Key Stage 3 Curriculum Vision

Our Key Stage 3 curriculum is structured around three core threads: Digital Literacy and IT, Digital Media and Computer Science. Fully aligned with the UK National Curriculum, our spiral framework ensures students revisit each thread annually. As they progress, they build incremental technical expertise, master industry-standard software, and develop vital, transferable life skills.

The curriculum is designed to ensure that students progress by knowing and remembering more across these interconnections. Knowledge within each thread not only supports but also enhances the others, ensuring that students receive a well-rounded education in computing that equips them for academic success, future career opportunities, and responsible digital citizenship.

Year 7 overview

Year 7 – Topic 1

Topic Title	7.1 - E-Safety & Website Development (Digital Media)
Pupils will know	● The acceptable use policy for the school computer network and Chromebooks. ● The primary risks to personal safety online (cyberbullying, grooming, digital footprints, phishing). ● The structural components of a modern web page (headers, navigation menus, body text, assets, hyperlinks).
Pupils will know how to (procedural knowledge)	● Log into and navigate the internal school network and Google Workspace securely. ● Create, structure, and link web pages using Google Sites. ● Embed multimedia e-safety resources, images, and text boxes onto a functional website. ● Ensure presentations or pages are accessible by using appropriate fonts, and colour schemes. ● Publish a digital artifact safely to a controlled audience.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● Safe network usage, professional communication etiquette, and basic cloud file management principles. ● Websites are structured networks of interconnected documents linked by URLs.
Prior knowledge	● Transitional skills from Key Stage 2/Year 6, including basic familiarity with a keyboard, mouse, and desktop navigation as well as prior E-Safety learning. ● Basic understanding of the inherent risk of using the internet.

Future knowledge	**Linked Units:** 8 - Computer Systems / 9 Content Creation / 9 Computer Systems
Key vocabulary	E-Safety, Digital Footprint, Cyberbullying, Phishing.

Year 7 – Topic 2

Topic Title	**7.2 - Coding & Physical Computing (Computer Science)**
Pupils will know	• What an algorithm is (a precise, step-by-step set of instructions to solve a problem). • The core programming constructs: Sequence (order of execution) and Selection (decision making using conditional statements). • A condition is an expression evaluated as either true or false. • The difference between a software program and hardware components (microcontrollers).
Pupils will know how to (procedural knowledge)	• Assemble functional blocks of code to solve logic puzzles within Hour of Code. • Write, flash, and test block-based programs onto a physical Micro:bit microcontroller. • Program hardware components using inputs (buttons, light sensors) to trigger outputs (LED grids, buzzers). • Break down complex computational thinking problems into bite-sized logic puzzles during the Bebras competition.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	• Introduce the fundamental constructs of algorithmic thinking, input / output. • How abstract software commands translate directly into physical electronic/robotic outputs.
Prior knowledge	Basic understanding of instruction sequences and general interaction with software apps or basic games.
Future knowledge	**Linked Units:** 7 Games Development, 8 Games Development, 8 Coding, 9 Coding
Key vocabulary	Input, Output, Code, Algorithm, Sequence, Selection,

Year 7 – Topic 3

Topic Title	**7.3 - Office Applications (Digital Literacy / IT)**
Pupils will know	• The distinct functional purposes of word processors (Google Docs)

	versus spreadsheet models (Google Sheets). ● How spreadsheets organize numerical records using rows, columns, and explicit cell coordinates. ● How formatting and presentation can enhance data comprehension. ● Key word processing formatting features, including alignment, font hierarchy, and text layout. ● Ways to present and write documents can vary based on the needs of the specified target audiences.
Pupils will know how to (procedural knowledge)	● Build functional Google Sheets to manage core formulas (SUM, COUNTA, MAX, MIN, AVERAGE) and present data in a readable way. ● Construct basic formulas and functions in a spreadsheet. ● Write and present Google Docs in a way to appeal to and be appropriate for the relevant target audiences.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● Recognition that spreadsheets are the optimal tool for data management, processing and analysis ● How to adapt the tone, structure and visual layout of word documents to suit a range of audiences and their needs
Prior knowledge	Basic text editing and file saving skills established in earlier Year 7 modules and primary school.
Future knowledge	Cross curricular use of Chromebook
Key vocabulary	Word Processing, Spreadsheet, Formula, Function, SUM, Cell Reference, Font

