

### Curriculum Plans: Year 7 (Computer Science)

	<b>Topic</b>	<b>Knowledge: By the end of the unit students will know:</b>	<b>Skills: What skills will students have developed by the end of this unit?</b>	<b>Key terms: What new key terms and vocabulary will be learnt in this unit?</b>	<b>Summative Assessment: How will pupils be assessed in this unit?</b>
Term 1	Intro to Computing	<ul style="list-style-type: none"> <li>• Understanding how to log into school computers, networks, and cloud services (e.g., email, learning platforms) using personal credentials.</li> <li>• Knowledge of key software programs, such as word processors, spreadsheets, presentation tools, and any specialised educational software or platforms (e.g., Google Classroom, Microsoft Teams).</li> <li>• Awareness of cybersecurity practices, such as creating strong passwords, protecting personal information, and following the school's acceptable use policy for responsible and safe use of ICT systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to compose, send, and manage emails.</li> <li>• Using the address book to find and add contacts.</li> <li>• Attaching files to emails and understanding how to open and download attachments.</li> <li>• Skills in saving, organising, and retrieving files on both local systems and cloud storage.</li> <li>• Attaching documents or media to different platforms, such as assignments or online submissions.</li> <li>• Competence in sending documents to a printer, selecting print options.</li> </ul>	<ul style="list-style-type: none"> <li>• Office 365</li> <li>• Printer</li> <li>• Email</li> <li>• Technicians</li> </ul>	N/A

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Term 1	Scratch	<ul style="list-style-type: none"> <li>• Understanding what a variable is and how it stores data in Scratch.</li> <li>• How sequences, conditions, and selection are used in programming.</li> <li>• The difference between comparison operators and logic operators.</li> <li>• Count-controlled and condition-controlled iteration (loops) in Scratch.</li> <li>• How selection (if, if-else statements) allows decision-making in programs.</li> <li>• Use of operators such as &lt;, &gt;, =, and logical operators (and, or, not) in Scratch.</li> <li>• Creating interactive programs in Scratch</li> <li>• How iteration and repetition simplify code in Scratch (e.g., loops for repeating actions).</li> <li>• Using Scratch to design games that include scoring systems and user feedback.</li> <li>• Designing programs with proper flow control (sequence, selection, iteration).</li> </ul>	<ul style="list-style-type: none"> <li>• Defining and using variables in Scratch programs.</li> <li>• Creating Scratch programs using sequences, loops, and condition-controlled iteration.</li> <li>• Applying comparison and logic operators in selection statements within Scratch.</li> <li>• Implementing count-controlled and condition-controlled loops to repeat instructions in Scratch programs.</li> <li>• Debugging and testing Scratch programs to fix errors in logic or structure.</li> <li>• Using Scratch's graphical interface to build complex programs that include user interaction and feedback.</li> <li>• Developing subroutines to manage repetitive tasks or sections of code.</li> </ul>	<ul style="list-style-type: none"> <li>• Variable</li> <li>• Sequence</li> <li>• Condition</li> <li>• Loop</li> <li>• Iteration</li> <li>• Selection (if, if-else)</li> <li>• Operator</li> <li>• Count-controlled iteration</li> <li>• Condition-controlled iteration</li> <li>• Debugging</li> </ul>	<b>Practical Task – Programming Project</b>
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			<ul style="list-style-type: none"> <li>• Designing and developing mini-games or tasks using loops, selection, and variables in Scratch.</li> <li>• Incorporating user input into programs to control characters or outcomes.</li> <li>• Evaluating Scratch programs</li> </ul>		
Lent 1	Cyber Explorers	<ul style="list-style-type: none"> <li>• Understanding the role and influence of social media and technology on content creation.</li> <li>• Recognising the risks associated with becoming an influencer, such as privacy issues and online harassment.</li> <li>• Concepts of computer networks and common security measures like firewalls and encryption.</li> <li>• Identifying different types of malware and delivery methods, such as phishing and email scams.</li> <li>• Basic principles of securing devices and software through updates, patches, and trusted sources.</li> </ul>	<ul style="list-style-type: none"> <li>• Critically evaluating social media content and identifying what makes it effective.</li> <li>• Creating mock social media posts and identifying risks in online behaviors.</li> <li>• Understanding and applying basic networking concepts and how to secure a network using firewalls and encryption.</li> <li>• Protecting against malware through awareness and safe online behaviors.</li> <li>• Understanding and using safe sources of</li> </ul>	<ul style="list-style-type: none"> <li>• Influencer</li> <li>• Social Media</li> <li>• Firewall</li> <li>• Malware</li> <li>• Anti-virus</li> <li>• Multi-factor Authentication (MFA)</li> <li>• Phishing</li> <li>• Social Engineering</li> <li>• Penetration Testing</li> </ul>	<b>Online Assessment –</b> MS Forms Multiple Choice Test

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		<ul style="list-style-type: none"> <li>Recognising the importance of physical security measures and user account protection.</li> <li>Understanding phishing techniques and how digital footprints can expose personal information.</li> <li>Safe use of technology and recognising social engineering techniques used by cybercriminals.</li> <li>The role of ethical hackers and security testers in protecting systems.</li> </ul>	<p>software, updates, and patches to maintain security.</p> <ul style="list-style-type: none"> <li>Implementing physical security measures and using multi-factor authentication to secure systems.</li> <li>Analysing phishing emails and understanding how digital footprints contribute to privacy risks.</li> <li>Designing spear phishing emails to understand the tactics used in social engineering.</li> </ul>		
Lent 2	Introduction to Computer Systems	<ul style="list-style-type: none"> <li>Understanding the basic components of a computer system (input, process, output).</li> <li>Distinguishing between hardware and software components.</li> <li>Understanding the role of the Central Processing Unit (CPU).</li> <li>Differentiating between data and information.</li> <li>Knowledge of various types of software, including operating</li> </ul>	<ul style="list-style-type: none"> <li>Identifying and labeling the stages of a computer system.</li> <li>Classifying devices as input, output, or processing hardware.</li> <li>Describing the role of the CPU in processing data.</li> <li>Explaining how input devices capture data and output devices display information.</li> </ul>	<ul style="list-style-type: none"> <li>Input</li> <li>Output</li> <li>CPU (Central Processing Unit)</li> <li>Data</li> <li>Information</li> <li>Operating System (OS)</li> <li>Storage (RAM, ROM)</li> <li>Hard Disk</li> <li>Flash Memory</li> </ul>	<b>Written Assessment</b> – End of topic test with MS forms for MCQ.

