



Year 7 Computer Science

CURRICULUM OVERVIEW

In Year 7, students learn how computers work, how to think computationally, how to program, and how to use technology safely, responsibly and creatively. The curriculum builds both theoretical understanding and practical skills, preparing students for further study in Computer Science.



1 Under the Hood of a Computer



How computers work and represent data.

- Bits, bytes and binary
- Hardware, CPU, input, output and storage
- How computers process data

2 Think Like a Computer Scientist



Solving problems logically and systematically.

- Algorithms
- Decomposition and abstraction
- Pattern recognition and logical thinking

3 E-safety



Staying safe and responsible online.

- Passwords and personal information
- Digital footprints
- Recognising risks and reporting concerns

4 Drawing and Manipulating Shapes



Using Scratch and Python to create shapes.

- Patterns, sequences and coordinates
- Iteration and polygons
- Procedures and efficient code

5 Creating an Animation



Bringing ideas to life in Scratch.

- Sprites, costumes and backgrounds
- Repetition and sequencing
- Debugging and improving code

6 Python Introduction



Building your first text-based programs.

- Print and input
- Variables and operators
- Selection using if, else and elif

7 Back to the Future



Exploring key ideas and people in computing.

- Turing, Berners-Lee, Babbage and Boole
- Ciphers and logic gates
- Sorting and simple web ideas

8 Spreadsheets



Working with data to solve real-world problems.

- Formulas and functions
- Cell references and formatting
- Charts, graphs, profit and loss



Developing Key Skills

Problem solving | Computational thinking | Programming | Digital literacy | Creativity | Independent learning



Wider Opportunities

Girls into Computing
Women in Technology (American Express)
GCHQ CyberFirst Challenges for Girls
Bebras and Oxford Computing Challenge
iDEA Digital Awards



Assessment

A range of retrieval activities, practical tasks and end-of-unit assessments are used to check understanding and support progress.



Where Next?

Year 7 builds the knowledge and skills needed for Year 8, GCSE Computer Science and beyond, opening doors to a wide range of future careers in technology.