



# Curriculum Plan (Year 11 Computer Science)

Year 11 GCSE Computer Science	Knowledge <i>(Topics covered, NC links)</i>	Key assessments	Subject Skills	Literacy and Numeracy opportunities	School values	Extra-curricular opportunities	Personal development <i>(SMSC, Fundamental British values, Careers guidance, healthy living, Citizenship, equality and diversity, financial capability, preparation for next stage)</i>
Term 1	Defensive design considerations Purpose of translators Tools and facilities of IDEs CPU Primary and secondary storage Binary, denary, hex Binary addition, shift ASCII, Unicode Images, sound and compression Types of networks, hardware and performance Client server vs peer to peer The internet, IP and MAC addresses Star and mesh topologies Testing Refining algorithms Programming practice	Assessment 1 – Topics 1.1,1.2  Assessment 2 – Topics 2.3, 2.5	Algorithmic designing, writing, testing and evaluating. Knowledge retrieval practice. Applying knowledge of networks to identify threats and how to prevent them. How computers work, and following a the journey data takes from being entered to being stored in a computer	Mathematical equations to be used in algorithms.  Maths required for number system conversions and units.  Definitions.  Looking at 2 <sup>nd</sup> tier words in exam questions and relating that to how to structure the answer.	Resilience – persevering with challenging algorithms  Aspiration – Developing simple statements on how networks can be threatened to an analysis on how they could prevent the threat	Codecademy website to develop programming  Problem solving in day to day life	Develop an understanding on how to solve. Creating a diverse knowledge in computing to help with future careers involving technology.  Understand how the internet actually works. Develop an understand on how different devices connect to each other to form networks and links to transfer data like websites and emails, linking to lots of real life examples.



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	Arrays, file handling, string manipulation						
Term 2	<p>Protocols and layers</p> <p>Network threats</p> <p>Preventing vulnerabilities</p> <p>Sequence, selection, iteration</p> <p>Flowcharts</p> <p>Pseudocode</p> <p>Tracetables</p> <p>Operating systems</p> <p>Utility software</p> <p>Open source vs proprietary software</p> <p>Laws</p> <p>Ethics</p> <p>Abstraction and decomposition</p> <p>Algorithmic thinking</p> <p>Searching and sorting algorithms</p> <p>Data types and SQL</p> <p>Boolean algebra</p>	<p>Assessment 3 – Topics 1.2, 1.3, 1.4</p> <p>Assessment 4 – 2.1, 2.2, 2.3</p> <p>Assessment 5 – 1.5, 1.6</p>	<p>Algorithmic designing, writing, testing and evaluating.</p> <p>Knowledge retrieval practice.</p> <p>Applying knowledge of networks to identify threats and how to prevent them.</p> <p>How computers work, and following a the journey data takes from being entered to being stored in a computer</p>	<p>Mathematical equations to be used in algorithms.</p> <p>Boolean logic and algebra</p> <p>Definitions.</p> <p>Looking at 3<sup>rd</sup> tier words specific to the subject.</p>	<p>Aspiration – Looking at new ways to develop algorithms and how there can be many different ways to create a working solution.</p> <p>Community – Looking at how different groups of people may be impacted by technology and the impacts on this</p>	<p>Keeping up to date on news articles and stories around technology to develop a range of examples to help with ethical questions</p>	<p>Understand how the internet actually works. Develop an understand on how different devices connect to each other to form networks and links to transfer data like websites and emails, linking to lots of real life examples.</p> <p>Seeing how technology is having an effect on the current climate and culture in the UK and the World.</p> <p>Applying their knowledge on technology to help devise ways that could be put into place to help support the environment and culture of the UK and the World.</p>
Term 3	<p>Practice papers</p> <p>Exam technique</p> <p>Exam preparation</p>	<p>Assessment 6 – Topics 2.1, 2.2, 2.4</p> <p>Practice papers</p>	<p>Knowledge retrieval practice. Exam technique practice. Subject specific definitions.</p>	<p>Writing practice of exam questions. Long answer question structures.</p>	<p>Resilience – Energy building for the exam.</p>	<p>Think about future career options and next steps.</p> <p>Practice programming</p>	<p>Have a look at A-level/apprenticeship courses. Research into the courses, providers and areas.</p>



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				Practicing timings of answers.	Aspiration – To appreciate the hard work they have put in over the year and see the results of their work in their final exams	tasks outside of school too.	
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