

# Computer Science

Examination Board: OCR

## Staff Lead

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## Why Study Computer Science?

Students should consider taking A Level Computer Science for a number of reasons. Firstly, in today's digital age, computer science skills are in high demand across various industries. A level Computer Science provides a strong foundation in programming, algorithms, and problem-solving, equipping students with essential skills for future careers in technology, software development, data analysis, and more.

Furthermore, A level Computer Science fosters critical thinking and logical reasoning, enhancing a student's problem-solving abilities. These skills are not only valuable in the tech sector but also transferable to many other fields.

Additionally, A level Computer Science encourages creativity and innovation. Students learn how to create software and design algorithms, giving them the tools to develop their own applications and contribute to technological advancements.

In summary, opting for A Level Computer Science empowers students with valuable skills that are highly sought after in the job market, provides a solid foundation for further education, and encourages critical thinking and innovation, all while preparing them for the digital future.

## Career Paths & Degree Courses

Taking this subject opens doors to higher education and lucrative job opportunities. Many universities offer computer science-related programs and this course is also a good route onto degree courses in Science, Engineering and Maths. Employers seek individuals with strong computer science backgrounds.

## Requirements

At least five 9-4 grades at GCSE, with a minimum average grade score of 4.5. At least a grade 6 in Computer Science GCSE (if taken) and at least a grade 5 in the Physics element of GCSE Science. If you did not take GCSE Computer Science you will be required to complete a programming portfolio over the Summer to bridge the gap in your programming knowledge.

Recommended - English and Mathematics GCSE at grade 5 or above.

Content	A Level	Content
<ul style="list-style-type: none"> <li>The characteristics of contemporary processors, input, output and storage devices</li> <li>Software and software development</li> <li>Programming</li> <li>Exchanging data</li> <li>Data types, data structures and algorithms</li> <li>Legal, moral, ethical and cultural issues.</li> </ul>	<p><b>Paper 1</b></p> <p>2½ hour written paper exam</p> <p>40% A Level</p>	CORE: Scientific Practical Techniques – externally assessed.
<p>There'll be a short scenario/task contained in the paper, which could be an algorithm or a text page-based task, which will involve problem solving.</p> <p>Other areas covered include the following:</p> <ul style="list-style-type: none"> <li>Elements of computational thinking</li> <li>Problem solving and programming</li> <li>Algorithms.</li> </ul>	<p><b>Paper 2</b></p> <p>2½ hour written paper exam</p> <p>40% A Level</p>	<p><b>SECTION A</b></p> <p>Traditional questions concerning computational thinking:</p> <ul style="list-style-type: none"> <li>Elements of computational thinking</li> <li>Programming and problem solving</li> <li>Pattern recognition, abstraction and decomposition</li> <li>Algorithm design and efficiency</li> <li>Standard algorithms.</li> </ul> <p><b>SECTION B</b></p> <p>There'll be a scenario/task contained in the paper, which could be an algorithm or a text page-based task, which will involve problem solving.</p>
	<p><b>Non-exam assessment</b></p> <p>20% A Level</p>	Solution to a practical problem e.g. website with dynamic content, computer game, control system OR investigation report e.g. rendering 3D worlds on screen.