Computing Curriculum: Key Skills & Progression

Year Group	Unit Title	National Curriculum Strand	Key Skills & Progression
Year 1 (KS1)	1. Digital Painting	Information Technology / Creating Media	**Foundational Skills:** Developing basic mouse control or touch-screen coordination. Choosing appropriate digital tools (brush size, colour pickers) to intentionally create purposeful art. Learning the importance of the 'undo' tool when correcting mistakes.
	2. Digital Writing	Information Technology / Creating Media	**Foundational Skills:** Introducing keyboard literacy. Children learn to locate and use keys (spacebar, backspace, shift) to enter and modify simple text strings. Understanding how to independently save a file to a local drive.
	3. Creating Animations in Programs	Computer Science / Programming	**Foundational Skills:** Discovering that a digital animation is built from a sequence of static frames. Children construct very simple, chronological block commands to animate a sprite on screen.
Year 2 (KS1)	1. Information Technology in the World Beyond School	Digital Literacy	**Progression:** Moving from personal device usage to recognizing technology in the wider community (e.g., barcodes, traffic lights). Identifying how digital systems help us solve real-world problems.
	2. Using IT to Organise and Present Data	Information Technology / Data	**Progression:** Advancing from basic physical counting to entering data into simple software systems. Children create basic digital tally charts and pictograms to sort and categorize information.
	3. Building Sequences in Programs	Computer Science / Programming	**Progression:** Moving beyond single action steps. Children must logically order multiple block commands together to complete a specific path, testing their code as they go and predicting outcomes. Introduced to basic 'debugging'.
Year 3 (Lower KS2)	1. Computer Networks	Computer Science	**Progression:** First explicit look at hidden infrastructure. Demystifying the school network by identifying physical components (switches, server, wireless access points) and exploring how data travels locally.
	2. Stop-frame Animation	Information Technology / Creating Media	**Progression:** Stepping up from software-generated movement to hands-on media production. Capturing physical frames systematically, controlling framerates for smooth playback, and editing layers.

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	3. Programming Sequence Using Sound	Computer Science / Programming	**Progression:** Combining sequential logic with multimedia outputs. Activating sound files within code scripts, manipulating sound parameters, and fixing sequence ordering errors.
	4. Organising Data Using Databases	Information Technology / Data	**Progression:** Moving from visual pictograms to structured digital database repositories. Children learn to use search features, apply single-criteria filters, and understand data fields/records.
	5. Desktop Publishing	Information Technology / Creating Media	**Progression:** Moving beyond simple Word typing. Children learn to manipulate design layouts, wrap text around images, resize graphical elements, and evaluate layouts based on an explicit target audience.
	6. Events and Actions in Programs	Computer Science / Programming	**Progression:** Transitioning from autonomous code scripts to user-driven software. Coding specific event-triggers (e.g., 'when key pressed') to orchestrate dynamic on-screen actions.
Year 4 (Lower KS2)	1. The Internet	Computer Science / Digital Literacy	**Progression:** Extending the network concept globally. Broadening knowledge from local school servers to the wider Internet ecosystem, identifying web routers, understanding the difference between the Internet and the WWW, and practicing secure search strategies.
	2. Audio Production	Information Technology / Creating Media	**Progression:** Advanced digital storytelling. Recording live audio tracks, mixing and splicing waveforms, eliminating background noise, and exporting finished audio files.
	3. Repetition in Programs	Computer Science / Programming	**Progression:** Introduction of algorithmic efficiency. Transitioning from long, repetitive linear code blocks to structural loop constructs (count-controlled and infinite iteration).
	4. Data Logging	Information Technology / Data	**Progression:** Integrating Computing with empirical Science. Using physical data-loggers and sensors to capture external stimuli (light, temperature) automatically over a period, and interpreting data intervals.

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	5. Photo Editing	Information Technology / Creating Media	**Progression:** Critical digital literacy. Learning how software can alter images (cropping, layering, colour filtering) while questioning the ethical impact of digitally manipulated media in society.
	6. Using Repetition in Programming to Create a Game	Computer Science / Programming	**Progression:** Synoptic application of skills. Combining event-handling from Year 3 with repetition loops to design, test, code, and evaluate a fully interactive primary video game.
Year 5 (Upper KS2)	1. Introduction to Computer Systems	Computer Science	**Progression:** Deep system exploration. Distinguishing hardware components from operating software. Understanding how computers execute instructions via inputs, processes, and outputs.
	2. Video Production	Information Technology / Creating Media	**Progression:** Collaborative media creation. Storyboarding, capturing stable video footage, organizing camera angles, trimming clips, inserting transitions, and processing audio overlays.
	3. Exploring Selection in Physical Computing	Computer Science / Programming	**Progression:** Crossing the bridge between software logic and hardware devices. Writing conditional algorithms (IF-THEN statements) to interact with physical components like external LEDs and motors.
	4. Flat-file Databases	Information Technology / Data	**Progression:** Building database architecture from scratch. Designing records with distinct data types (text, numbers, Boolean), and constructing multi-layered search queries using comparison symbols (>, <, =).
	5. Introduction to Vector Graphics	Information Technology / Creating Media	**Progression:** Moving from traditional pixel images to scalable mathematics-based imagery. Manipulating vector geometric paths, grouping/ungrouping shapes, and adjusting anchor nodes.
	6. Using Selection in Programming to Develop a Quiz	Computer Science / Programming	**Progression:** Branching programmatic logic pathways. Writing scripts containing 'if-then-else' conditional control structures to evaluate user input dynamically and calculate a final score.
Year 6 (Upper KS2)	1. Communication and the Internet	Computer Science / Digital Literacy	**Progression:** Preparing for Secondary school readiness. Investigating how data packets move across the globe via protocols, examining digital footprint safety, and using online cloud collaboration tools effectively.

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	2. Web Page Creation	Information Technology / Creating Media	**Progression:** Understanding structural page layouts. Writing basic structural blueprints, creating clear navigational user pathways, maintaining target audience consistency, and embedding hyperlinks.
	3. Using Variables in Programming to Develop a Game	Computer Science / Programming	**Progression:** The biggest logical leap in primary programming. Introducing abstract named containers (variables) to dynamically track, update, and recall changing values (such as health points, timers, or scores) within a program loop.
	4. Introduction to Spreadsheets	Information Technology / Data	**Progression:** Introducing professional data modelling. Working within rows, columns, and cells. Writing basic formulas (SUM, AVERAGE), applying absolute/relative cell references, and outputting dynamic graphical charts.
	5. 3D Modelling	Information Technology / Creating Media	**Progression:** Spatial design engineering. Translating flat shapes into dimensional spaces by extruding, combining, intersecting, and rotating objects along X, Y, and Z axes.
	6. Sensing Movement with Physical Computing	Computer Science / Programming	**Progression:** Primary Capstone project. Synthesizing variables, conditions, loops, and physical tilt or acceleration sensors to create highly responsive real-world prototypes.