Year 7 – Topic 4

Topic Title	**7.4 - Asset Creation (Digital Media)**
Pupils will know	● What makes logos memorable and relevant to a target audience ● The identity mechanics of branding, color theory, typography, and logo generation for a corporate client. ● The concept of layers ● Digital image manipulation techniques
Pupils will know how to (procedural knowledge)	● Create and manipulate digital media ● Export media into different applications ● Use relevant shapes, fonts and colours to appeal to the target audience ● Select, remove, alter and combine elements of images.
Core knowledge to know and remember to progress	● Selection tools in Photoshop ● Creation of shapes and use of colours in Illustrator

to later learning (foundational knowledge)	
Prior knowledge	Basic interactive use of painting applications and digital file saving.
Future knowledge	**Linked Units:** 7 Publication Design, 8 Image Editing, 9 Content Creation
Key vocabulary	Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Layers, Asset, Brand Identity, Target Audience, Export, Virtual Reality, Pixels, Pixelated, Merge, Selection Tool

Year 7 – Topic 5

Topic Title	**7.5 - Publication Design (Digital Media)**
Pupils will know	● The design principles of visual hierarchy, contrast, balance, and white space on a physical page. ● The requirements of designing for a target audience (colour choices, readability, language choices). ● How to continue to use the brand identity from the last unit to make the entire project have a cohesive flow
Pupils will know how to (procedural knowledge)	● Set up document canvas pages using margins, gridlines, and guides. ● Format multi-page content types like flyers, promotional brochures etc. ● Export layouts into distribution formats (PDF) while preserving embedded image asset quality.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● Visual hierarchy controls the order in which a user reads information on a page. ● Text boxes and asset containers must align to a consistent layout grid to look professional.
Prior knowledge	Basic text editing techniques from earlier units and primary school. Brand identity knowledge from the previous unit.
Future knowledge	**Linked Units:** 9 Publication Design
Key vocabulary	Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Layers, tri-fold, Export, Import, Typography, Visual Hierarchy, Text Wrapping, Grid Alignment, White Space

Year 7 – Topic 6

Topic Title	7.6 - Games Development (Computer Science)
Pupils will know	● The basics of level design, including terrain geometry, boundaries, camera behaviors, and user interaction mechanics. ● The rule-based execution pattern of "WHEN [Trigger] -> DO [Action]" logic nodes. ● The iterative software testing cycle: program, run, evaluate, debug.
Pupils will know how to (procedural knowledge)	● Sculpt 3D terrain environments, paint unique texturing patches, and place interactive objects within a virtual map. ● Program characters to navigate using input triggers (keyboard controls, gamepad sticks). ● Incorporate game rules such as scoring mechanics, health metrics, target collisions, and win/loss states. ● Identify execution glitches within visual instruction blocks and debug logic loops systematically.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● Programs run as continuous loops that check for inputs or state triggers on every frame. ● Debugging requires tracing step-by-step logic to pinpoint why code behaves unexpectedly.
Prior knowledge	Core computational concepts of sequence and selection established in Unit 7.2.
Future knowledge	**Linked Units**: 8 - Games Development
Key vocabulary	Kodu, Condition, Trigger, Event Loop, Debugging, Collision, Variable, Iteration, Path.

Year 8 overview

Year 8 – Topic 1

Topic Title	8.1 - Image Editing (Digital Media)
Pupils will know	• File formats suitable for images (JPEG, PNG, PSD). • Technical graphic concepts: opacity, contrast, hue, saturation, and layer masks.
Pupils will know how to (procedural knowledge)	• Utilise advanced selection tools (Magic Wand, Quick Selection, Pen Tool) to isolate complex shapes. • Apply non-destructive editing techniques using Adjustment Layers and Layer Masks. • Composite multiple independent images into a seamless, believable digital graphic. • Repair and touch up image blemishes or background elements using healing brushes and clone stamps.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	• Layer masks allow you to hide or reveal parts of a layer without permanently deleting pixels. • Composite images can be created using layers. • Tools can be used to edit either entire layers or small areas.
Prior knowledge	7 Asset Creation
Future knowledge	**Linked Units:** 9 Publication Design, 9 Content Creation
Key vocabulary	Photoshop, Layers, Selections, Filters, Masking, Blend Modes, Layer Mask, Adjustment Layer, Opacity, Saturation, Clone Stamp

