KS4 - Computer Science

Course Specifications

Computer Science (9-1) - J277 (from 2020) - Exam board: OCR

Course Description

Our GCSE Computing gives students a real, in-depth understanding of how computer technology works. It offers them an insight into what goes on 'behind the scenes', and being able to use Hexadecimal and Binary number systems and carry out simple addition, division and multiplication in Binary. You are more likely to enjoy Computer Science if you are good at Maths and enjoy solving problems in a logical and systematic manner.

Skills & Abilities

You will enjoy this course if you like to:
- Explore the theoretical side of Computer Science
- Design Algorithms (Pseudocode & Flowcharts) to solve problems
- Use Mathematical and Logical skills to find solutions.

Assessment

There is no controlled assessment or coursework. The course is split into two written exams:

- **Unit 1:** Computer systems (Exam: 50%)
  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.

- **Unit 2:** Computational thinking, algorithms and programming (Exam: 50%)
  Students apply knowledge and understanding gained in Unit 1. They develop skills and understanding in computational thinking: algorithms, programming techniques, producing robust programs, computational logic and translators.

Careers & Progression

A computing qualification is a good basis for work as a computer engineer, software engineer, Systems analyst, data modeller, systems administrator, network administrator, software applications developer.

Guidance & Advice

Books: Trigger Happy: The inner life of videogames   - Stephen Poole, Accidental Empires - Robert X Cringely
Magazines: Wired, New Scientist
Visit: The National Museum of Computing: https://www.tnmoc.org/