

**Computer Science Curriculum Map**

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 7</b>	<i>Title</i>	Computing Fundamentals	Website Creation	Ebook and Digital Tour creation	Computer Aided Design	Programming essentials: MicroBits	Game Changers
	<i>Knowledge</i>	<ul style="list-style-type: none"> <li>Google Suite</li> </ul>	<ul style="list-style-type: none"> <li>Website Design</li> </ul>	<ul style="list-style-type: none"> <li>Creation of digital projects</li> </ul>	<ul style="list-style-type: none"> <li>Creation of digital models</li> </ul>	<ul style="list-style-type: none"> <li>Writing algorithms</li> </ul>	<ul style="list-style-type: none"> <li>Game design and creation</li> </ul>
	<i>Skill</i>	<ul style="list-style-type: none"> <li>Planning</li> <li>Creativity</li> <li>Evaluation</li> <li>Communication</li> <li>Presentation</li> <li>Image Editing</li> <li>Publishing</li> </ul>	<ul style="list-style-type: none"> <li>Research</li> <li>Image manipulation</li> <li>Photo Editing</li> <li>Google sites</li> </ul>	<ul style="list-style-type: none"> <li>Identify the advantages and disadvantages of electronic books</li> <li>Apply visual design principles</li> <li>Add / import content</li> <li>Edit / manipulate objects</li> <li>Publish an ebook</li> <li>Share links / change sharing settings</li> <li>Use a digital tour program</li> <li>Embed (using iframe) content into an ebook</li> </ul>	<ul style="list-style-type: none"> <li>Insert object into workplane</li> <li>Zoom in / out</li> <li>Change view angle</li> <li>Manipulate object</li> <li>Cut / merge objects</li> <li>Combine simple objects to create complex ones</li> <li>Remove unnecessary elements</li> <li>Scale objects</li> <li>Export and share files</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solving</li> <li>Programming</li> <li>Maths</li> <li>Sequencing</li> <li>Loops</li> <li>If Statements</li> <li>De Bugging</li> </ul>	<ul style="list-style-type: none"> <li>Use computational abstractions</li> <li>Model state of real world problems</li> <li>Use a programming language to solve computational problems</li> <li>Understand simple Boolean logic</li> </ul>
<b>Year 8</b>	<i>Title</i>	CyberCrime and Cyber Security	Introduction to Python	Networks	Spreadsheet Modelling	HTML	Back To The Future
	<i>Knowledge</i>	<ul style="list-style-type: none"> <li>E-Safety</li> </ul>	<ul style="list-style-type: none"> <li>Developing programs</li> <li>Algorithms</li> </ul>	<ul style="list-style-type: none"> <li>Identify networks and their advantages and disadvantages</li> <li>How computers are connected</li> </ul>	<ul style="list-style-type: none"> <li>Spreadsheet design</li> </ul>	<ul style="list-style-type: none"> <li>Website creation</li> </ul>	<ul style="list-style-type: none"> <li>Knowledge of key historical figures such as Charles Babbage and Sir Tim Bernes-Lee</li> </ul>
	<i>Skill</i>	<ul style="list-style-type: none"> <li>Planning</li> <li>Evaluating</li> <li>Writing</li> <li>Creating presentations</li> <li>Google Suite</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solving</li> <li>Programming</li> <li>Maths</li> <li>Sequencing</li> <li>Loops</li> <li>If Statements</li> <li>De Bugging</li> </ul>	<ul style="list-style-type: none"> <li>Research</li> <li>Describe and retain information</li> </ul>	<ul style="list-style-type: none"> <li>Maths</li> <li>Formula writing</li> <li>Formatting</li> <li>Design</li> </ul>	<ul style="list-style-type: none"> <li>Tags</li> <li>HTML</li> <li>Programming</li> <li>Sequencing</li> </ul>	<ul style="list-style-type: none"> <li>Boolean Logic</li> <li>Problem solving</li> <li>Design</li> <li>Research</li> </ul>
<b>Year 9</b>	<i>Title</i>	Computational Thinking	Python Next Steps	Binary Bits and Bobs	Systems Architecture	Artificial Intelligence	Scratch Scrolling Game Maker
	<i>Knowledge</i>	<ul style="list-style-type: none"> <li>Algorithms</li> </ul>	<ul style="list-style-type: none"> <li>Iteration</li> <li>Selection</li> <li>Data Structures</li> </ul>	<ul style="list-style-type: none"> <li>Binary Conversion</li> <li>Binary Arithmetic</li> </ul>	<ul style="list-style-type: none"> <li>Memory types</li> <li>The CPU and the factors that affect its performance</li> </ul>	<ul style="list-style-type: none"> <li>Machine Learning</li> <li>Pattern recognition</li> </ul>	<ul style="list-style-type: none"> <li>Game design</li> <li>Programming fundamentals</li> </ul>
	<i>Skill</i>	<ul style="list-style-type: none"> <li>Problem Solving</li> <li>Programming</li> <li>Computational Thinking</li> <li>Maths</li> <li>Sequencing</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solving</li> <li>Programming</li> <li>Maths</li> <li>Sequencing</li> <li>Loops</li> <li>If Statements</li> <li>De Bugging</li> </ul>	<ul style="list-style-type: none"> <li>Maths</li> <li>Problem solving</li> <li>Boolean logic</li> <li>Research</li> </ul>	<ul style="list-style-type: none"> <li>Research</li> <li>Describe and retain information</li> <li>Identifying computer components</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solving</li> <li>Language processing</li> <li>Structured data identification</li> <li>Decision making</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solving</li> <li>Programming</li> <li>Sequencing</li> <li>Loops</li> <li>If Statements</li> <li>De Bugging</li> </ul>

