



COURSE DESCRIPTOR

GCSE COMPUTER SCIENCE

SUBJECT OVERVIEW

The OCR GCSE Computer Science (J277) qualification introduces students to the fundamental principles of computing, developing both theoretical understanding and practical problem-solving skills. The course equips learners with the knowledge and skills required to understand how computer systems work, how software is developed, and how computational thinking can be applied to solve real-world problems.

The qualification has been designed in consultation with teachers, employers and higher education institutions to ensure it is relevant, rigorous and engaging, while providing strong progression routes to A Level Computer Science, vocational qualifications, and careers in the digital and computing sectors.

PRIOR LEARNING REQUIRED

English, Mathematics

EXAM BOARD

OCR [ocr.org.uk]

COURSE CONTENT

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Year 1	Year 2
- Algorithms – computational thinking, algorithm design, and standard searching and sorting algorithms - Programming fundamentals – data types, control structures, and programming constructs - Producing robust programs – testing, validation, and defensive design - Boolean logic – logic gates, truth tables, and Boolean expressions - Programming languages and IDEs – translators, development environments, and coding tools	- Systems architecture – the structure and function of the CPU, the fetch–execute cycle, and embedded systems - Memory and storage – primary and secondary storage, data storage units, and compression - Computer networks – network types, topologies, protocols, and data transmission - Network security – threats, vulnerabilities, and methods of prevention - Systems software – operating systems and utility software - Ethical, legal, cultural and environmental impacts of digital technology

ASSESSMENTS

277/01 – Computer Systems

1 hour 30 minutes, 80 marks, 50% of final grade

Written paper (non-calculator)

J277/02 – Computational Thinking, Algorithms and Programming

1 hour 30 minutes, 80 marks, 50% of final grade

Written paper (non-calculator)



Both examinations include a mixture of multiple-choice, short-answer, and extended-response questions and are taken at the end of the course in Year 11.

TEXTBOOKS/REVISION GUIDES

Title	ISBN	Author
GCSE OCR Computer Science	1910523216	by S Robson (Author), PM Heathcote (Author), PG Online (Editor)
GCSE Cambridge OCR Computer Science: Illustrated Revision	1910523232	PG Online

HIGHER EDUCATION PATHWAYS

COMPLEMENTARY SUBJECTS OF STUDY

Mathematics, Physics and Business Studies

CURRICULUM DIRECTOR

Mr Scott Graham