Year 8 Curriculum Plan
Computing
IT   Computer Science Digital Literacy

Threads:
We use threads to signpost groups of units that link to one another, that together build a common body of knowledge over time. We use the term 'thread' to help us bring to mind the visual concept of a thread weaving through the curriculum:

Algorithms & data structures	Artificial intelligence	Computer systems	Creating media	Data and information	Design and development	Effective use of tools	Impact of technology	Networks	Programming	Safety and security

	Autumn 1 8.1 - Understanding computers 2	Autumn 2 8.2 - App design Some elements of DL	Spring 1 8.3 - Networks	Spring 2 8.4 - Creating a digital animation	Summer 1 8.5 - Advanced spreadsheets	Summer 2 8.6 - Webpage design Some elements of DL
PRIOR LEARNING	**7.3 - Understanding computers 1** Students will build on unit 7.1 when they developed a basic understanding of the past, present and future of computer systems; the I/O model; the internal components and simple binary. **Threads:** Computer systems Data and information	**7.5 - Block-based programming** Students will build on their prior learning from unit 7.5 when they used blocks to code. **7.2 – Digital media** Students will build on their learning from unit 7.2 when they created storyboards; responded to a client brief and learned about visual identity.	**7.1 – UCSER** Students will build on prior learning from unit 7.1 when they learned about the school network, how to stay safe as well as using Office 365 packages. **7.2 – Using media** Students will draw upon their skills from unit 7.2 when they learned about the importance of target audience and graphic design skills. **KS2 IT** Some students, identified in the	**8.2 - App design** Students will build on unit 8.2 when they learned about storyboards and design elements. **7.2 - Using media** Students will build on prior learning from unit 7.2 when they learned how to respond to a client brief by producing multimedia.	**7.6 - Introduction to spreadsheets** Students will build on their prior learning from unit 7.6 when they learned spreadsheet basics (structure, formulae, functions, formatting, graphs, modelling). **7.4 - Computational thinking and algorithms** Students will draw on their prior learning of algorithms (flowcharts) as they plan out their quiz.	**8.3 - Networks** Students will build on their prior learning from unit 8.3 when they explored the Internet, WWW and the languages of the web. **8.2 – App design** Students will build on their prior learning from unit 8.2 when they learned about event-driven programming as this will help them understand HTML, JavaScript and CSS.

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		Threads: Creating media Design and development Programming	**KS2 Computer Science:** Students will build on any basic knowledge of networks from KS2, plus their own personal experience from setting up their home networks, identified in the baseline test. **Threads:** Computer systems Creating media Effective use of tools Networks	baseline test, will have already created an animation through the 2Animate unit at KS2. **Threads:** Creating media Design and development	**Threads:** Data and information Effective use of tools	**Threads:** Creating media Design and development Programming
KNOWING WHAT…	*Embedded systems: concepts and real-life examples. *CPU: role, fetch-decode-execute cycle, component interaction. *Logic gates: types, truth tables, electronic circuits. *Binary: importance, conversions, binary addition	*Apps – purpose, effective features, online safety *Client brief – understanding and responding *Storyboarding – planning app design and interactivity *App development – designing screens, coding interactivity and testing functionality and usability	*What is a computer network? *IP addressing and switches *Domain names and DNS *Packets and packet switching *The internet *Connecting to the internet	*Animation – types and purposes *Client brief – understanding and responding *Storyboarding - planning the animation *Sourcing assets – finding and repurposing *Animation techniques – motion paths, onion skinning, tweening, frame-by-frame *Impact of legislation – copyright, intellectual property, fair use	*Spreadsheet structure, formulae, and functions. *Drop-down lists, VLOOKUP, and sorting data. *Check boxes. *Macros. *Logical operators and the REPT function.	*Layout elements and web page design (HTML tags and elements) *Basic styling using CSS *Images and lists *Hyperlinks and navigation *Testing a website for functionality, usability, and design.

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KNOWING HOW…	*Describe Von Neumann architecture. *Explain main memory and secondary storage. *Categorize storage devices (magnetic, optical, solid state). *Identify types of operating systems and their functions	*Explain app purpose, effectiveness and online safety *Design wireframes, storyboards and interactvity *Respond to a client brief *Develop and test the app against functionality and usability criteria	*Explain what a computer network is. *Explain IP addressing and the role of switches. *Describe domain names and how DNS works. *Explain what packets are and how packet switching works. *Describe the internet and how it functions. *Explain how to connect to the internet.	*Describe animation types and planning. *Analyse and respond to a client brief. *Design storyboards to plan the animation. *Source, edit, and prepare assets. *Apply animation techniques in Wick Editor. *Create and test the animation.	*Label a spreadsheet (row, column, cell, cell references, active cell). *Use basic formulae to perform calculations on data (+,-,*,/). *Use basic functions (SUM, AVERAGE, MIN, MAX, COUNT, COUNTA, COUNTIF). *Use drop-down lists, VLOOKUP, and sort data. *Use check boxes. *Use macros. *Use logical operators and the REPT function.	*Use HTML tags and elements to design and structure a webpage. *Apply basic CSS for styling. *Insert and format images and create lists. *Add hyperlinks and create navigation bars. *Test a website for functionality, usability, and design.
ASSESSMENT	Three knowledge checks (theory): 1.Embedded v general-purpose systems 2.The CPU 3.Logic gates and binary	Two knowledge checks (practical): -Design an app -Coding an app	Two knowledge checks (one theory, one practical): 1.Explain the purpose and types of computer networks 2.Advise the community how to become more confident users of the internet (community guide)	Two knowledge checks (practical): 1.Pre-production planning documentation for a 2D animation 2.Creating an effective 2D animation	One knowledge check (practical): 1.Create a spreadsheet for a hotel's finance system	Two knowledge checks (practical): 1.Plan a webpage 2.Build a webpage

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