Computing Curriculum: KS3

Intent

Our aim in computing is to inspire and enable students to positively contribute to and thrive as active participants in the digital world; digitally literate and digitally resilient enough to function in society and at a level suitable for the workplaces of the future. Our curriculum is inclusive and ambitious and is coherently sequenced in order that all learners build relevant knowledge and understanding.

Students will be equipped as purposeful, competent, creative users of technology who, using their deep knowledge and understanding of computing, can create appropriate digital artefacts, problem solve confidently and program skilfully

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	**7.1 Using Computers: responsibly and safely** • Acceptable Use • Accounts intro Office 365 etc. • Password safety • Using Email • Your online identity & social media • How to search online •	**7.2 Introduction to Coding: Kodu** • How programs work • Sequence • Creating landscapes • Navigation • Selection • Game development	**7 Multimedia/ Appshed**	**Computational Thinking and Flowol** • Decomposition • Abstraction • Pattern recognition • Algorithms • Flowcharts (Including Flowol) • Searching and Sorting	**Programming: Python Intro** • Strings and variables • Data types • Numbers and arithmetic • Selection – If, Else, ELIF • Writing algorithms - pseudocode • Test and debug programs	**Gaming: Gamemaker** • Game Analysis • Sprites and Objects • Enemies and Collison Detection • Firing Projectiles • Capturing the Flag • Testing

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 8	**8.1 Understanding Computers** • The CPU • Input, process, output • Hardware and software • Understanding binary • Binary addition • Storage devices • Convergence and new technologies • Online Safety refresher	**8.2 Graphics** • Vector graphics • Bitmap graphics • Resolution • How images are stored • Use a graphics package to create and edit digital objects.	**8.4 Spreadsheet Modelling** • computer model use in the real world • Formatting • Use basic formulae and functions • Decision-making functions and tools e.g. what if and goal seek • Create basic charts and graphs to display results	**8.5 Programming: Python Next Steps** • Strings and variables • Use of Data types • Selection- IF,ELSE,ELIF in programs • While loops • For loops • More advanced programs • Concatenation • Operands • Conditional loops	8 Bigger Picture • Ethical and Cultural issues • Ethical Impact of technology use • Legal Implications	**8.3 Sound** • How sound is digitised and stored • Characteristics of digital sound • Editing digital sound • Combining sound to create a digital product • Optimising and compression • Audience and purpose
	Term 1	**Term 2**	**Term 3**	**Term 4**	**Term 5**	**Term 6**
Year 9	**9.1 Cyber security and Online safety refresher** • Email scams • Computer Misuse • Protecting Personal Data • Copyright • Health and Safety • Environmental Issues	**9.2 Programming with Python** • Arrays and Lists • Functions • Modular Programming • Calling Procedures • Parameters in a procedure	**9.3 Programming in Python and Computational thinking** • Decomposition • Pattern Recognition • Abstraction • Algorithms • Flow charts • Pseudocode • Further sorting and searching	**9.4 Understanding Computers: Advanced** • CPU Components • FDE Cycle • Clock speed • Embedded systems • Memory • Operating Systems	**9.5 Artificial Intelligence** • What is AI? • Machine learning • Ethics of AI • Image recognition • Turing tests and chatbots (GPT etc.) • Legal Implications of AI	**9.6 Networks** • The Internet (IP addressing, MAC addresses, hardware and protocols) • Network topologies (advantages, disadvantages) • Client server and Peer to peer networks • Network security


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