

COMPUTER SCIENCE

Exam Board: OCR (J277)

Assessment method

- 100% examined. Two written exam papers, completed at the end of the course, plus one or more compulsory ungraded programming tasks completed during normal lessons.

Exam length

- Paper 1: 1 hour 30 minutes
- Paper 2: 1 hour 30 minutes

Component 01 – Computer Systems

In this component students will be introduced to the central processing unit (CPU), computer memory and storage, data representation, wired and wireless networks, network topologies, system security and system software. They will also become familiar with the impact of ethical, legal, cultural and environmental concerns associated with Computer Science in a global context.

Component 02 – Computational Thinking, Algorithms and Programming

This component builds on Component 01, encouraging students to apply their knowledge and understanding using computational thinking. Students will be introduced to algorithms and programming, learning about programming techniques, how to produce robust programs, computational logic, translators and facilities of computing languages.

Practical Programming

Students will create solutions to problems in a suitable high-level programming language such as Python. They must create a suitable test plan with appropriate test data. Programming provides students with practical experience of the development of algorithms through coding, enabling a better insight into algorithm-based exam questions which will be tested mainly in Component 02 part B.

Overlap with other subjects

Computer Science naturally links very strongly with many subjects across science, technology, engineering, and mathematics. It is also a subject that has a creative strand, through learning the art of programming. In addition, students will study the ethical, legal, cultural and environmental concerns associated with Computer Science, which links to aspects of PSCHEEE.

Lower School Teaching Staff

Andrew Smith



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Programme of Study

<p>Autumn Term 1</p> <p>Review of Component 01</p> <p>Exam practice</p> <p>GCSE Question Level Analysis</p>	<p>Autumn Term 2</p> <p>Algorithms</p> <ul style="list-style-type: none"> • computational thinking • simple searching algorithms • standard sorting algorithms • algorithms using pseudocode and flow diagrams • interpret, correct or complete algorithms <p>Producing Robust Programs</p> <ul style="list-style-type: none"> • defensive design considerations and maintainability • the purpose and types of testing • how to identify syntax and logic errors • selecting and using suitable test data
<p>Spring Term 3</p> <p>Algorithms and Programming Skill Development</p> <ul style="list-style-type: none"> • practical algorithm writing • review of basic programming constructs in structured programming • the use of subroutines <p>Programming Project</p> <ul style="list-style-type: none"> • set programming tasks • in class supervision and completion <p>Component 01 Revision</p>	<p>Spring Term 4</p> <p>Revision of Components 1 and 2</p> <p>Exam practice</p> <p>GCSE Question Level Analysis</p>
<p>Summer Term 5</p> <p>Exam Practice and Revision</p> <p>Exams:</p> <ul style="list-style-type: none"> • J277/01 – Computer Systems <p>Algorithms and Programming</p>	<p>Summer Term 6</p> <p>Exam Practice and Revision</p> <p>Exams:</p> <ul style="list-style-type: none"> • J277/02 – Computational Thinking

