

# COMPUTER SCIENCE

Our intention in Computing is to provide an exciting, practical focus on real-life programming, developing skills relevant to the future.

The key principles that underpin our curriculum are understanding and applying the fundamental principles and concepts of Computer Science: abstraction, decomposition, logic, algorithms, and data representation. Pupils will also analyse problems in computational terms through practical experience of solving such problems including designing, writing and debugging programs.

The course will help you learn about critical thinking, analysis and problem solving. We hope you'll find it a fun and interesting way to develop these skills, which can also be transferred to other subjects and even applied in day-to-day life.

The computer systems and programming unit will teach you the theory about a wide range of issues such as hardware and software, the representation of data in computer systems, databases, computer communications and networking, programming and more.

All students will also be given the opportunity to explore using Python using real life situations as examples to work from. This exposure will then allow students to explore their own interests and develop an enquiring mind, allowing them to become the programmers of the future.

We study computing because all students, regardless of their future career will need an understanding of how computers work. Computers are becoming an even greater presence in all forms of life. There are job roles that our students will work in that today do not even exist, such is the ever-changing world we currently live in. Computer Science helps provides our students with the necessary skills to understand and evolve in a dynamic future.

## The skills and knowledge we develop include

- Understand and applying the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms, and data representation
- Analysing problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs
- Thinking creatively, innovatively, analytically, logically and critically
- Understanding the components that make up digital systems and how they communicate with one another and with other systems
- Understanding the impact of digital technology on wider society, including issues of privacy and cybersecurity
- Applying mathematical skills relevant to computer science.