Year 8 – Topic 2

Topic Title	8.2 Games Development (Computer Science)
Pupils will know	• How variables are used to store, update, and change data values (e.g., scores, health) during runtime. • The core programming construct of Iteration (loops): definite loops (repeat X times) vs. indefinite loops (repeat until/forever). • How "Event Broadcasting" enables independent code scripts and sprites to communicate with one another.
Pupils will know how to (procedural knowledge)	• Develop the fundamental concept of selection and iteration. • Construct complex, multi-level interactive games inside the Scratch

	environment. ● Initialise and dynamically change variables based on game events or user interaction triggers. ● Apply logic blocks together to build autonomous sprite physics (e.g., gravity, collision boundaries). ● Explore computational thinking and logic principles during the national Bebras challenge.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● A variable is a named memory location that stores a data value that can change while the program runs. ● Complex software depends on broadcasted events to coordinate multiple concurrent routines.
Prior knowledge	A variable is a named memory location that stores a data value that can change while the program runs. Programs follow algorithms directly.
Future knowledge	**Linked Units:** 8 Coding 9 Coding
Key vocabulary	Variable, Iteration, Event Broadcasting, Initialisation, Loop, Concurrent Scripts, Integer.

Year 8 – Topic 3

Topic Title	**8.3 -Content Creation (Digital Media)**
Pupils will know	● The structural phases of digital video creation: Pre-production (storyboarding, scripts), Production (filming), and Post-production (editing). ● How video asset timelines arrange visual and audio feeds concurrently. ● Key video concepts: frame rates, aspect ratios, transitions (cuts, fades), and audio.
Pupils will know how to (procedural knowledge)	● Import, organise, and trim media assets cleanly inside Adobe Premiere. ● Arrange, split, and stitch visual and audio segments together along a multi-track sequence timeline. ● Apply seamless transitions, custom titles, and basic audio to match production project briefs. ● Export the finished media product using optimised settings (MP4) for distribution.

Core knowledge to know and remember to progress to later learning (foundational knowledge)	• A timeline is a linear interface where visual assets and audio tracks blend together. • Pre-production planning saves significant troubleshooting time during active editing phases.
Prior knowledge	7 Asset Creation
Future knowledge	9 Publication Design and Content Creation
Key vocabulary	Adobe Premiere, Timeline, Frame Rate, Export Settings, Transition, Audio Splitting, Storyboard, Aspect Ratio.

Year 8 – Topic 4

Topic Title	**8.4 - Physical Computing and Logic (Computer Science)**
Pupils will know	• How physical computer systems bridge software instructions and real-world mechanical movement. • The function of hardware sensors (ultrasonic, infrared, bump switches) as physical system input triggers.
Pupils will know how to (procedural knowledge)	• Write and deploy algorithm blocks to guide physical automated robots through maze pathways. • Program feedback loops using sensor read-outs (e.g., stop moving *if* ultrasonic distance measures less than 10cm). • Coordinate physical robot mechanics to perform timed tasks, movement patterns, and obstacle navigation.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	• Automation relies on automated loops constantly measuring live input data against logical check boundaries. • Debugging mechanical code requires evaluating environmental real-world variables alongside software code errors.
Prior knowledge	7 Coding and physical computing
Future knowledge	**Linked Units:** 10 - Python Robot Arms
Key vocabulary	Automation, Sensor, Ultrasonic, Debugging, Infrared, Remote login

Year 8 – Topic 5

Topic Title	8.5 - Coding (Computer Science)
Pupils will know	● The strict syntax rules of text programming languages compared to the flexible arrangement of block languages. ● How computers interpret typed keywords, string values, integers, and geometric commands. ● How to translate computational steps (like moving an item) into a precise, coordinate-based text command script.
Pupils will know how to (procedural knowledge)	● Write, modify, and run basic text scripts in the SmallBASIC environment without causing syntax crashes. ● Utilise textual looping structures (For...EndFor) to program repeating geometric shapes on a visual canvas. ● Read syntax error logs to locate missing characters, unclosed brackets, or misspelled keywords.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● A syntax error occurs when a code script breaks the strict grammar rules of the programming language, preventing execution. ● Text-based code relies on absolute precision; every character, space, and capitalisation choice matters.
Prior knowledge	7 Physical Computing and Coding
Future knowledge	9 Coding
Key vocabulary	Syntax Error, SmallBASIC, Keyword, Coordinates, Text Script, String, Integer, Loop, Debugging Window.

