Computing

Preparing students for tomorrow, bit by bit

The Computing department will help to create, share, and apply knowledge in all branches of Computer Science and ICT. We will educate students to be successful, ethical, and effective problem-solvers with a passion to innovate and create, rather than just passive consumers and users of technology. We will develop an understanding and appreciation of all aspects of digital products, from how they work to how they look. We will foster curiosity and encourage exploration to create students who can contribute positively to the well-being of our society and who are prepared to tackle the complex 21st Century challenges facing the world.

Summary focus areas:

- Innovate, create, develop
- Solving 21st Century problems
- Active developers not passive consumers

Autumn		Spring		Summer
Video and Sound Editing	Binary and Logic	Data Handling	Networks, Laws and E-Safety	Intro to Python

Homework for Computing is designed to cover a range of concepts and topics to extend and supplement the curriculum delivered in lessons.

Students can hand in homework either digitally or on paper, and will be expected to exercise their creative as well as academic skills. Homework helps to develop independence, resilience and time-management skills. Activities could include tasks such as:

- Research and presentation of findings
- Creative use of graphics and design to present understanding
- Visual representations of concepts and theories
- Literacy-based activities, such as poetry or song lyrics for a topic
- Comprehension-based quizzes

Completed activities will be collected and marked, and failure to submit homework on time will require students to attend interventions to ensure this is not left unsubmitted for too long.

Unit	Duration (lessons)	Learning Objectives/Outcomes
Video and Sound Editing	16	• Film making techniques and methods • Planning video • Editing video in linear video editing software • Applying effects and transitions • Use and impact of sound effects and music • Types of sound effect • Using sound libraries and editing sounds
Binary and logic	12	• Counting in binary • Converting text into binary • Understanding and evaluating Boolean logic • Logic diagrams and truth tables • Solving problems using logic
Data Handling	16	• Revisit basic spreadsheet functionality • Advanced formulas and features and their uses • Using spreadsheets in real-life contexts • Uses of data and databases • Database terminology • Creating databases using Microsoft Access • Forms, queries and reports
Networks, Laws and E-Safety	16	• How computers communicate using networks • Types of network and their uses • Security threats to networks • Preventing security issues using hardware and software • Legislation and data • Social engineering • Staying safe online • Malware and viruses
Intro to Python	16	• Introduction to algorithms • Introduction to programming languages • Common programming constructs • Solving problems with code • Procedures • Variables and data structures • Commenting and documenting code