GCSE Computer Science

This is a core academic subject can contribute to the English Baccalaureate. Top

universities will expect entrants to have studied and achieved a good grade in these

subjects.

Aims

To enable students to:

• 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 and with other systems.

• understand the impact of digital technology to the individual and to wider

society.

• apply mathematical skills relevant to computer science.

Assessment

Computer Systems Examination: 50%

This is a 1.5 hour examination, containing both short and long answer questions.

Computational Thinking, Algorithms and Programming Examination: 50%

This is a 1.5 hour examination, containing both short and long answer questions

and questions requiring students to write algorithms to solve problems.

Examination Board

OCR: Further details available at:

https://www.ocr.org.uk/qualifications/gcse/computer-science-j277-from-2020/

Any Questions?

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Main Topics and Information about the Course

Computer Systems:

Topics include the Central Processing Unit (CPU), computer memory and storage,

wired and wireless networks, network topologies, system security and system

software. Students will become familiar with the impact of computer science in a

global context through the study of the ethical, legal, cultural and environmental

concerns associated with computer science.

Computational Thinking, Algorithms and Programming:

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 and data representation. Students

will become familiar with computing related mathematics.

Programming Project:

Students will need to create suitable algorithms, which will provide a solution to the

problems identified in a given task. They will then code their solution in a suitable

programming language. The solution must be tested at each stage to ensure it

solves the stated problem and learners must use a suitable test plan with

appropriate test data and make relevant conclusions regarding their solution.

Where might this lead?

GCSE computer science offers students a valuable insight into the code needed to

build programs and the knowledge to use it. It opens up access to A level computer

science and is well complemented by maths. Computer Science at university

requires maths A level but is greatly enhanced by computer science A level. There is

a growing demand for graduates in this industry for roles in analytics, programming,

IT consultancy, manufacturing and cyber security.