

KS4 COMPUTER SCIENCE



Qualification	Examination Board	Specification Code
GCSE	OCR	J276

Topics Covered

A GCSE in Computer Science prepares students for the digital workplace. They will learn the fundamentals of programming and systems analysis. This gives the solid foundation for many careers that a modern computer scientist would engage in.

Students learn what algorithms are, how they are used and how they work and then go on to create their own in Python/C and PHP.

They are taught a range of number systems, such as binary and hex, and encryption and databases including SQL. There will be lessons on understanding the components of computer systems, truth tables, logic statements and assembly code, as well as understanding computer networks. Emerging trends in computing technologies and the impact of computing on individuals, such as the Data Protection Act, society and the environment are considered.

Practical Programming:

You will learn to use the Python programming language and be expected to create your own original algorithms and work with algorithms produced by others. You will be decomposing problems into sub-problems and you will design, write, test and evaluate your own programs.

Assessment

There are two written papers, which make up 80% of the course. One is on the theory of computer science and the other one has a focus on programming and algorithms.

The programming project is worth the remaining 20%. Students will use Python to plan, develop and test solutions to programming problems.

Course Progression

The course supports the study of Computer Science at A Level.

Course Outline

Studying Computer Science develops understanding of the fundamental principles and concepts of programming. It develops computational thinking skills, enables the analysis of problems and provides design solutions.

Career Opportunities

Computer Science is particularly useful for anyone wanting a career in the computer industry, especially when studied alongside art, physics and technology. It is a key subject for many advanced areas of scientific research where scientists seamlessly move between practical work and computer modelling. Moreover, development of an awareness of current and emerging trends in technology and basic programming skills will be of great benefit to you in most career paths.