

## Computer Science

Computer Science at Thames Valley School embeds the knowledge of computation, information, and automation. It covers a wide range of topics, from theoretical aspects such as algorithms, theory of computation, and information theory, to practical applications such as software engineering, database systems, web development, artificial intelligence, and cyber security.

Computer Science also involves designing and using hardware and software systems that can solve real-world problems in various domains such as science, business, culture, and entertainment.

It is a dynamic and interdisciplinary field that requires strong mathematical and logical skills, as well as creativity and innovation. Studying Computer Science encourages pupils to think abstractly and rigorously, to model and analyse complex systems, and to create and implement efficient and reliable solutions.

Studying Computer Science also prepares pupils for a variety of careers in different sectors, such as software development, web design, data analysis, machine learning, cyber security, and more.

At Thames Valley School, pupils from primary through to the end of key stage 3 study a varied curriculum covering the breadth of Computer Science topics, as well as digital literacy to ensure our pupils have the knowledge and skills to, not only keep themselves safe online, but to use computing devices safely and effectively.

At key stage 4, there is the option for pupils to choose a qualification in Computer Science at either GCSE or Entry Level standard.

These options can support our pupils to use these skills more widely and prepare for life after school. Whether they wish to create new technologies, improve existing ones, or explore the limits of computing, Computer Science offers our pupils many opportunities and challenges as well as providing them with vital tools to access the online and digital world.