



COMPUTER SCIENCE

AWARDING BODY: OCR

QUALIFICATION: GCSE

AVAILABLE: ALL STUDENTS

COURSE OUTLINE

This option, which will count as one GCSE at the end of the course, introduces the scientific and technical side of working with IT and computers. The technical and scientific nature of this course has seen it be included in the English Baccalaureate (EBacc.) as a "Science" subject.

This exciting new course has been designed to develop your IT skills through practical activities, but also to help you develop a detailed technical understanding about how computers work. Aimed at the future "App" developers, problem solvers, programmers and computer scientist, you will learn in detail how these devices, which we rely so much upon, actually work, and how to write computer programmes to solve problems. Although there are practical elements, this GCSE course will be assessed through two examinations and a programming coursework project.

This subject is most suitable for students who:

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| <ul style="list-style-type: none">• understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation• analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs• think creatively, innovatively, analytically, logically and critically• understand the components that make up digital systems, and how they communicate with one another as well as with other systems• understand the impacts of digital technology to the individual and to wider society. | <ul style="list-style-type: none">• Introduction to computer systems looking at the functions of software and hardware.• Understanding the functions of internal components of a computer.• Investigate how data on a computer can represent numbers in binary and hexadecimal characters, images and sound.• The study and understanding of "emerging technologies".• Investigate network communications, system security and the use of the Internet.• Computer programming, computational logic and the creation of "apps".<ul style="list-style-type: none">• The ethical, legal, cultural and environmental concerns when using computers. |
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You must have a very keen interest in wanting to know how computers work.

You must like the idea of writing your own computer programmes.

You should like a challenge and problem solving tasks.

As Computer Science is an EBacc subject, you will be undertaking scientific working and using binary and hexadecimal, so you must be good at Maths (top sets) and Science.

Choose this subject if:

- You want to improve your IT skills and understanding
- You prefer doing practical coursework assignments based on problem solving
- You want to develop a technical understanding of how computers actually work
- You want to develop your computational thinking skills
- You want 'hands on' experience of working with computers and writing computer programmes
- You want to be a creator and writer of 'apps' and not just a user of them
- You want to learn about the role IT will play in future careers and enjoy problem-solving activities
- You are serious about a career in the IT/Computing industry.



ASSESSMENT METHOD

Component (01) 40%	Computer systems	Written paper – 80 marks 1½ hrs
Component (02) 40%	Computational thinking, algorithms and programming	Written paper – 80 marks 1½ hrs
Component (03) 20%	Programming project	Non-Exam assessment – 40 marks 20 hrs

SKILLS ACQUIRED

- Using computer software correctly; including, databases and programming websites
- Developing key skills in numeracy, communication and ICT.
- Identify and understand internal and external computer hardware.
- Develop computational thinking, along with conceptual learning and understanding
- Develop problem solving skills by applying ICT to real life situations.
- Developing skills of writing and troubleshooting computer programmes to solve problems

Specification: <http://www.ocr.org.uk/Images/225975-specification-accredited-gcse-computer-science-j276.pdf>

Assessment: <http://www.ocr.org.uk/qualifications/gcse-computer-science-j276-from-2016/>