

COMPUTER SCIENCE



To succeed in this course, it is essential to have achieved a good grade in Computer Science at GCSE. A keen interest and enthusiasm for this subject, especially programming is also required.

Computer Science is a practical subject where students can apply the academic principles learned in the classroom to real-world systems. It's an intensely creative subject that combines invention and excitement, and can look at the natural world through a **digital prism**.

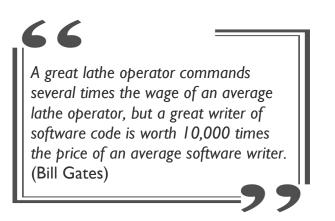
Computer systems

This component will introduce you to the internal workings of the Central Processing Unit (CPU), the exchanging of data, and also looks at software development, data types and legal and ethical issues. The following are tested:

- The characteristics of contemporary processors, input, output and storage devices
- Software and software development
- Exchanging data (How data is exchanged between different systems)
- Data types, data structures and algorithms
- Legal, moral, cultural and ethical issues.

Content of Algorithms & Programming

You will understand what is meant by computational thinking, and understand the



benefits of applying computational thinking to solving a wide variety of problems:

- Elements of computational thinking
- Problem solving and programming
- Algorithms

Programming project

You will analyse, design, develop, test, evaluate and document a program written in a suitable programming language for real users.

OPPORTUNITIES AFTER THE COURSE

This A-level will give you a significant advantage if you decide to read Computer Science or a related degree at university. It is also a good base for several other degree areas such as Engineering or Digital Media, where the ability to program will be very useful. It also recognised by the Russell Group as being useful in a wide range of subjects including mathematics, geography and several science degrees. Some universities also require a good grade in a mathematics A-level in order to progress onto their Computer Science courses.

Content Overview	Assessment Overview	
 The characteristics of contemporary processors, input, output and storage devices Software and software development Exchanging data Data types, data structures and algorithms 	Computer systems (01) 140 marks 2 hours and 30 minutes written paper (no calculators allowed)	40% of total A level
 Legal, moral, cultural and ethical issues Elements of computational thinking Problem solving and programming Algorithms to solve problems and standard algorithms 	Algorithms and programming (02*) 140 marks 2 hours and 30 minutes written paper (no calculators allowed)	40% of total A level
 The learner will choose a computing problem to work through according to the guidance in the specification. Analysis of the problem Design of the solution Developing the solution Evaluation 	Programming project 03* – Repository or 04* – Postal or 80 – Carry forward (2018 onwards)* 70 marks Non-exam assessment	20% of total A level

