



## Key Stage: 5

### Subject: Computer Science

**Aims of the subject:** Computer Science encourages students to develop

- an understanding of, and the ability to apply, the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms and data representation
- the ability to analyse problems in computational terms through practical experience of solving such problems, including writing programs to do so
- the capacity for thinking creatively, innovatively, analytically, logically and critically
- the capacity to see relationships between different aspects of computer science
- mathematical skills related to:
  - Boolean algebra
  - comparison and complexity of algorithms (A level only)
  - number representations and bases
- the ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology.

### A Level Examination Board: AQA

#### Assessment Overview:

AS – On-screen exam (1hr 30mins) 50%. Written exam (1hr 30mins) 50%.

A Level – On-screen exam (2hrs 30mins) 40%. Written exam (2hrs 30mins) 40%. Non-exam assessment 20%

Course	What will I study	Assessment
Year 1 (AS)	<b>Term 1</b> Programming skills Fundamentals of programming Fundamentals of data structures Theory of computation Fundamentals of computer systems	You will be given individual questions from past papers during lessons based around the topic that you are currently learning. These will be assessed and compared to your target grade. In January there will be a mock exam covering the appropriate topics.

	<p><b>Term 2</b>  Programming skills  Fundamentals of data representation  Fundamentals of computer organisation and architecture  Fundamentals of communication and networking  Consequences of uses of computing</p> <p><b>Term 3</b>  Software development  Revision for AS exams</p>	<p>You will be given individual questions from past papers during lessons based around the topic that you are currently learning. These will be assessed and compared to your target grade. In May there will be a full mock exam.</p> <p>AS Level examinations.</p>
Year 2 (A Level)	<p><b>Term 1</b>  Advanced programming skills  Advanced data structures  Fundamentals of algorithms  Further Theory of computation  Advanced data representation  Fundamentals of databases  Big Data</p> <p><b>Term 2</b>  Advanced programming skills  Advanced computer systems  Advanced computer organisation and architecture  Advanced principles of networking  Fundamentals of functional programming  Further Consequences of uses of computing</p>	<p>You will be given individual questions from past papers during lessons based around the topic that you are currently learning. These will be assessed and compared to your target grade. In January there will be a mock exam covering the appropriate topics.  Your practical preparation for the non-exam component will be frequently reviewed.</p> <p>You will be given individual questions from past papers during lessons based around the topic that you are currently learning. These will be assessed and compared to your target grade. In January there will be a mock exam covering the appropriate topics.</p>

	<b>Term 3</b> Revision for A Level examinations	Your practical preparation for the non-exam component will be frequently reviewed.  A Level examinations
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