Year 8 – Topic 6

Topic Title	8.6 - Computer Systems (Computer Science)
Pupils will know	● The internal physical components of a modern computer system architecture (CPU, RAM, Motherboard, Hard Drive/SSD, PSU). ● The fundamental difference between primary volatile memory (RAM) and secondary non-volatile storage. ● The "Von Neumann" architecture concept: Input -> Process (CPU) -> Output / Storage. ● The components required to form a local area network (LAN), including switches, routers, and Ethernet/Wi-Fi. ● The fundamentals of AI and machine learning.
Pupils will know how to (procedural knowledge)	Identify, safely handle, and physically locate essential internal hardware components inside a desktop PC body. Compare hardware performance specifications (e.g., CPU clock speeds,

	RAM capacities) to balance system builds. Trace the data path from a local input device up to a network gateway or server.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● The CPU is the "brain" of the computer that executes instructions. ● RAM keeps active program scripts open but wipes clean completely when system power drops (volatile).
Prior knowledge	7 Physical Computing and Coding
Future knowledge	9 Computer Systems, 10 Systems Architecture
Key vocabulary	Central Processing Unit (CPU), Random Access Memory (RAM), Volatile, Non-Volatile, Network Motherboard, Local Area Network (LAN), Router, Switch, AI, machine learning.

Year 9 overview

Year 9 – Topic 1

Topic Title	9.1 - Coding (Computer Science)
Pupils will know	• The structural syntax differences between typed text structures and visual block arrangements. • Data type assignments: Strings (str), Integers (int), Floats (float), and Booleans (bool). • The core programming construct of Selection using logic and relational operators (==, !=, >, <). • How computers execute error handling and debug console warnings.
Pupils will know how to (procedural knowledge)	• Write text code containing user variable inputs and text conversions. • Deploy conditional statements (if, elif, else) to change program paths. • Construct an operational, choices-driven text-based adventure game. • Read error traces to identify syntax mistakes, incorrect variable indentations, or type mismatch crashes. • Develop an understanding of selection and iteration as constructs of algorithmic thinking.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	• Programming language structures (variables, assignments, if-elif-else operators, while/for loops, arrays). • Basic coding essential for progress to KS4 Computer Science - debugging, comments, variable naming conventions, logic.
Prior knowledge	• 8 Logic & Physical coding
Future knowledge	• GCSE Computer Science component 2
Key vocabulary	Variable, construct, loop, decision, comment, IDE, programming, running, debugging, syntax.

Year 9 – Topic 2

Topic Title	9.2 - Publication Design (Digital Media)
Pupils will know	• The concepts of visual branding, logo identity, and target audiences. • The workflow required to link assets (Illustrator) and images (Photoshop) into a page layout workspace (InDesign).

	• The technical rules of editorial design: margins, column grids, paragraph styling, and text wrapping.
Pupils will know how to (procedural knowledge)	• Plan a cohesive music festival theme, establish its identity, name, and curate the artist lineup. • Create a scalable, original vector brand logo using Adobe Illustrator. • Edit, mask, adjust, and export extra required digital imagery or background artwork inside Adobe Photoshop. • Assemble professional, multi-page print promotional material using master pages and layout grids within Adobe InDesign.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	• Successful marketing campaigns rely on absolute visual consistency across logos, color kits, and typography choices.
Prior knowledge	• Year 7 Illustrator theme park assets paired with the Year 8 image editing skills
Future knowledge	• Vocational Creative Media pathway
Key vocabulary	Adobe InDesign, Adobe Illustrator, Visual Identity, Leaflet Layout, Vector Master, Link Panel, Typography, Assets.

