COMPUTER SCIENCE

Exam board: AQA

Aims of the Course

Advances in computing are transforming the way we work and the new Computer Science specifications are changing with the times. This popular qualification refreshes the content where needed but retains the most popular and effective aspects of the previous specifications. This up-to-date specifications that focus on the knowledge, understanding and skills students need to progress to higher education or thrive in the workplace.
The exams will measure how students have achieved the following assessment objectives.

AO1: Demonstrate knowledge and understanding of the principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
AO2: Apply knowledge and understanding of the principles and concepts of computer science, including to analyse problems in computational terms.
AO3: Design, program and evaluate computer systems that solve problems, making reasoned judgements about these and presenting conclusions.

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Types of Learning Experiences:

Students of A Level Computer Science will develop the ability to apply the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms and data representation.
Additionally students will analyse problems in computational terms through the practical experience of solving such problems, including writing programs to develop the capacity for thinking creatively, innovatively, analytically, logically and critically the capacity to see relationships between different aspects of computer science.
Learners will acquire mathematical skills related to Boolean algebra; comparison and complexity of algorithms as well as number representations and bases.
Finally, learners will enhance their ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology

Link Subjects:

Computer Science is complimented by study of Maths A Level though it is not necessary to study it alongside. It works well with most other A Levels including modern foreign languages

Progression to Higher Education:

This A Level is relevant to many HE destinations and valuably can lead on to a computer science degree

Careers:

. Digital copywriter - IT sales professional - IT trainer
Nanotechnologist - Network engineer - PPC specialist - Social media manager - Supply chain manager - Technical author - Web content manager

Entry requirements:

A minimum of 5 grades 9-4 at GCSE including English and Maths. GCSE English at a grade 5 or above is preferred.

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Content:

1. Fundamentals of programming
2. Fundamentals of data structures
3. Fundamentals of algorithms
4. Theory of computation
5. Fundamentals of data representation
6. Fundamentals of computer systems
7. Fundamentals of computer organisation and architecture
8. Consequences of uses of computing
9. Fundamentals of communication and networking
10. Fundamentals of databases
11. Big Data
12. Fundamentals of functional programming
13. Systematic approach to problem solving

Non-exam assessment - the computing practical project assesses student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. Students will be expected to follow a systematic approach to problem solving

Weighting of assessment

Paper component	Mark
Paper 1	**100**
Paper 2	**100**
NEA	**75**