

# **Computer Science**

## **A Level**

**Head of Department:**

Wayne Hamilton

**Exam Board:** AQA



### **What is the course about?**

Computer Science is a modern exciting course that gives you a strong understanding of how computers work and how to develop software. It focuses on problem-solving, mathematical reasoning; and engineering based thinking. It is a good foundation for understanding future challenges in this fast moving technological world.

### **What will I study in the first year?**

In the first year you will study fundamentals of programming, data structures, systematic approach to problem solving, theory of computation, data representation, computer systems, computer organisation and architecture, communication and networking.

### **What will I study in the second year?**

In the second year you will build on many of the topics introduced in year one and additionally study the fundamentals of algorithms, theory of computation, fundamentals of databases, big data, fundamentals of functional programming, non-exam assessment - the computing practical project.

### **How is the course assessed?**

Assessment is 80% exam and 20% coursework, a programming project completed in the second year. Paper 1 includes an onscreen exam testing students programming skills as well as their theoretical knowledge.

### **What skills will I develop in this course?**

During this course you will demonstrate knowledge and understanding of the principles and concepts of computer science, including abstraction, logic, algorithms and data representation. You will apply your knowledge and understanding of the principles and concepts of computer science, and be able to analyse problems in computational terms. You will design, program and evaluate computer systems that solve problems, making reasoned judgements about these and present conclusions.

### **What does this subject offer for higher education and future careers?**

A Level Computer Science provides a suitable foundation for the study of computer science or related courses, such as the mathematics or the sciences, in higher education. Equally, it is suitable for candidates intending to pursue careers or further study in computer science or ICT, or as part of a course of general education.