Year 9 – Topic 3

Topic Title	**9.3 - Computer Systems (Computer Science)**
Pupils will know	• How computers map, manipulate, and calculate numbers, letters, images, and audio waveforms using binary (0 and 1). • The mathematical system mechanics of base-2 (binary) conversion compared to base-10 (denary). • The threats posed by system exploits, ransomware, and the cryptographic encryption protocols used to protect data.
Pupils will know how to (procedural knowledge)	• Calculate conversions between Denary and Binary. • Apply basic cryptography to encode and decode messages. • Convert characters into ASCII and vice versa. • Create binary representations of basic bitmaps.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	• Data in computers uses Base 2 to represent the states of on and off. • Understand basic cryptography so they understand what is happening when data is transmitted across the internet.

Prior knowledge	8.3 Hardware and Networks
Future knowledge	GCSE Unit 1.2
Key vocabulary	Convert, number base, binary, decimal/denary, cybersecurity, cryptography, encryption, decryption, bitmap, pixels, metadata, resolution.

Year 9 – Topic 4

Topic Title	**9.4 - Coding Applications (Computer Science)**
Pupils will know	• The principles of software design tailored specifically for touch interfaces and mobile devices. • Fundamentals of UI (User Interface) design principles. • The logic patterns used to configure mobile application functions (event listeners, form inputs).
Pupils will know how to (procedural knowledge)	• Design interactive interface layouts. • Configure logic triggers to pass explicit input variables between screen elements.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	• Mobile application layouts use event listeners to trigger block routines. • Good software design separates functional code blocks from presentation interface frameworks.
Prior knowledge	7.2 Coding and Logic Basics, 9.1 Text based coding
Future knowledge	GCSE Component 2
Key vocabulary	User Interface, Usability, Input Field, Screen, Variable Array.

Year 9 – Topic 5

Topic Title	**9.5 - Digital Animation (Digital Media)**
Pupils will know	• The foundational principles of animation, including step frame, tweening and onion skinning. • How vector shapes are constructed and structurally deformed

	using specialised digital manipulation software. ● The structural difference between automated digital tweens (motion and shape interpolation) and traditional step frame (frame-by-frame) sequencing. ● The functionality of the Asset Warp tool in setting up rigid bone joints and flexible mesh structures over vector layouts.
Pupils will know how to (procedural knowledge)	● Create, combine, and manipulate unique character components using digital shape and brush tools within Adobe Animate. ● Deploy traditional step-frame animation arrays to map fast, expressive character movements or sudden adjustments. ● Apply classic and shape tweens along a linear timeline layer to automate smooth, fluid translation curves. ● Utilize the Asset Warp tool to generate an internal skeleton mesh over a vector character and animate natural-looking bends and poses.
Core knowledge to know and remember to progress to later learning (foundational knowledge)	● Step-frame animation requires manual adjustments on every frame, while tweens calculate smooth mathematical transitions between two distinct keyframes. ● The Asset Warp tool allows single-mesh vector graphics to bend cleanly without distorting character proportions.
Prior knowledge	Unit 7.4 and layer management (Photoshop).
Future knowledge	Linked Units: GCSE Media Studies
Key vocabulary	Adobe Animate, Asset Warp, Shape Tween, Classic Tween, Step-Frame, Keyframe, Onion Skinning, Frame-by-Frame, Bone Rigging.

Year 9 – Topic 6

Topic Title	**9.6 - Content Creation (Digital Media)**
Pupils will know	● How to manipulate images to create a false narrative ● The underlying structural mechanics of the web using Hypertext Markup Language (HTML). ● Techniques used to create misleading images to highlight the importance of digital literacy.
Pupils will know how to (procedural knowledge)	● Assess what they view online for authenticity ● Draft structural web pages completely by typing valid syntax tags (<html>, <body>, <h1>, <p>, <a>). ● Utilise Adobe Photoshop tools to create deliberately misleading images.

Core knowledge to know and remember to progress to later learning (foundational knowledge)	● HTML controls page content structures. ● Media assets can be manipulated to drive a false narrative.
Prior knowledge	7 Website Creation, 7 Asset creation, 8 Image Editing
Future knowledge	GCSE Unit 1.6 Ethics, A Level Networking
Key vocabulary	HTML, Tags, Authenticity, Manipulation.