



Computer Science

OCR - Computer Science

Why choose Computer Science?

Computer Science is a dynamic and challenging subject that helps you understand the technology shaping the modern world. From smartphones and games to artificial intelligence and cybersecurity, Computer Science is about how computers work, how they communicate, and how we use programming to solve real-world problems.

This GCSE is an excellent choice for students who enjoy problem solving, logical thinking and technology. You will learn how to think like a computer scientist while developing valuable skills that are highly sought after by employers and universities.

Computer Science also counts as a science subject within the English Baccalaureate (EBacc).

What will I learn?

The OCR GCSE Computer Science course combines theory with practical programming, giving you a strong foundation in how digital systems work and how software is created.

Computer systems

You will explore what happens inside a computer and how devices connect and communicate, including:

- How computer hardware and software work together
- Memory, storage and data representation
- Computer networks and how the internet works
- Cyber security and protecting data
- Systems software such as operating systems
- Ethical, legal, cultural and environmental impacts of digital technology

Computational Thinking, Algorithms and Programming

This unit focuses on how problems are solved using code and logic. You will learn:

- How to design and analyse algorithms
- Programming fundamentals using Python
- How to write efficient, robust programs
- Boolean logic and decision making
- How professional programmers use development tools and environments

How is the course assessed?

This is a linear GCSE, which means all assessments are taken at the end of Year 11.

Assessment Method

Paper 1: Computer Systems

- Written examination (non-calculator)
- 1 hour 30 minutes
- 80 marks
- Worth 50% of the GCSE
- A mixture of multiple-choice, short-answer and extended-response questions

Paper 2: Computational Thinking, Algorithms and Programming

- Written examination
- 1 hour 30 minutes
- 80 marks
- Worth 50% of the GCSE
- Includes questions where you will write or refine algorithms using Python or OCR's reference language

What skills will I develop?

By studying Computer Science, you will develop:

- Logical and computational thinking skills
- Problem-solving and analytical skills
- Programming and debugging skills
- Resilience and independence
- An understanding of digital responsibility and online safety

These skills are useful in almost every career pathway, not just computing.

What can I do with GCSE Computer Science?

GCSE Computer Science opens the door to a wide range of future opportunities, including:

- A Level Computer Science
- Level 3 BTEC courses in IT or Digital Media
- Apprenticeships in technology-related fields
- University courses in computing, engineering, cybersecurity and data science.

Careers linked to Computer Science include software developer, game designer, cybersecurity analyst, data scientist, network engineer, web developer and many more.

For further information see

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