

Key Stage 4 – GCSE Computer Science

All pupils must have the opportunity to study aspects of information technology and computer science at sufficient depth to allow them to progress to higher levels of study or to a professional career.

All pupils should be taught to:

- develop their capability, creativity and knowledge in computer science, digital media and information technology
- develop and apply their analytic, problem-solving, design, and computational thinking skills
- understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns

Computer Science (9-1) - J277

Specification at a glance

Assessment overview

Component	Marks	Duration	Weighting
Computer systems (01)	80	1 hour 30 mins	50%
Calculators not allowed			
Computational thinking, algorithms and programming (02)	80	1 hour 30 mins	50%
Calculators not allowed			

Content overview

Component 01: Computer systems

Introduces students to the central processing unit (CPU), computer memory and storage, data representation, wired and wireless networks, network topologies, system security and system software. It also looks at ethical, legal, cultural and environmental concerns associated with computer science.

Component 02: Computational thinking, algorithms and programming

Students apply knowledge and understanding gained in component 01. They develop skills and understanding in computational thinking: algorithms, programming techniques, producing robust programs, computational logic and translators.

Practical programming

Students are to be given the opportunity to undertake a programming task(s) during their course of study which allows them to develop their skills to design, write, test and refine programs using a high-level programming language. Students will be assessed on these skills during the written examinations, in particular component 02 (section B).

Practical Programming Requirement:

“Centres are **required** to give candidates the opportunity to develop programming skills during their course of study. This **must** allow candidates to develop the skills to design, write, test, and refine program(s) using a high-level programming language with a textual program definition, either to a specification or to solve a problem (or problems).”