

	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Key focus	E-safety Legal, ethical, and environmental considerations in computing		Binary Data representation		Programming Higher level Programming (plus project)	
Key knowledge and skills	<ul style="list-style-type: none"> Understanding the key concerns when using the internet and digital communications. Understanding what signs to look out for and how to act in situations. Understand how to validate and verify information obtained from online sources. Understand the impact/consequences of their online actions. Understand the environmental responsibilities we all have as IT users and impact it can have on the rest of society Understand how technology has impacted the environment in positive and negative ways Understand the different laws students need to be aware of when using technology. 		<ul style="list-style-type: none"> Understand how to carry out mathematical processes to convert binary into denary, denary into binary and hexadecimal into denary. Understand the process of adding binary numbers. Understand how to perform binary multiplication and division using binary shifts Understand how to represent a negative binary number using Two's complement Understand what binary is and why it is used in computer systems Understand the different data sizes and and the formulas used to convert text files, images and sound files into KB, MB, GB etc. Understand the different forms of secondary storage and their characteristics. Be able to calculate how many files of specific sizes can be stored on specific secondary storage 		Be able to apply all 3 programming constructs Be able to identify and correct syntax and logic errors. Be able to produce textual programming using indents, the 'random' library, arrays (1D and 2D arrays) Be able to understand the importance of the IDE and its benefits Be able to make efficient code using functions and procedures, using arguments to links variables into a function / procedure. Be able to implement global and local variables	
Key words/ vocabulary	Grooming / Cyberbullying / Radicalisation/ Digital footprint / sexting / Computer misuse act 1990 / Green IT / Digital divide / ethical / renewable / natural resources / recycle / Computer misuse act / data protection act / copyright, designs and patents act		Binary / denary / hexadecimal / overflow / right shift / left shift / Two's complement / Hard disk drive / solid state drive / CD, DVD, Blu-ray ROM / Flash storage / pixels / colour depth / resolution / sample rate / bit rate / Bit / nibble / byte / KB / MB / GB / TB / PB		Functions / Procedures / Libraries / parameters / arguments /	
Assessment method	Question and answering in lessons / End of topic assessments / observations in lesson					
Wider links	Legal / Ethical and environmental impacts / e-safety		Develop and apply mathematical logic		Develop and apply mathematical logic and develop programming skills	
Enrichment opportunities			Code breakers		Programming club	
Careers links	Supporting responsible internet use and reducing negative digital footprints		Software development, computer engineer		Software developer, games designer, computer analyst	