

GCE Computer Science

Year 12

Paper 1

Programming - Data structures -Systematic approach to problem solving -Theory of computation

On Screen Examination: Students answer a series of short questions and write/adapt/extend programs in an electronic answer document.

Paper2

Data representation - Computer systems -Computer organisation and architecture - Consequences of uses of computing - Communication and networking

Written Examination: Students answer a series of short-answer and extended-answer questions.

Year 13

Paper 1

Programming - Data structures –Algorithms -Theory of computation

On Screen Examination: Students answer a series of short questions and write/adapt/extend programs in an electronic answer document.

Paper 2

Data representation - Computer systems -Computer organisation and architecture - Consequences of uses of computing - Communication and networking - Databases - Big Data - Functional programming.

Written Examination: Students answer a series of short-answer and extended-answer questions.

Project based Assessment

This assesses student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. Students will be expected to follow a systematic approach to problem solving.

For more information email gmatthews@littleheath.org.uk



LITTLE HEATH SCHOOL A Level Computer Science



In the sixth form we study Computer Science for the AQA GCE qualification at A level.

If you enjoy a challenge, like solving logical puzzles and working with computers then you should consider a Computer Science A-Level. You will learn how computers work, how to program them and consider the impact they have on our lives. You will learn how to tackle major software development by designing and writing your own programs to solve real-world computing problems.

The GCE is a two year course and is mainly based on examination, with one practical project assessed through coursework in the second year. Our results record at Little Heath is good, with teachers and students working together to achieve excellent grades.

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Gaining Understanding

The A level course in computing is an exploration of the fundamental concepts behind most of today's technology. In particular the course will:

- allow students to acquire and demonstrate knowledge of the fundamental principles of Computing;
- learn about algorithms and develop their analytical and problem-solving abilities in a computing context;
- acquire and demonstrate a practical understanding of programming by solving real-world problems;
- develop an understanding of the hardware and software aspects of Computing—what's inside a computer and how, in detail, it works.

Students who have not studied Computing at GCSE can still apply but should discuss their application with a member of the Computing/ICT Department

Developing Skills

During the lessons, about half of the student's time will be "hands on" work with computers. They will expand their range of programming skills; the basics of problem solving; how the hardware works; computer networking and how computer projects are planned and managed.

Students will also spend a considerable time planning and implementing their own computer program, from identifying a problem, through planning the solution to writing the code, testing the software and documenting it.

Higher Education and Employment

Many students have gone on to study Computing at universities such as Swansea, Southampton and Oxford. The demand for IT professionals - from Programmers to Network Administrators - makes a Computing qualification a highly marketable asset. Computing is also equally valuable as a foundation for other university level courses. Some aspects of Computing are particularly applicable to technical disciplines such as engineering and science, but knowledge of how to manage change in IT systems is a valuable skill in just about any profession from accountancy to medicine.

Cambridge Technical in IT and Computer Science

These are different courses offered in the sixth form, with very different emphases and subject matter. In general, IT studies how computers are **used**, Computing studies how computers **work**.

As a result there is little or no overlap between these courses.

Some students will choose to study two of these subjects in the sixth form. This can be a particularly good choice for those who wish to study Computing or IT at University or directly enter the business world specialising in IT.

Academic Requirements

Sixth form work requires a high level of motivation and self-discipline. Success depends on the student being organised to meet deadlines and motivated to work independently.

For Computing, five *good* GCSE grades are required. Although the mathematics content of the course is relatively low, successful candidates usually have a grade 6 or above in mathematics.