Waltham Forest College

GCSE Computer Science

This GCSE course can only be taken as part of a package of GCSEs.

The GCSE Computer Science course equips students with the knowledge and skills necessary to understand and participate in the rapidly evolving field of computer science. Through a blend of theoretical study and practical programming tasks, students explore key concepts such as algorithms, data representation and computational thinking.

This course emphasises problem-solving, creativity and computational thinking, preparing students to engage with the challenges and opportunities of the digital age. Students develop proficiency in programming languages and gain insight into the ethical and societal implications of computing technologies.

- Sector Overview
  GCSE stands for General Certificate of Secondary Education, and they are part of the national curriculum. Typically, GCSEs are studied between the ages of 14-16 in years 10 and 11.
  Waltham Forest College's GCSE courses are studied as a package for those who are new to the country or those who achieved a Grade 3 in their English and maths GCSEs in Year 11.

- Entry Requirements
  The entry requirements for this course are:
  This GCSE course is open to those who are new to the country, or those who achieved a Grade 3 in their Computer Science, English and maths GCSEs in Year 11.
  For those new to the country, there will be an entrance assessment to complete. This is common to the GCSE programme and not for this subject individually.

- What will I study?
  This course consists of the following:
  Programming Fundamentals: Learn the principles of programming and develop proficiency in a high-level programming language such as Python or Java. Explore concepts such as variables, control structures, functions and object-oriented programming.
  Computational Thinking: Develop analytical and problem-solving skills through the application of computational thinking techniques. Learn how to break down complex problems into smaller, more manageable tasks and devise algorithms to solve them efficiently.
  Computer Systems: Gain an understanding of the hardware and software components that make up a computer system. Explore topics such as binary representation, logic gates, memory management and operating systems.
  Data Representation: Investigate how data is stored, processed, and transmitted within computer systems. Learn about different data types, data structures, and encoding schemes and understand the implications for data security and integrity.

- How will I be assessed?
  The assessment comprises two exam papers and a programming project.
  Paper 1 assesses computational thinking and problem-solving skills through a series of multiple-choice and

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short-answer questions.

Paper 2 assesses theoretical knowledge of computer science concepts including programming techniques, algorithms, data representation, computer systems and the ethical and legal implications of computing technologies.

The programming project involves designing, coding, testing and evaluating a program to solve a real-world problem. Students document their project in a written report and submit their code for assessment.

- Enrichment

Our Student Common Room is a great place to unwind and relax during your breaks. It features pool tables, table tennis, a gaming corner and lots of comfy sofas so you can refresh before your next lesson.

Themed events are held in the Common Room so you can get the best experience of being a Waltham Forest College student.

- Work Experience

Work experience will be sourced for learners on this pathway at the end of their GCSE study. This is owing to the intense study and limited time ahead of externally assessed examinations.

- Progression opportunities

Completion of GCSE Computer Science opens diverse pathways for further study and career opportunities within the field of technology.

Students may choose to continue their education with A Levels in Computer Science, Mathematics or related subjects, or pursue vocational qualifications such as BTEC IT or apprenticeships in areas such as software development, cybersecurity or data analysis.

This qualification also prepares students for entry-level roles in industries such as software development, IT support, web development and digital marketing.

Whether pursuing higher education or entering the workforce directly, students emerge from this course with a range of transferable skills including problem-solving, analytical thinking, attention to detail and coding proficiency, essential for success in the digital economy.

- Alumni

Waltham Forest College is a vibrant and aspirational college and will support you to reach your career aspirations. Last year 96% of learners progressed onto a positive destination either to higher levels of study, employment, or an Apprenticeship.