GCSE Computer Science

KS4 Curriculum Overview (Year 9, 10 and 11)

Year 9

During Y9 Pupils gain an understanding of many of the theory aspects of the course. They develop their programming skills to understand the concepts of programming in an efficient manner.

Autumn Term

Pupils learn about Programming using high – level programming language. They learn the techniques of programming that enables them to make their programmes easy to read and efficient. Pupils learn about errors in programming and use test plans to identify and fix errors. There is a focus on data types and structures and programming constructs to support pupils understanding of how to programme. Pupils also learn about algorithms to solve a particular problem such as sorting information.

Spring Term

The Spring Term looks at how data is stored in a computer. Pupils learn that text, images and sound are stored in a computer as 1's and 0's. They learn how to convert binary values into denary values and also hexadecimal values. Another aspect covered in the Spring Term is how data is encrypted to keep information secure. Pupils also look at how data is stored in a database.

Summer Term

During the Summer Term, pupils look at the physical components of a computer and learn what each part does and how they work together. They look in detail at what makes a computer work and begin to understand the advantages and disadvantages of different computer hardware.

Year 10

Pupils develop their knowledge of computing further by recapping the knowledge in Year 9 but also developing their programming skills further. Pupils also learn about how computers communicate with one another and over the internet.

Autumn Term

Pupils look at how computer networks work. They develop an understanding of the advantages and disadvantages of different types of network and look at network security. They investigate what the world wide web is and learn how it works.

Spring Term

The spring term is about developing programming knowledge to enable pupils to read and write to a .txt file. Pupils develop their confidence at programming a solution to a task. They start to understand what is expected of them for the programming task aspect of the course.

Summer Term

Pupils undertake the 20 hour programming task. This is conducted under controlled conditions where pupils independently write a solution to the set task. The project is then sent off to the exam board but does not count towards the pupil's final grade.

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Year 11

Obviously this is a big year for the Y11 pupils. Much of the year is about preparation for the GCSE exams and therefore there is an emphasis on exposing pupils to more and more exam style questions.

Autumn Term

Pupils look at 'The Bigger Picture'. This looks at the impact that the use of technology has on our lives. There is a specific focus on health, energy use, resources, and pollution. Pupils also look at the ethical impact of technology and the legal impact of using technology.

Spring Term

This term is about exam preparation and revision in the lead up to the pupil's final exams.