust, efficient code using subroutines and structured logic. They will also understand how translators and IDEs support the programming process. Throughout the year, students continue to develop problem-solving confidence through regular retrieval practice, applied programming tasks, and deliberate use of worked examples. This enables students to consolidate both theory and practical skills in preparation for final exams and future study.