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
Multimedia production	Data handling and manipulation	Robotics and web programming

Homework for Computing is set with half-termly themes that cover a range of concepts and topics to extend and supplement the curriculum delivered in lessons. Students are offered a menu of activities to choose between, with each activity being worth a number of 'points' based on its size, complexity or difficulty. Each half-term students will be expected to hand in any combination of activities they choose that add up to the required target number of points. By giving the students flexibility to choose their homework tasks and when they complete them across the half-term helps to develop independence, resilience and time-management skills. Activity choices could include tasks such as:

- Research and presentation of findings
- Creative use of video, animation and sound 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 at the end of each half-term block, but students are free to hand in completed work throughout the period to help them balance and manage their workload.

Unit	Duration (lessons)	Learning Objectives/Outcomes
Development of Computing	8	• Origins of computing during WWII • Famous women in computing • History of video games • Binary and programmable computers • General purpose computer components • Networking • The Internet
Multimedia 1: Animation	8	• Types of animation • Purpose of animation • Using Fireworks to create digital animation
Multimedia 2: Sound	8	• Use and impact of sound effects & music • Sound libraries and Foley • Editing sound effects using Audacity
Multimedia 3: Video	8	• Film making techniques and tactics • Planning video • Editing video using MovieMaker
Multimedia Project	10	• Systems lifecycle • Collaborative working
Spreadsheets 2: Advanced Functions and Features	10	• Basic spreadsheet functionality • Advanced features • Editing sound effects using Audacity
Programming 2: Web programming	20	• The request-response cycle • HTML • CSS • PHP