We are living in the Computer Age; it engulfs us, pervading every aspect of our daily routines: our work, our leisure, our social interactions and our general communication. To be able to live life to the full and embrace all the wonders of the modern age, an understanding of how technology works and the effects that it has on our everyday lives is critical.

If you are a logical individual and have an analytical approach to problem solving the course provides you with the opportunity to design and program solutions for given problems. You will learn to become computational thinkers, which is a higher-level process, learning to interpret and analyse problems and form innovative solutions. These skills are important and transferable across all subjects, and future careers.

Year 9

You will develop a deeper understanding of Converting Number Bases and learn how to convert between binary, decimal and hexadecimal. Your study will focus on units of Information and how to convert between unit sizes, for example, GB to TB linked to number bases. Representing characters, images and sound links to binary conversions will be studied. You will also learn key algorithms used for searching, sorting and compressing data as well as looking at the advantages and disadvantages of these.

Year 10

You will explore data types and structures and how computers store and manage different types of data in different ways. How Arithmetic, Relational and Boolean operations are used within programs to carry out calculations and decision making with programming. Computational thinking including: decomposition, pattern recognition, abstraction and algorithm design, will teach you to think in a logical way to solve problems. In year 10, you will complete a programming project.

Year 11

You will develop an understanding of the fundamentals of Computer Networks and how different types of networks are set up and have advantages and disadvantages with potential security issues. Fundamentals of Cyber Security covers different types of viruses and malware attacks with prevention methods. Ethical, legal and environmental impacts of digital technology on wider society, including issues of privacy will allow you to develop a moral view of how computers impact the society we live in.

Which careers can Computer Science lead to?

Progression to an ‘A’ Level course, vocational courses and degree level courses in the areas of computing, engineering and science. Whilst this course is not specifically mapped to any particular industry standard IT qualifications, it will provide a sound preparatory basis of study for them. In addition, the course provides the knowledge, skills and understanding that a growing number of employers are demanding.

The operating system for all innovation...