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# COMPUTER SCIENCE

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Computer Science is a practical subject where students are able to apply the academic principles learned in the classroom to real-world systems. It is a creative subject that combines invention and excitement, and can look at the natural world through a digital prism. Throughout the course students will gain an understanding of the fundamental principles and concepts of computer science, as well as the ability to analyse problems and write programs to solve them.

Examining Board  
OCR

Specification  
H446 A Level Specification

## **ENTRY REQUIREMENTS TO THE A LEVEL COURSE**

Please see the Sixth Form Admissions Policy for the entry requirements to this course.

### **Year 1**

Year 1 of the Computer Science course consists of two components; one on Computing principles and the other on algorithms and problem-solving. The component on Computing principles introduces the internal workings of the Central Processing Unit, the exchange of data and it also looks at the legal, moral, ethical and cultural issues associated with digital technology. The algorithms and problem-solving component will build upon the knowledge and understanding gained in the Computing principles component and it will allow students to gain an understanding of the term 'computational thinking' and be able to use algorithms to describe problems.

### **Year 2**

Year 2 of the Computer Science course consists of two written examinations, both of which are 2 hours and 30 minutes long and have 140 marks available in each, as well as a programming project which involves students selecting a computing problem and completing a series of tasks in relation to this.

### **Component One – Computer Systems – 40% of total A Level**

This component introduces the internal workings of the Central Processing Unit, the exchange of data and it will also look at legal, moral, ethical and cultural issues associated with digital technology. The work that is carried out for this component will be used when devising the programming project for component three.

## **Component Two – Algorithms and Programming – 40% of total A Level**

This component will build upon the knowledge and understanding gained in component one and students will gain an understanding of the term 'computational thinking' and be able to use algorithms to describe problems, as well as analyse a problem by identifying its component parts.

## **Component Three – Non-exam assessment programming project – 20% of total A Level**

In this component you will be expected to analyse, design, develop, test, evaluate and document a program written in a suitable programming language. You will be applying the principles of computational thinking to a practical coding problem.

## **COMPLEMENTARY SUBJECTS**

Computer Science combines with a range A Level subjects. The qualification will provide learners with a range of transferrable skills and has cross curricular links with Maths, Science and Design Technology.

## **CAREER AND UNIVERSITY OPPORTUNITIES**

The Computer Science qualification is suitable for anyone intending to pursue any career in which an understanding of technology is needed.