Year 10	<i>Title</i>	Fundamentals of algorithms	Programming	Fundamentals of data representation	Programming Techniques	Relational databases and structured query language(SQL)	Computer Systems
	<i>Knowledge</i>	<ul style="list-style-type: none"> <li>Representing Algorithms</li> </ul>	<ul style="list-style-type: none"> <li>Developing programs</li> </ul>	<ul style="list-style-type: none"> <li>Understanding how data is represented within computers</li> </ul>	<ul style="list-style-type: none"> <li>Developing programs</li> </ul>	<ul style="list-style-type: none"> <li>Databases and SQL</li> </ul>	<ul style="list-style-type: none"> <li>CPU and cpu architecture</li> </ul>
	<i>Skill</i>	<ul style="list-style-type: none"> <li>Algorithmic thinking</li> <li>Interpreting, correcting and completing algorithms</li> <li>Flowcharts and pseudocode</li> <li>Writing and refining algorithms</li> </ul>	<ul style="list-style-type: none"> <li>Iteration</li> <li>Selection</li> <li>Data Structures</li> <li>Problem Solving</li> <li>Programming</li> <li>Maths</li> <li>Sequencing</li> <li>Loops</li> <li>De Bugging</li> <li>Variables</li> </ul>	<ul style="list-style-type: none"> <li>Binary and Hex conversions</li> <li>Binary arithmetic</li> <li>Character encoding</li> <li>Images</li> <li>Sound</li> <li>Encryption</li> </ul>	<ul style="list-style-type: none"> <li>Iteration</li> <li>Selection</li> <li>Data Structures</li> <li>Problem Solving</li> <li>Programming</li> <li>Maths</li> <li>Sequencing</li> <li>Loops</li> <li>De Bugging</li> <li>Variables</li> </ul>	<ul style="list-style-type: none"> <li>Databases</li> <li>Programming</li> <li>SQL Statements</li> </ul>	<ul style="list-style-type: none"> <li>Components of a computer system</li> <li>Purpose of the CPU</li> <li>Types of storage</li> <li>Embedded systems</li> </ul>
Year 11	<i>Title</i>	Fundamentals of Computer Networks	Cyber Security	Ethical, Legal and Environmental impacts of digital technology on wider society	Revision	Exams	
	<i>Knowledge</i>	<ul style="list-style-type: none"> <li>Computer networks including topologies</li> </ul>	<ul style="list-style-type: none"> <li>Cyber Security threats and prevention methods</li> </ul>	<ul style="list-style-type: none"> <li>Understand current ethical, legal and environmental impacts and risks of digital technology on society.</li> </ul>			
	<i>Skill</i>	<ul style="list-style-type: none"> <li>LAN/WAN</li> <li>Topologies</li> <li>Wired/Wireless</li> <li>Protocols</li> <li>Network security</li> </ul>	<ul style="list-style-type: none"> <li>Defining</li> <li>Describing</li> <li>Understanding of malware</li> </ul>	<ul style="list-style-type: none"> <li>Data privacy and data protection laws.</li> <li>Intellectual property rights</li> <li>Digital divide</li> <li>Regulations and standards in technology.</li> </ul>			