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		<p>systems, application, and utility software.</p> <ul style="list-style-type: none"> <li>• Different types of operating systems (e.g., Windows, macOS, Linux) and their uses.</li> <li>• The role of primary and secondary storage, including RAM and ROM.</li> <li>• Understanding the types of computer memory (volatile and non-volatile).</li> <li>• Exploring how data is stored and accessed using optical, magnetic, and solid-state storage.</li> <li>• Learning about utility software and its role in system maintenance (e.g., antivirus, disk cleanup).</li> </ul>	<ul style="list-style-type: none"> <li>• Researching and comparing different types of software and hardware devices.</li> <li>• Understanding how operating systems manage hardware and software resources.</li> <li>• Comparing the features of different storage devices (e.g., CDs, hard drives, USBs).</li> <li>• Describing how different storage methods work (optical, flash memory).</li> <li>• Conducting research and comparing the performance of storage devices based on capacity, speed, and durability.</li> <li>• Categorising software as either system or utility software based on functionality.</li> </ul>	<ul style="list-style-type: none"> <li>• Application Software</li> <li>• Utility Software</li> </ul>	
Trinity 1	Photoshop	<ul style="list-style-type: none"> <li>• Understanding online safety and how to manage personal data on social networks.</li> <li>• Knowledge of copyright laws and their implications in digital content creation.</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying safe and unsafe behaviors on social media profiles.</li> <li>• Using Photoshop tools such as Content Aware</li> </ul>	<ul style="list-style-type: none"> <li>• E-Safety</li> <li>• Copyright</li> <li>• Photoshop</li> <li>• Layers</li> <li>• Clone tool</li> </ul>	N/A

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		<ul style="list-style-type: none"> <li>• Basics of Photoshop layout and interface.</li> <li>• How layers work in image editing and how to combine multiple layers for realistic effects.</li> <li>• Understanding text tools in Photoshop and how to effectively use them to create professional designs.</li> <li>• Recognising the ethical implications of altering images in media (e.g., using Liquify and Burn tools).</li> <li>• Combining multiple tools to alter images and create desired effects.</li> <li>• The importance of proper text selection for design (e.g., fonts, colors, and sizes based on the audience).</li> </ul>	<p>Fill, Clone, Liquify, and Magic Wand.</p> <ul style="list-style-type: none"> <li>• Editing images by applying layers, filters, and effects.</li> <li>• Combining images and using the magic wand and lasso tools to create realistic image composites.</li> <li>• Creating logos using text tools and applying text effects for different projects.</li> <li>• Modifying images with tools like Spot Healing Brush, Patch Tool, and Burn Tool to alter appearance.</li> <li>• Enhancing and manipulating images using advanced tools like Liquify and Burn.</li> <li>• Designing various publications (e.g., posters, leaflets) on online safety or social media risks.</li> </ul>	<ul style="list-style-type: none"> <li>• Content Aware Fill</li> <li>• Spot Healing Brush</li> <li>• Burn tool</li> </ul>	
Trinity 2	Flowol	<ul style="list-style-type: none"> <li>• Understanding the terms algorithm and flowchart.</li> <li>• Identifying and using common flowchart symbols (e.g., process, decision, start/stop).</li> </ul>	<ul style="list-style-type: none"> <li>• Creating flowcharts for various real-world scenarios.</li> <li>• Designing algorithms using flowcharts for</li> </ul>	<ul style="list-style-type: none"> <li>• Algorithm</li> <li>• Flowchart</li> <li>• Input/Output</li> <li>• Subroutine</li> </ul>	N?A

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		<ul style="list-style-type: none"> <li>• The role of control technology in everyday systems (e.g., traffic lights, home automation).</li> <li>• Understanding how inputs can be used to control outputs in automated systems.</li> <li>• The purpose and use of subroutines to make control systems more efficient.</li> <li>• Using variables in control systems to store and manipulate data (e.g., counting loops).</li> <li>• Creating control systems with multiple interacting flowcharts.</li> <li>• How flowcharts are used in real-world control systems (e.g., trains, bridges, traffic lights).</li> </ul>	<p>tasks like making a cup of tea and setting passwords.</p> <ul style="list-style-type: none"> <li>• Using Flowol software to create flowcharts that control inputs and outputs in simulations.</li> <li>• Creating flowcharts in Flowol to simulate control systems like flashing lights and crossing patrols.</li> <li>• Developing subroutines in Flowol to manage repetitive tasks such as lighting sequences or motor control.</li> <li>• Creating and manipulating variables in Flowol to control complex systems like a big wheel or lighthouse.</li> <li>• Designing and refining flowcharts to manage complex systems like train simulations with multiple inputs.</li> <li>• - Troubleshooting and debugging flowcharts to ensure accurate simulation behavior.</li> </ul>	<ul style="list-style-type: none"> <li>• Control technology</li> <li>• Variable</li> <li>• Decision</li> <li>• Process</li> <li>• Sequence</li> </ul>	
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