Year 8 Options 2020

GCSE Computer Science

Examination Board: OCR
Course Specification: J277

What is GCSE Computer Science all about?

This course is for pupils who want to explore how computers work, develop computational thinking and learn programming skills. It is specifically designed for those pupils who want a career in IT and is the entry point for job roles such as software developer, web developer, systems analyst and many more. It is a challenging course and pupils should have confidence in their maths ability and problem solving skills if they want to apply.

Course Structure:

Component 01 – Computer Systems

Assessed by: Written paper 90 minutes. The exam includes knowledge based questions both short and long. This is worth 50% of the overall GCSE grade.

In this unit pupils will learn a range of computer science theory including systems architecture; memory; storage; wired and wireless networks; network topologies, protocols and layers; system security; system software; and legal, ethical and environmental concerns.

Component 02 – Computational Thinking, Algorithms and Programming

Assessed by: Written paper 90 minutes long. The exam paper is made up of a variety of questions that mainly focus on problem solving and applying computational thinking. This is worth 50% of the overall GCSE grade.

In this unit pupils will learn a range of programming skills including: algorithms; programming techniques; producing robust programs; computational logic; translators and facilities of languages; and data representation.

Programming Project

Pupils will be required to embark on an ambitious programming project during the course. This project that is completed in school and involves learners coding a computer system based on a set brief. Learners will be expected to showcase their skills at: programming techniques; analysis; design; development; testing; evaluation and forming conclusions.

The practical skills learned in this unit will be assessed as part of the two exams above.

What will I be studying each year?

- In Year 9 you will study programming skills in web development, a high-level programming language and application design.
- In Year 10 you will study most of the theory aspect of the course and sharpen your programming skills.
- In Year 11 you will finalise the theory knowledge and complete the Programming Project.

What could I do next with GCSE Computer Science?

Any Level 3 IT course accepts the qualification and it leads particularly well into A Level Computer Science also offered at this school. The robust skills taught are useful in many other areas of study.