

KS3 Computing: National Curriculum Mapping

Green Explicit / direct coverage Amber Supporting / partial coverage

KS3 National Curriculum statement	YEAR 7				YEAR 8				YEAR 9			
	7.1 Digital Literacy	7.2 Programming	7.3 Spreadsheets	7.4 3D Modelling	8.1 Cyber Security	8.2 Web Design	8.3 Photo Editing	8.4 Game Design	9.1 AI & Ethics	9.2 Programming	9.3 Binary Data	9.4 Escape Room
A Design, use and evaluate computational abstractions that model real-world problems and physical systems.		✓	•					•	•	✓		
B Understand key algorithms; use logical reasoning to compare alternative algorithms for the same problem.		•						•	•	•		
C Use 2+ programming languages (including a textual language), data structures and modular programs.		✓				✓		•		✓		
D Understand Boolean logic and binary representation; carry out simple binary operations.		•				•				•	✓	
E Understand computer hardware and software components and how systems communicate.	•				•				•		•	
F Understand how instructions are stored/executed and how data is represented and manipulated digitally.		•							•	•	✓	
G Undertake creative projects using multiple applications, including collecting/analysing data and meeting user needs.	✓	•	✓	✓		✓	✓	✓	•	•		✓
H Create, reuse, revise and repurpose digital artefacts for an audience, considering trustworthiness, design and usability.	✓		•	✓		✓	✓	✓	✓	•		✓
I Use technology safely, respectfully, responsibly and securely; protect identity/privacy and report concerns.	✓				✓	•			✓			•

Green = explicit coverage in the planned unit. Amber = supporting/partial coverage. White = not explicitly evidenced at unit-title level.

KS3 Computing Overview

YEAR 7

7.1

Digital Literacy

Google Workspace • safety

7.2

Programming

BBC micro:bit

7.3

Spreadsheets

graphs • formulae • data

7.4

3D Modelling

SketchUp

YEAR 8

8.1

Cyber Security

data • social engineering

8.2

Web Design

HTML • JavaScript

8.3

Photo Editing

Photopea

8.4

Game Design

Construct

YEAR 9

9.1

AI & Ethics

ML • ethics • chatbots

9.2

Programming

EarSketch • Turtle • Python

9.3

Binary Data

binary • hex • logic

9.4

Escape Room

Google Forms

KS3 Computing: Curriculum Intent

Computer Science, Information Technology and Digital Literacy are deliberately developed together

COMPUTER SCIENCE

- Algorithms and logical reasoning
- Programming in block-based and textual environments
- Binary, data representation and Boolean logic
- Understanding how computational systems behave

INFORMATION TECHNOLOGY

- Create purposeful digital products
- Work with data, webpages, images, 3D models and games
- Select appropriate tools for a task
- Test, refine and improve digital artefacts

DIGITAL LITERACY

- Use technology safely and securely
- Protect identity, privacy and personal data
- Judge trustworthiness of online and AI-generated information
- Understand responsible and ethical technology use

By the end of Year 9

Pupils have programmed in multiple environments, created a range of digital artefacts, worked with data and binary representation, and developed the judgement needed to use modern technology safely and responsibly.

7.1 Digital Literacy

Year 7 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Use Google Slides and Google Docs to create purposeful school work.
- Develop core digital routines: screenshots, saving, typing, printing and file organisation.
- Use Google Drive, Gmail, Google Classroom and EduLink confidently.
- Manage passwords, troubleshoot common problems and use accessibility features.
- Explore social media, fake news and online security.

National Curriculum links

I

Safe, respectful and secure use of technology

Strong passwords, online security, social media and fake-news work develop privacy, security and responsible online behaviour.

H

Create and refine digital artefacts for an audience

Slides, documents and email tasks require pupils to create, organise and communicate information clearly using appropriate digital tools.

G

Use applications to achieve purposeful outcomes

Pupils combine Google Workspace tools and practical digital skills to complete authentic school-based tasks.

Progression

Establishes the digital confidence and safe working habits pupils need for every later Computing unit.

7.2 Programming

Year 7 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Program the BBC micro:bit using short, visible programs that give immediate feedback.
- Create scrolling text and use the built-in image library.
- Build an interactive adventure story.
- Create and use custom images.
- Apply programming ideas in a practical ‘Just Dance’ style task.

