

Computer
Science



Exam Board
OCR

Syllabus number
H446



King's
School

“What a computer is to me is the most remarkable tool that we have ever come up with. It’s the equivalent of a bicycle for our minds.”

Steve Jobs

Course entry requirements

Grade 5 in GCSE Mathematics.

Why should I study Computer Science?

According to MIT “we are heading towards a period of exponential change and unprecedented technological development”. Oxford University research suggests that high-earning jobs in the white-collar sector are five times more likely to be automated in the next 20 years. Two thirds of the current generation of students will be employed in careers that do not exist yet. A high-quality computing education equips students to use computational thinking and creativity to understand and change the world. Computational thinking is the essential skill for solving problems, designing systems and learning about human behaviour in the modern world. It might draw upon concepts rooted in Computer Science but to excel in today’s world it has to be a fundamental element in how we all think and work. Computing is perfect for anyone with an innate love of computers but is also highly desirable for anyone aiming towards further studies or careers in STEM (Science, Technology, Engineering or Maths) subjects.

What does the course look like?

Exam Board: OCR 80% examination, 20% Non-Examined Assessment Examinations:

- Computer Systems: Characteristics of contemporary systems architecture; software and software development; exchanging data; data types, representation and structures; legal, moral, ethical and cultural issues
- Algorithms & Problem Solving: Elements of computational thinking; problem solving and programming; algorithms.
- Programming Project: Set your own brief; Analysis of the problem; design of the solution; implementation of the solution; evaluation

How will I learn?

The course features a wide range of teaching and learning approaches including interactive classroom study, lectures and group tasks. There will be a focus on programming, which emphasises the importance of computational thinking as a discipline that will require significant independent and/or private study and research. By putting computational thinking at the core of your study, you will develop the skills to solve problems, design systems and understand human and machine intelligence. There will be exciting opportunities to apply the academic principles learned in the classroom to real-world systems with a variety of programming challenges.

What kind of things might the subject lead me to?

Computer Science is a core subject, welcomed by universities and employers. Whether you choose Computer Science, Engineering or a traditional science, you will find that computational thinking is a vital skill. It shows that you are capable of intense analytical thought that allows you to deconstruct problems before writing algorithmic solutions and finally evaluating your solution. It provides access to a wide and disparate range of degree courses.