

Computer Science Curriculum Map

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

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