National Curriculum links

C

Use programming languages to solve computational problems

Pupils create working micro:bit programs and combine instructions to produce purposeful outputs; later KS3 Python extends the textual-language requirement.

B

Develop algorithmic and logical thinking

Adventure-story and interactive tasks require pupils to plan ordered steps and reason about how program choices affect behaviour.

A

Model behaviour through computational abstractions

The micro:bit gives pupils a physical context in which coded instructions are translated into observable device behaviour.

Progression

Moves pupils from digital users to creators, preparing them for more complex textual programming in Year 9.

7.3 Spreadsheets

Year 7 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Learn the structure and purpose of a spreadsheet through ‘Spreadsheet Superpowers’.
- Turn data into appropriate graphs and interpret what the visualisation shows.
- Use formulae to automate calculations.
- Complete a ‘Data Detective’ task that requires analysing information and finding patterns.

National Curriculum links

G

Collect and analyse data to achieve challenging goals

Pupils use spreadsheet tools, formulae and graphs to organise, analyse and communicate data.

A

Use computational abstractions to model real-world information

Tables, formulae and graphs represent real information in a simplified form that can be explored and interpreted.

H

Create and improve digital artefacts

Pupils format and refine spreadsheets and charts so information is clear and usable for the intended purpose.

Progression

Builds data-handling skills that support later work in Computer Science, Business and wider curriculum subjects.

7.4 3D Modelling

Year 7 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Use SketchUp to work confidently in a 3D digital environment.
- Build models from simple geometric forms and combine them into a complete design.
- Use tools such as orbit, pan, zoom, rectangle and push/pull.
- Refine a model with structural and visual details.
- Review and improve the model from different viewpoints.

National Curriculum links

H

Create, revise and repurpose digital artefacts

Pupils iteratively develop a 3D model, making design decisions and improving accuracy, appearance and usability.

G

Undertake creative digital projects

SketchUp is used to plan and produce a substantial digital outcome, combining multiple tools toward a clear design goal.

A

Represent real-world systems through abstraction

A real building or space is simplified into geometric components and represented as a manipulable 3D model.

Progression

Ends Year 7 with a creative project that applies planning, precision, iteration and digital design.

8.1 Cyber Security

Year 8 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Understand the value of personal data and how organisations collect and use it.
- Recognise social-engineering techniques and why people are targeted.
- Explore hacking and the risks created by unauthorised access.
- Investigate the ‘rise of the bots’ and how automation can be misused online.
- Apply secure behaviours to realistic digital scenarios.

National Curriculum links

I

Use technology safely, responsibly and securely

Data privacy, social engineering, hacking and bots directly develop pupils’ ability to recognise threats and protect identity and information.

E

Understand how digital systems communicate

Cyber-security scenarios support understanding of how connected systems, accounts and services can be attacked or protected.

Progression

Deepens Year 7 online-safety learning by explaining the technical and human methods used in real cyber attacks.

8.2 Web Design

Year 8 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Create and format webpages using HTML.
- Add and control images.
- Create hyperlinks that connect pages and online resources.
- Use tables to structure information.
- Introduce JavaScript to add programmable behaviour to webpages.

National Curriculum links

H

Create, revise and repurpose digital artefacts

Pupils build and refine webpages with attention to structure, design, navigation and usability.

G

Undertake creative projects using digital tools

HTML, images, links, tables and scripting are combined to create a coherent digital product for a user.

C

Use programming languages to solve problems

JavaScript introduces a textual programming language within a web context, supporting the wider KS3 programming requirement.

Progression

Bridges digital design and Computer Science by moving from static HTML structure towards programmable web behaviour.

8.3 Photo Editing

Year 8 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Use Photopea to edit and combine digital images.
- Create clipping masks.
- Use Magic Cut to isolate image content.
- Place type along a path.
- Split and manipulate images precisely.
- Apply conventions and modes of address to design for an intended audience.

National Curriculum links

H

Create and refine digital artefacts for an audience

Pupils edit, combine and improve images while considering design choices, communication and audience.

