

# COMPUTING

---

Student year: **Lower 4 (Yr 8)**

Head of Department: **Mr J Friendship**

## SUBJECT OVERVIEW

The students in Year 8 will explore Computer Science in greater depth ensuring they are well equipped for GCSE and A-level subjects. A more mature attitude will be taken to e-safety with the students learning ethical hacking, concluding in the creation of an ethical hacking club and competitions at the GCHQ Cyberfirst Girls' Competition.

The students will learn about computing through three distinct learning pathways:

- The National Curriculum (with programming emphasis)
- Computer Training on software they need to extend their learning in all subjects
- E-Safety (keeping students safe in the digital environment)

### National Curriculum

Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming.

Understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal].

Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems.

Understanding Computers. Binary and Hex

### Computer Training

Memory, Cache and Secondary Storage

Networking

HTML Coding

Web Development

App Development

3D Printing

Python Next Steps

### E-Safety

Ethical hacking - demonstrating online vulnerabilities

Cyber Crime and the Law