

# Computer Science

## Subject Information Sheet

Course Title:	A-level Computer Science
Subject:	Computer Science
Qualification:	A Level
Exam Board:	OCR
General Course Description	<p>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, that can look at the natural world through a digital prism. Our Computer Science qualifications will value computational thinking, helping students to develop the skills to solve problems, design systems and understand the power and limits of human and machine intelligence.</p>
Course Content and Teaching Units	<p>The course covers the following topics, amongst others:            Computer programming, computational thinking and problem solving, pattern recognition, abstraction and decomposition, algorithms, data types and structures, characteristics of computers and software, software design and legal, ethical, cultural and moral issues in computing.</p> <p><b><u>Unit 1 – computer Systems</u></b></p> <ul style="list-style-type: none"> <li>• Components of a computer and their uses</li> <li>• Types of software and the methodologies used to develop them</li> <li>• How data is exchanged between different systems</li> <li>• How data is represented and stored in different structures and the use of different algorithms</li> <li>• Laws surrounding the use and ethical issues that can arise from the use of computers</li> </ul> <p><b><u>Unit 2 - Programming and Algorithms</u></b></p> <ul style="list-style-type: none"> <li>• What is meant by computational thinking</li> <li>• How computers are used to solve problems and programs can be written to solve them.</li> </ul>

	<ul style="list-style-type: none"> <li>• The use of algorithms to describe problems and standard algorithms</li> </ul> <p><b><u>Unit 3 – Programming Project</u></b></p> <p>Students select their own user-driven problem of an appropriate size and complexity to solve. This will enable them to demonstrate the skills and knowledge necessary to meet the assessment objectives. Students will need to analyse the problem, design a solution, implement the solution and give a thorough evaluation.</p> <p><u>How is the course taught?</u></p> <p>Lessons will be a mix of theory lessons in preparation for written exams, this will include outside speakers, visits and practical lessons as part of the coursework.</p>
Entry Requirements	A minimum of a grade 6 in Computing/Computer Science and 6 in Maths GCSE.
Assessment	<p>A Level:- Two written papers worth 40%</p> <p>Unit 3 – Programming project - 20%</p> <p>Practical programming skills will be marked internally and externally moderated.</p>
Financial Information	N/A
Progression Opportunities	This qualification can open up possibilities for studying computer science in higher education. There are now many courses that have computer science and computing as their core, and the computer science industry continues to grow as one of the success stories of this country's economy.
Further Information about our courses including results	An A-Level in Computer Science is useful for all kinds of careers, whether it be a career in computing such as software development, programming, network engineering, web design, cyber security or ethical hacking, or a career in business, science, technology, engineering or mathematics. In fact, the skills you will develop on our computer science course are valued by many employers and can be transferred to many careers.