Computer Science GCSE

Why do we study Computer Science?

Computers are now part of everyday life and, for most of us, technology is essential to our lives, at home and at work. 'Computational thinking' is a skill that all learners must learn if they are to be ready for the workplace and able to participate effectively in the digital world. We believe that our learners should have the opportunity to follow an IT and Computing curriculum that prepares them for life in modern Britain and take advantage of all opportunities this can offer them in both Britain and the wider world. The curriculum for computing, with computer science at its heart, has been developed to equip learners with the foundational skills, knowledge and understanding of computing they will need for the rest of their lives.

How do we learn in Computer Science lessons?

Our Computing curriculum focuses on a progression of skills in digital literacy, computer science, information technology and online safety to ensure that learners become competent in safely using, as well as understanding, technology. Our curriculum journey incorporates challenging and engaging topics, giving learners the opportunity to develop their capability, creativity and subject knowledge.

Pupils will follow the National Curriculum for computing in Key Stage 3. Lessons focus on the key skills in computer science in order to prepare those pupils who wish to study Computer Science or ICT at GCSE level. pupils are taught in a way that promotes and utilises knowledge and understanding of computing.

In key stage 4, pupils will follow the OCR two year GCSE course. The course is divided into two main components;

- Computer systems - pupils develop a sound understanding of memory, hardware, networks and security.
- Computational thinking, algorithms and programming - pupils to develop the skills to solve problems, design systems and understand human and machine intelligence

Topics are delivered through a creative blend of practical and theoretical lessons. In addition, pupils are given the opportunity to design, write, test and refine programs using a text-based high-level programming language. This will help them to develop vital understanding across a range of relevant computer science topics.

What do we learn in Computer Science lessons?

	Autumn	Spring	Summer
Year 7	E Safety Spreadsheets	Programming	Computer components
Year 8	Computer peripherals Operating systems	Application software	Computer security and disc management
Year 9	Storage, legal and moral issues and computing legislation	Computational thinking	Python programming
Year 10	System Architecture, Memory & Storage and Networks: How do computers that we use every day operate and communicate?	System Software, Ethical, Legal Moral and Environmental: How do computer operating systems work with other parts of the computer? What do we have to consider when thinking about the Ethical, Legal, Moral and Environmental aspects of Computer Science?	Algorithms and Programming: How can we create algorithms using computational thinking? Coding in Python to enable pupils to create programs based off Algorithms given in the form of Pseudo Code.
Year 11	Robust Programming and Computational Logic: How can we correctly test our code and programs to ensure they meet the standard required? How can we use	Translators and Facilities: How does a machine understand what we are putting into it and how can that be translated?	Programming and Revision: Continue to work on programming skills along side revision for the exams.

	Computational logic to resolve real world issues?		