



Computing Phase One (KS3) Curriculum

Overview:

The computing curriculum serves to develop the mindset of a computer scientist through equipping students with the skills, knowledge and understanding to participate in a rapidly changing world. The curriculum is underpinned by four key pillars; computer science, information technology, digital literacy and digital citizenship, preparing students to solve the problems of tomorrow through key computational concepts and experiences. In computing we aspire to enrich students with a varied and rich understanding of computing contexts, developments, approaches, and the impact of technology in our society and the environment. Students develop a strong understanding of both declarative knowledge through variation and unplugged activities, as well as procedural knowledge to ensure that they have a wide skillset which develops their ability to be able to think like a computer scientist.

The curriculum has been designed to ensure learners have sufficient knowledge to stay safe online and how to use computers safely as effective digital citizens, co-constructed with PSHE. The relevant, coherent and well-sequenced approach to online safety is underpinned by our four Christian values of empathy, honesty, respect and responsibility, teaching students how to interact effectively in a digital landscape. The curriculum provides learners with opportunities to develop their understanding of British Values, for example understanding the rule of law and being able to demonstrate mutual tolerance and respect when accessing and engaging with digital spaces, particularly when using social media. The computing curriculum prepares students for the future workplace and as active participants in a digital world, which feeds into and benefits from key learning within other subject disciplines including maths, geography and art.

Our curriculum offer exposes students to the wealth of career opportunities available in the computing sector with a half termly learning focus on a role linked to the unit of work. A wealth of enrichment learning opportunities is open to all students, to enrich educational experiences, engage learners and cultivate and extend lifelong effect of learning, for example 'coding club' which is designed to engage our programmers of the future and year 8 girls are given the opportunity to enter the 'CyberFirst' competition, competing against schools from all over the UK. In years 7, 8 and 9, students also develop their digital, enterprise and employability skills through the 'Inspiring Digital Enterprise Award'.

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	<i>Collaborating Respectfully Online (Digital Literacy)</i>	<i>Networks, Hardware & Software (Information Technology & Digital Literacy)</i>	<i>Computational Thinking (Computer Science)</i>		<i>Design Principles Introduction (Digital Literacy)</i>	<i>Spreadsheets Introduction (Information Technology)</i>
	1.1: Logging onto the system 1.2: Microsoft Teams 1.3: Setting Up, Saving & Organising Documents (Cloud) 1.4: Email Etiquette 1.5: Online Introduction Online Safety: Introduction Careers: IT Support Technician	2.1: Hardware History (Type Test) 2.2: Modern Hardware (Keyboard Shortcuts) 2.3: Inputs & Outputs (Features of Word) 2.4: Software (Features of PowerPoint) 2.5: Networks (Search Tools) 2.6: Network Connections (Speed test) Online Safety: Malware Careers: Software Developer	3.1: Computational Thinking 3.2: Algorithms 3.3: Sequence 3.4: Iteration 3.5: Nested Iteration 4.1: Selection 4.2: Python Print Statements 4.3: Python Variables Online Safety: Inappropriate Content Online Safety: Blocking & Reporting Concerns Careers: Robotics Engineer		5.1: Artificial Intelligence 5.2: Categorising Target Audiences 5.3: Pixels & Resolution 5.4: Colour & Digital Artefacts 5.5: Typography Online Safety: Cyberbullying Careers: Social Media Manager	6.1: Spreadsheet Introduction 6.2: Formatting 6.3: Basic Formulae (SUM/MAX/MIN/AVERAGE) 6.4: Simple Functions 6.5: Filters & Complex Functions Online Safety: Digital Footprint Careers: Data Entry Clerk
Year 8	<i>Computing Systems (Information Technology)</i>	<i>Spreadsheets: Complex Functions (Digital Literacy)</i>	<i>Fractal Art in Python (Computer Science)</i>	<i>Python Programming (Computer Science)</i>	<i>Binary (Information Technology)</i>	<i>Design Principles: Vector Graphics (Digital Literacy)</i>
	1.1: Computer Systems 1.2: Hardware, Input & Output Devices 1.3: Software 1.4: Storage 1.5: Central Processing Unit <i>Features of PowerPoint Throughout</i> Online Safety: Social Media Privacy Settings Careers: Network Manager	2.1: Formulas 2.2: Functions 2.3: Data vs Information 2.4: Complex & Binary Functions (COUNTIF) 2.5: Conditional Formatting Online Safety: Inappropriate Content Careers: Geospatial Technician	3.1: Python Recap 3.2: Fractal Art - Sequence 3.3: Fractal Art - Iteration 3.4: Fractal Art – Nested Iteration 3.5: Fractal Art – Formatting Online Safety: Reporting Concerns Careers: Computer Games Developer	4.1: Algorithms & Flow Charts 4.2: Syntax vs Logic Errors & Print Statements 4.3: Variables 4.4: Inputs 4.5: Selection Online Safety: Cyberbullying Careers: App Developer	5.1: The Binary System: Data and Representation 5.2: Binary Conversion 5.3: Binary De-Conversion 5.4: Binary Addition Online Safety: Protecting Online Identity Careers: App Developer	6.1: Technology & the Environment 6.2: Analysing Target Audiences 6.3: Vector vs Bitmap 6.4: Composition 6.5: Contrast 6.6: Creating Vector Graphics Online Safety: The Digital Footprint Careers: Graphic Designer
Year 9	<i>Spreadsheets In Business (Information Technology)</i>	<i>Design Principles (Digital Literacy)</i>	<i>Python Programming (Computer Science)</i>	<i>HTML Web Design (Computer Science)</i>	<i>Networks (Information Technology)</i>	<i>Advanced Binary (Information Technology)</i>
	1.1: Formulas and business terminology 1.2: Conditional Formatting 1.3: Functions in Business 1.4: Complex Functions 1.5: Graphs & Charts Online Safety: Online Gaming Careers: Network Engineer	2.1: Wearable Technology 2.2: Compression 2.3: File Types 2.4: House Style 2.5: Creating Media Campaigns Online Safety: Data Protection Careers: Video Editor	3.1: Algorithms & Flow Charts 3.2: Data Types 3.3: Variables and Inputs 3.4: Sequence & Selection 3.5: Iteration – FOR & While L-loops Online Safety: Cyberbullying Careers: Web Designer	4.1: HTML Pre-Sets & Text Hierarchy 4.2: HTML Tables (basic) 4.3: HTML Table Formatting 4.4: HTML Background Colours 4.5: HTML Images & Videos Online Safety: Physical Security & Biometrics Careers: Web Designer	5.1: Network Types (LAN & WAN) 5.2: Network Connections (Wired & Wireless) 5.3: Network Topologies 5.4: Network & Computer Threats 5.5: Identify and Preventing Vulnerabilities Online Safety: Cybersecurity Careers: Database Administrator	6.1: Logic Gates 6.2: Binary Conversion 6.3: Binary De-Conversion 6.4: Binary Addition 6.5: Binary Shifts: Multiplication & Division Online Safety: Impact of Filters & Editing Tools Careers: Forensic Computer Analysis

For any questions relating to the Phase One Computing Curriculum, please email Mr C Clark, Curriculum Leader of Computing, Media & Business:

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