G

Undertake creative projects using digital applications

A range of Photopea tools are selected and combined to produce polished visual outcomes that meet a design purpose.

Progression

Develops purposeful media creation: pupils move beyond 'using software' to making design decisions for a specific audience.

8.4 Game Design

Year 8 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Use Construct to design and build a playable digital game.
- Plan the purpose, rules and player experience before building.
- Use events, conditions and actions to control game behaviour.
- Create and combine visual assets and game objects.
- Test, debug and improve the game through repeated play.

National Curriculum links

A

Model states and behaviour computationally

Game objects, rules and events provide a clear model of how a digital system changes state in response to player actions.

G

Undertake a challenging creative project

Pupils combine design, logic, assets and testing to produce a complete interactive game.

H

Create, revise and improve digital artefacts

Testing and refinement require pupils to improve usability, clarity and the overall player experience.

Progression

Provides a motivating bridge into Year 9 programming by making logic, events and debugging visible in an interactive product.

9.1 AI & Ethics

Year 9 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Define artificial intelligence and identify where it is used.
- Explore the idea of machine learning and how systems learn from data.
- Discuss ethical questions raised by the use of AI.
- Investigate image-recognition systems and why they can make mistakes.
- Explore Turing Tests and chatbots, including what makes machine behaviour appear intelligent.

National Curriculum links

A

Use and evaluate computational abstractions

Machine learning and image recognition help pupils understand how computational models represent patterns and make decisions.

I

Use technology responsibly and understand risks

Ethics lessons require pupils to evaluate responsible uses of AI, bias, reliability and the consequences of automated decisions.

H

Consider trustworthiness of digital systems and outputs

Pupils question whether AI-generated or AI-classified information should be trusted and how users can judge reliability.

Progression

Introduces contemporary Computer Science through technical ideas and ethical decision-making before pupils return to Python.

9.2 Programming

Year 9 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Use EarSketch to create music through code.
- Use Python Turtle to create graphical outputs.
- Build a Sorting Hat program using user input and decisions.
- Create a text-based adventure story.
- Build a maths quiz game using input, output, selection and iteration.

National Curriculum links

C

Use a textual programming language to solve problems

Python is used across creative and interactive projects, with pupils combining input/output, selection and iteration to create working programs.

B

Apply algorithmic and logical reasoning

Pupils plan program flow and decide how different control structures should be used to produce the intended outcome.

A

Model behaviour through computational abstractions

Programs such as quizzes and adventures model states, choices and rules in code.

Progression

Consolidates the programming constructs needed for GCSE Computer Science and increases independence in writing textual code.

9.3 Binary Data

Year 9 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Understand units of data and why computers use binary.
- Convert between binary and denary.
- Carry out binary addition and introduce hexadecimal.
- Understand how digital images can be represented using binary data.
- Use AND, OR and NOT logic gates and interpret simple logic.

National Curriculum links

D

Understand Boolean logic and binary representation

Binary conversion, binary addition, hexadecimal and logic gates directly address the KS3 requirement for binary numbers and Boolean logic.

F

Understand how data is represented digitally

Binary-image work shows how visual information is encoded and manipulated using binary digits.

E

Understand computer systems and their components

The unit provides supporting knowledge for how digital systems represent and process information internally.

Progression

Provides the data-representation and logic foundations pupils will revisit in GCSE Computer Science.

9.4 Escape Room

Year 9 • Curriculum content and KS3 National Curriculum alignment

What pupils actually study

- Plan an interactive escape-room experience using Google Forms.
- Create a clear theme, sequence of rooms and puzzle clues.
- Use form sections and question logic to structure the user journey.
- Test the experience as a user and refine unclear or broken parts.
- Publish a complete digital artefact for classmates to play and review.

National Curriculum links

G

Undertake a creative project using digital applications

Pupils plan, build, test and publish a complete interactive experience, combining digital content and form functionality toward a challenging goal.

H

Create, revise and repurpose a digital artefact for users

Peer testing and refinement focus on clarity, usability, audience needs and the quality of the final experience.

B

Use logical reasoning to design sequences and choices

Puzzle order and branching choices support logical thinking about how users progress through the escape room.

Progression

Finishes KS3 with an independent project that combines design, logic, user testing and refinement.