



Computer Science (AQA)

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Computer Science is an exciting subject that encourages students to think creatively, logically and critically and to develop advanced problem solving skills. You don't have to be able to program before taking the course, but you must have a genuine interest in developing your programming skills outside of lessons. This is not an easy course, however if you are serious about a career in computers, it is essential.

Content and Assessment

This course is assessed in three modules.

Paper 1: 40% of A Level

On-screen exam: 2 hours 30 minutes.

In this unit students learn the fundamentals of programming: assignment, looping, branching, procedures, functions, algorithms. This paper tests a student's ability to program by answering questions based on a partially complete program, as well as their theoretical knowledge of computer science.

Paper 2: 40 % of A Level

Written exam: 2 hours 30 minutes

This unit covers theoretical topics such as how data is represented in computer science, the basic building blocks of computer systems and computer architecture, generations of computer language. We will also cover the fundamentals of the client server model and the use of protocols to communicate across networks as well as the role of databases and Big Data.

Non-exam Assessment: 20% of A Level

Students will work on a project of their own choice and are assessed on their ability to create a programmed solution to a problem. Past projects include a dungeon explorer game and a Rubik's cube solver.

Teaching

The course involves both theoretical and practical elements. Teaching will involve a great deal of practical programming, especially when your programming skills are being developed.

The future

Possible careers include: artificial intelligence, computational economics, intelligent interfaces, computer graphics, computational linguistics, privacy and security, robotics, data-management systems, networks, program languages, and machine learning and visualisation. Fashions can change in the technology, but one thing remains constant. Computers will always need to be programmed, and an understanding of these principles serve as a firm foundation whichever direction you choose to take in the future.



Independent Learning

Independent learning tasks in Computer Science

<p>1. After each syllabus topic, review your theory notes and create your own revision "flash cards". Collaborate with others in the group to create revision mind-maps using http://bubbl.us/</p>
<p>2. Check your grades and teacher feedback after each HW/ assessed topic and identify any areas of weakness that you need to review in more detail. Add this detail to your revision notes.</p>
<p>3. Regularly visit the Computer Science for Fun website (http://www.cs4fn.org/) and read through topics to improve your understanding of computing concepts. There are additional links specifically for A2 Computing here http://www.cs4fn.org/teachers/syllabus/aqa-a2computing.php</p>
<p>4. Every topic we study has an extension section attached to help you practice each programming skill you have learnt. Use them!</p>
<p>5. As a school we enter the British Informatics Olympiad, a national programming competition. You can find past worked problems on Bloodle. Attempt them.</p>
<p>6. Go to http://download.oracle.com/javase/tutorial/ and follow whichever java trail takes your fancy. Do some real independent learning.</p>