Computer Science

What will I study and learn?

The Computer Science specification is designed to provide the knowledge and skills suitable for participation in a rapidly evolving computer-dependent society. You will gain an understanding of or ability to apply the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms, and data representation. You will also learn how to analyse problems in computational terms through practical experience of solving such problems, including writing programs to do so.

You will cover contemporary systems architecture; software and software development; exchanging data; data types; representation and structures; and legal, moral and ethical issues.

Alongside this you will be taught how to program using an object-orientated programming language. You will learn the theory behind programming, looking at computational thinking, problem-solving and algorithms.

The coursework brings together all the programming skills learnt, developing from a problem to a solution. The system analysis and design aspects of this coursework, together with the necessary time-management, are highly transferable skills that are a real benefit to studying A level Computer Science.

What skills should I have and what will be developed?

You will need to have a strong mathematical background with the ability to solve and decompose problems. You should have evidence of programming ability, either through successful completion of a GCSE in Computer Science or a programming portfolio. You will develop your programming ability further to include object-orientated programming skills and the confidence to independently learn new programming languages. Your ability to work creatively to identify and solve problems will grow throughout the course.

Future opportunities

Computer science qualifications open a wide range of opportunities in engineering, science, cyber security, technical and system design careers, software development, ICT and commerce, the media, and the finance and management sectors.

This course can support your entry to any field of study or work as it gives you an understanding of technology and the impact of this on modern day society.

"The small class sizes in Computer Science mean that there is a great amount of contact time with teachers – something that is invaluable to me and my learning.

Tom, OB

Courses: Computer Science, Physics, Mathematics and Further Mathematics



Want to know more?

Dr Madeline Stow Head of Computer Science mstow@bgs.bristol.sch.uk

> Exam Board: ocr.org.uk

> > 40%

40%

20%

How will I be assessed?

Paper 1

Computer Systems. This written paper assesses knowledge and understanding of the course.

Paper 2

Algorithms and Programming. This written paper assesses the problem-solving skills required to apply knowledge from paper 1 to different scenarios.



This non-examined assessment allows you the freedom to identify a problem and create a substantial program to solve that problem. The analysis, design, development, and evaluation process of that program is written up as a report which is then marked. The coursework is completed in the first year of the course.

ENTRY REQUIREMENTS

You must have studied Computer Science GCSE and should achieve a grade 7 or above. If Computer Science was not offered at your school, it is essential that you show evidence of programming knowledge. You should achieve a grade 7 or above in Mathematics and it is desirable that you achieve a grade 6 or above in English.