



Curriculum map – Computer Science

YEAR 9 TOPIC(s)	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	<p>9.1 Computing Essentials</p> <ul style="list-style-type: none">• Review of Journey so far• The Math's of Computer Science<ul style="list-style-type: none">○ Binary Units○ Denary to hex• Data Representation<ul style="list-style-type: none">○ Images○ Sound○ Compression	<p>9.1 Computing Essentials</p> <ul style="list-style-type: none">• The CPU & RAM• Storage• Networks a project<ul style="list-style-type: none">○ LAN/WAN○ Hardware○ Protocols• Purpose of operating systems• Peripheral Devices for disabilities	<p>9.2 Problem Solving with Code</p> <ul style="list-style-type: none">• Variables and Constants• Datatypes• Selection• Arithmetic Operators• Iteration While• Iteration For	<p>9.2 Problem Solving with Code</p> <ul style="list-style-type: none">• Careers Lesson (Options talk/lesson)• Arrays• Turtle• Independent Programming Task	<p>9.3 Dragons Den a Social Media Project</p> <ul style="list-style-type: none">• Social Media and Mental Health• Privacy• Laws	<p>9.4 Advanced digital skills</p> <ul style="list-style-type: none">• Flowcharts• Vector Graphics• Designing icons• Working with Text• Movie Poster Design

YEAR 9	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
What students will know	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> • Size order of binary units • Binary representation of images and sound • What is compression • The difference between lossless and lossy compression <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> • How pixilation of bitmap images occurs and how this affects the quality of images. <p><u>Strand 3 Digital Literacy</u></p> <ul style="list-style-type: none"> • Awareness of when using free programs such as Pixel Art, not to click to be taken to other web sites. 	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> • The purpose of the CPU • The names of the registers of the CPU • The purpose of RAM • The definition of volatile • The purpose of secondary storage • Three types of storage • The difference between a LAN and WAN • Where a LAN and WAN might be used. • Advantages of networks • Purpose of Network Hardware • Names of the protocols • Name the purposes of an operating system (MUMPUPF) • Peripheral devices – need device drivers. <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> • How people with disabilities can access and use computer systems. <p><u>Strand 3 Digital Literacy</u></p>	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> • The difference between a constant and a variable • What is meant by casting • The arithmetic operators • MOD gives the remainder of division • DIV gives the whole number from division <p><u>Strand 2 Information Technology</u></p> <p><u>Strand 3 Digital Literacy</u> Why mobile phone numbers are stored as strings.</p>	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> • Arrays are identifiers, which hold multiple items of data. • Arrays are 0 indexed <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> • Different careers in Computer Science. <p><u>Strand 3 Digital Literacy</u></p> <p>Maths links (Usually need to teach as it is used just before Maths teach it. Advice given from the Maths department on this.</p> <ul style="list-style-type: none"> • The outside angles of a shape add up to 360 degrees 	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> • How social media uses algorithms to show you content • How cookies are used to gather data about you online. <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> • How the content on social media can impact self-esteem • The symptoms of anxiety • What is meant by privacy online /the impacts of being connected to the internet <p><u>Strand 3 Digital Literacy</u></p> <ul style="list-style-type: none"> • What is meant by internet censorship • The impact of online life on society. 	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> • The final flowchart symbol – Sub-program. • How computer science can be used in innovative ways in other industries (food) • What a UX designer and Graphic Designer do. • A vector graphic uses coordinates to scale. • How ASCII links to data types “a” character and “name” is a string. <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> • Hex numbers can be used to represent colors consistently <p><u>Strand 3 Digital Literacy</u></p> <ul style="list-style-type: none"> • Use of designer websites to access popular colour pallets.

YEAR 9	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
What students will be able to do	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> Convert between Binary units e.g. Kb to GB Convert between Denary and Hexadecimal and vice versa <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> How to export images as file types (PNG/SVG/JPEG) Use sharing functions on google slides to peer assess and remove sharing on google slides. <p><u>Strand 3 Digital Literacy</u></p> <ul style="list-style-type: none"> Create Pixel Art using web-based software. 	<p><u>Strand 1 Computer Science</u></p> <p><u>Strand 2 Information Technology</u></p> <p><u>Strand 3 Digital Literacy</u></p> <ul style="list-style-type: none"> Create and deliver electronic presentations collaboratively. Save a GIF and insert it into a presentation. 	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> Cast between different data types Program using selection independently (if, elif and else) Use Boolean Operators in Selection Statements. Solve mathematical programming problems using selection and arithmetic operators (MOD and DIV) Independently solve intermediate programming problems with While and For loops <p><u>Strand 2 Information Technology</u></p> <p><u>Strand 3 Digital Literacy</u></p>	<p><u>Strand 1 Computer Science</u></p> <ul style="list-style-type: none"> Solve a programming problem using arrays and random choice. How to create and call a sub program. How to use the Turtle library <p><u>Strand 2 Information Technology</u></p> <p><u>Strand 3 Digital Literacy</u></p> <ul style="list-style-type: none"> Independently using Word to record the progress of the development of a program for example using screen shot and saving work sensibly. 	<p><u>Strand 1 Computer Science</u></p> <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> Strategies to have a positive approach to social media <p><u>Strand 3 Digital Literacy</u></p> <ul style="list-style-type: none"> Students will use a range of software to create a project /information about the social media project. Students will choose from a range of available software to choose the right software for their project. 	<p><u>Strand 1 Computer Science</u></p> <p>Independently create a flowchart to a self-directed algorithm.</p> <p><u>Strand 2 Information Technology</u></p> <ul style="list-style-type: none"> Accessing flowchart shapes on PowerPoint <p>Graphics:</p> <ul style="list-style-type: none"> Use layers Use the pen tool Use the magic wand tool Export images Use Hex colors to set up a swatch pallet Use the text tools Use Blending Options to create a glow effect with font. <p><u>Strand 3 Digital Literacy</u></p>