



Curriculum Intent

Subject: **Computing**

Year: **8**

	What?	Why?	National Curriculum Links
Term 1-1	<p>Data Representation</p> <p>Pupils will study how computers represent and process data using binary. They will learn the difference between denary (base 10), binary (base 2), and hexadecimal (base 16), and practise converting between them. Pupils will explore how text is represented through character sets such as ASCII and Unicode, how images are stored using pixels, resolution and colour depth, and how sound is captured digitally using sample rate and bit depth. They will also investigate the trade-offs between quality and file size when representing different types of data.</p>	<p>This unit builds on <i>Networks</i> from Year 7, where pupils learned how data is transmitted, by focusing on how data is represented once received by a computer. It prepares pupils for later GCSE topics in J277 Paper 1 (SLR 1.2 – Memory and Storage, and SLR 1.2.4 – Data Representation). It also supports practical work in <i>Vector Graphics</i> and <i>App Development</i>, where pupils must understand the properties of digital assets.</p>	<p>NC KS3: 5 – understand how numbers can be represented in binary and be able to carry out simple operations on binary numbers; 4 – understand simple Boolean logic and its uses; 7 – undertake creative projects that involve selecting and using software.</p>
Term 1-2	<p>Vector graphics</p> <p>Pupils will learn how vector graphics differ from bitmap images, focusing on the use of mathematical shapes, lines, and paths to create scalable graphics. They will be introduced to design tools such as shapes, layers, text, and grouping, and they will practise designing logos and icons. Pupils will explore how file formats affect quality and size, and will apply design principles to create graphics aimed at a particular audience.</p>	<p>This unit develops pupils’ creative and technical design skills, reinforcing digital literacy and preparing them for KS4 Creative iMedia, particularly Unit R094 (Digital Graphics). It builds on the design and layout work from Year 7 <i>Using Online Tools</i> and prepares for <i>App Development</i> later in the year, where pupils will apply graphics in user interfaces.</p>	<p>NC KS3: 7 – undertake creative projects that involve selecting, using, and combining multiple applications; 8 – use technology safely, respectfully, and responsibly.</p>
Term 2-1	<p>Improving the Internet</p> <p>Pupils will explore how the internet works and ways it continues to develop. They will learn about the role of DNS, hosting, web servers, and clients. They will consider how cloud services store data and the importance of encryption in keeping communications secure. Pupils will also research how new technologies, such as fibre optics and mobile connectivity, are making the internet faster and more accessible worldwide.</p>	<p>This unit extends the <i>Networks</i> knowledge from Year 7 by looking at how the internet builds on networking concepts. It prepares pupils for GCSE Computer Science (SLR 1.3 – Networks and Protocols, SLR 1.4 – Network Security) and links forward to <i>Cyber Security</i> in Year 9. It also develops critical awareness of the importance of digital infrastructure in society, a theme revisited in <i>Ready Player One</i> (ethics).</p>	<p>NC KS3: 6 – understand simple Boolean logic and some of its uses; understand how instructions are stored and executed within a computer system; 7 – undertake creative projects that involve data and internet technologies; 8 – understand how to use technology safely and responsibly.</p>
Term 2-2	<p>Ready Player One (Ethics)</p> <p>Pupils will explore the ethical, legal, and environmental issues surrounding digital technology. They will study real-world issues such as cyber bullying, online addiction, digital privacy, and the</p>	<p>This unit develops critical thinking about the consequences of digital technology and prepares pupils for GCSE Computer Science Paper 1 (SLR 1.6 – Ethical, Legal, Cultural and Environmental Issues). It</p>	<p>NC KS3: 7 – undertake creative projects while considering wider impact; 8 – understand how to use</p>



	environmental cost of technology. They will also learn about relevant legislation, including the Data Protection Act 2018, the Computer Misuse Act 1990, and Copyright law. Pupils will discuss case studies and reflect on the positive and negative impacts of technology on society.	builds on the online safety work from <i>Using Online Tools</i> (Year 7) and extends it to a societal level. It also links to <i>Improving the Internet</i> by considering how advances in connectivity impact individuals and communities.	technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour.
Term 3-1	<p>Introduction to Python</p> <p>Pupils will be introduced to text-based programming in Python. They will learn how to use inputs and outputs, create variables, and write programs that use sequence and selection (IF statements). Pupils will compare text-based programming with block-based Scratch from Year 7, recognising the similarities and differences. They will also practise debugging to identify and fix errors in their code.</p>	This unit builds directly on <i>Programming Fundamentals in Scratch 1 & 2</i> (Year 7), transitioning pupils into text-based programming. It prepares pupils for <i>Python PRIMM</i> (Year 8 Term 3-2), where they will deepen their programming knowledge, and for GCSE Computer Science Paper 2 (Algorithms and Programming). It also supports computational thinking skills essential for success in multiple subjects.	NC KS3: 1 – design, use, and evaluate computational abstractions; 3 – use two or more programming languages, at least one of which is text-based; 8 – use logical reasoning to detect and correct errors.
Term 3-2	<p>Python PRIMM</p> <p>Pupils will learn Python using the PRIMM pedagogy: Predict, Run, Investigate, Modify, Make. They will deepen their understanding of sequence, selection, and iteration, and begin to use lists and basic string manipulation. Pupils will apply these concepts by modifying and creating their own programs. They will also strengthen their debugging and testing strategies, developing independence as programmers.</p>	This unit consolidates programming skills and prepares pupils for more advanced programming in Year 9, including GCSE Computer Science Paper 2 (Programming Fundamentals). It builds on <i>Introduction to Python Programming</i> and strengthens pupils' problem-solving and computational thinking. By the end of Year 8, pupils will have experienced both block-based and text-based programming, ensuring readiness for KS4.	NC KS3: 1 – design, use, and evaluate computational abstractions; 2 – understand key algorithms and how they can be expressed in code; 3 – use two or more programming languages, at least one of which is text-based; 8 – use logical reasoning to detect and correct errors.