

WHY COMPUTER SCIENCE



Solve complex & challenging problems



Gain valuable skills to build innovative solutions



Intellectually challenging & stimulating

Content overview

Component 01: Computer systems

Introduces students to the central processing unit (CPU), computer memory and storage, data representation, wired and wireless networks, network topologies, system security and system software. It also looks at ethical, legal, cultural and environmental concerns associated with computer science.

Component 02: Computational thinking, algorithms and programming

Students apply knowledge and understanding gained in component 01. They develop skills and understanding in computational thinking: algorithms, programming techniques, producing robust programs, computational logic and translators.

Practical programming

Students are to be given the opportunity to undertake a programming task(s) during their course of study which allows them to develop their skills to design, write, test and refine programs using a high-level programming language. Students will be assessed on these skills during the written examinations, in particular component 02 (section B).

2 The specification overview

2a. OCR's GCSE (9–1) in Computer Science (J277)

Students take J277/01 and J277/02 to be awarded the OCR GCSE (9–1) in Computer Science.

Content Overview	Assessment Overview
<p>J277/01: Computer systems</p> <p>This component will assess:</p> <ul style="list-style-type: none">• 1.1 Systems architecture• 1.2 Memory and storage• 1.3 Computer networks, connections and protocols• 1.4 Network security• 1.5 Systems software• 1.6 Ethical, legal, cultural and environmental impacts of digital technology	<p>Written paper: 1 hour and 30 minutes 50% of total GCSE 80 marks</p> <p>This is a non-calculator paper.</p> <p>All questions are mandatory.</p> <p>This paper consists of multiple choice questions, short response questions and extended response questions.</p>
<p>J277/02: Computational thinking, algorithms and programming</p> <p>This component will assess:</p> <ul style="list-style-type: none">• 2.1 Algorithms• 2.2 Programming fundamentals• 2.3 Producing robust programs• 2.4 Boolean logic• 2.5 Programming languages and Integrated Development Environments	<p>Written paper: 1 hour and 30 minutes 50% of total GCSE 80 marks</p> <p>This is a non-calculator paper.</p> <p>This paper has two sections: Section A and Section B. Students must answer both sections.</p> <p>All questions are mandatory.</p> <p>In Section B, questions assessing students' ability to write or refine algorithms must be answered using either the OCR Exam Reference Language or the high-level programming language they are familiar with.</p>

Assessment overview

Component	Marks	Duration	Weighting
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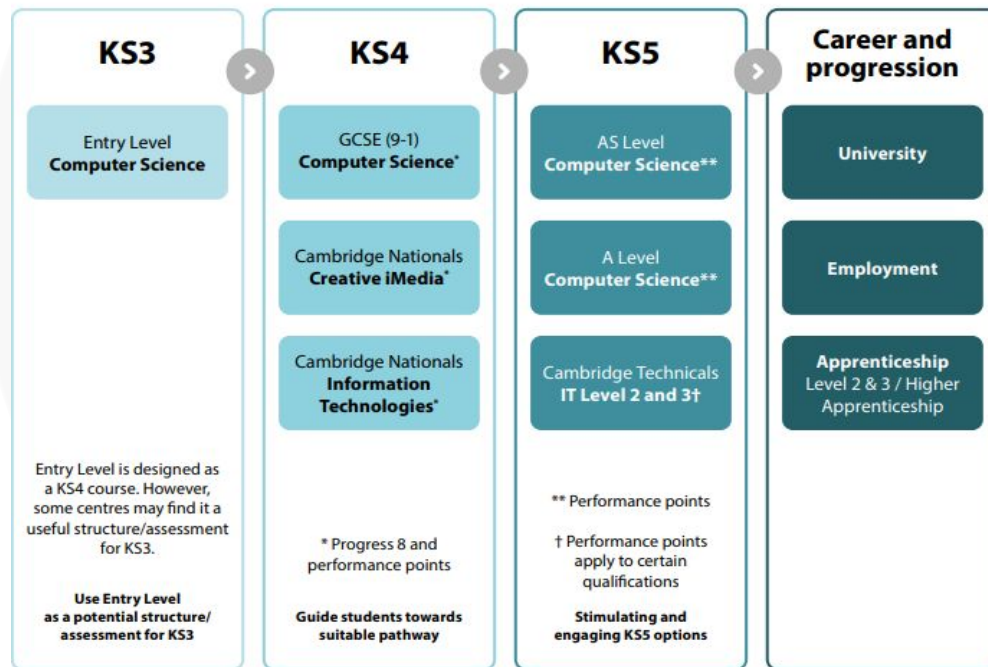
Computer systems (01)	80	1 hour 30 mins	50%
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Calculators not allowed

Computational thinking, algorithms and programming (02)	80	1 hour 30 mins	50%
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Calculators not allowed

PATHWAYS FOR COMPUTING



Everyone should know how to
program a computer, because it
teaches you how to think!

- Steve Jobs

