Understanding the Computing & ICT Curriculum: What Your Child Will Learn and Why

Computing & ICT gives students the tools to understand how the digital world works, from using software and data to designing code and understanding how computers think. This guide shows the key knowledge and skills students will develop, and how learning builds over time.

Key Themes in Computing & ICT Learning

Across all school years, Computing & ICT focuses on:

- Digital Literacy: Using computers confidently, safely and responsibly.
- Problem Solving: Breaking down problems and creating solutions using logic and code.
- Programming: Writing and understanding code using different languages and techniques.
- Data and Information: Understanding how data is collected, stored, analysed, and protected.
- Systems and Technology: Learning how hardware and software work together.
- Online Safety: Understanding risks online and how to stay safe and secure.

Key Stage 3 (Years 7–9)

In Key Stage 3 our students will:

- Write code using two different types of programming languages (e.g. block-based and text-based).
- Understand how to use different types of software and choose the right tool for a task.
- Learn to combine software to create digital work (e.g. presentations, reports, graphics).
- Use features like spell check, formatting, and file management to improve digital work.
- Start learning how to stay safe online, protect personal information, and use digital tools responsibly.

The units of work we study in Key Stage 3 are:

Year 7					
Semester 1			**Semester 2**		
Autumn HT1	**Autumn HT2**	**Spring HT1**	**Spring HT2**	**Summer HT1**	**Summer HT2**
Establishing routines & E-safety	Cryptography	Introduction to Text Based Programming (Python)	Harry Plotter (Spreadsheets)	Control Systems	Kodu

Year 8					
Semester 1			**Semester 2**		
Autumn HT1	**Autumn HT2**	**Spring HT1**	**Spring HT2**	**Summer HT1**	**Summer HT2**
Databases (Gotcha)	Computer Crime	Tech in the House	Gangsta Zoo (Spreadsheets)	Robomind (text-based programming)	Artificial Intelligence

Year 9					
Semester 1			**Semester 2**		
Autumn HT1	**Autumn HT2**	**Spring HT1**	**Spring HT2**	**Summer HT1**	**Summer HT2**
Searching & Sorting	Scratch (block-based programming)	Web Security group project	Intermediate Python	Intro to AI/Machine Learning	Creating a digital artifact (Sound/App/ Animation)

Key Stage 4 (Years 10–11)

In Key Stage 4 our students will:

- Understand how computer hardware and software work together.
- Learn how networks operate and how data is stored, measured, and transferred.
- Write efficient code using structured programming techniques and logic (including Boolean logic).
- Explore legal, ethical, and environmental issues in computing.
- Design and evaluate user interfaces that are accessible and effective.
- Use spreadsheet tools to collect, analyse and present data.
- Understand modern technologies and how they impact people and organisations.
- Know the risks of cyber threats and how to prevent them.
- Use planning tools to manage digital projects from start to finish.

The units of work we study in Key Stage 3 are:

Year 10					
Semester 1			**Semester 2**		
Autumn HT1	**Autumn HT2**	**Spring HT1**	**Spring HT2**	**Summer HT1**	**Summer HT2**
Unit 1 – Systems Architecture	Unit 2 – Memory and Storage	Unit 3 – Network Security	Unit 8 – Data Representation	Unit 7 – Algorithms	Programming Practice

Year 11					
Semester 1			**Semester 2**		
Autumn HT1	**Autumn HT2**	**Spring HT1**	**Spring HT2**	**Summer HT1**	**Summer HT2**
Recap Unit 7 (Algorithms) & Unit 6 (Systems Software)	Exam Readiness & Full Curriculum Recall				

Key Stage 5 (Years 12–13)

In Key Stage 5 our students will:

• Develop deep understanding of core computing concepts like algorithms, data structures, and programming.

• Explore system software, software development and networking in depth.

• Understand big data, its challenges, and how it's used.

• Apply computational thinking and problem-solving to real-world scenarios.

• Evaluate the impact of artificial intelligence and emerging technologies.

• Understand legal, ethical, and moral implications of technology.

• Create complex applications and understand the system life cycle in full.

• Know how to access careers in technology, including those that don’t yet exist.

The units of work we study in Key Stage 5 are:

Year 12					
Semester 1			**Semester 2**		
Autumn HT1	Autumn HT2	Spring HT1	Spring HT2	Summer HT1	Summer HT2
Components of a Computer	Systems Software	Software Development	Exchanging Data	Networks and Web Technologies	Data Types

Year 13					
Semester 1			**Semester 2**		
Autumn HT1	Autumn HT2	Spring HT1	Spring HT2	Summer HT1	Summer HT2
Data Structures	Boolean Algebra	Legal, Moral, Ethical & Environmental	Algorithms	Programming Techniques	Exam preparation & Programming project

Why This Knowledge Matters

By the time students finish school, they will be confident digital citizens who can:

- Solve problems using logic and code.
- Use a range of digital tools to communicate and create.
- Understand how technology impacts the world around them.
- Stay safe, act responsibly, and adapt to future technologies.