	Year:	8	Subject:	ICT	Spring 2		Summer 1		Summer 2	
Intent	**Subject Concepts (Substantive knowledge)** 		**Concept areas** 1) E-safety (Social Engineering) 2) Presentation 3) Spreadsheets 4) Computer System 5) Binary Conversion & Addition 6) Intro to Programming (Python) 7) Web Development		**Unit 4**: Computer System • Hardware • Software classification • External Components: - Input Devices - Output Devices - Storage Devices	Prior Knowledge: • Computer Literacy • Everyday Digital Devices Takeaway Learning: • Define Hardware • Main Components of PC • Know Different Components • Functions of Hardware • Meaning of Software • Classification of Software • Different Types of Software • Purpose of Software Types	**Unit 6**: Intro to Python • Intro - Computational Thinking • Decomposition • Pattern Recognition • Abstraction • Algorithm - Flowcharts • Variable • Sequence • Selection • Iteration • Commenting • Project Testing /Evaluation	Prior Knowledge: • Computer Literacy • Logical Reasoning • Scratch Code Takeaway Learning: • How to Solve Complex Problems with Flowchart • Familiar with Flowchart Basic Symbols • How to Plan before Coding • Purpose of Flowcharting • Plan Step-by-Step Instruction with Flowchart • Understand the concept of variables in programming. • Compare How Humans & computers Understand Instructions • Define & Modify Selection • Define & Modify Sequence • Define & Modify Iteration • Understand Purpose of Commenting Code	**Unit 7**: Dangers of the Internet • Bias & Reliability in research • Identity theft • Data breaches • Malware and viruses • Phishing and scam emails • Fake websites • Online scams • Inappropriate content	Prior Knowledge: • Browsing the internet • Social Engineering • Malware • Takeaway Learning: • Research Techniques • Awareness of Internet safety issues • How to prevent dangers of internet • Respect & consent • Legal & ethical considerations
					Unit 5: Binary Numbers • Binary Conversions • Binary Addition	Prior Knowledge: • Basic Maths (Powers of 2) Takeaway Learning: • How Computer Represents Data • Data Capacities • Binary Conversion: - Binary to Denary - Denary to Binary			**Unit 8**: Web Development (Planning Website Design Coding in HTML) • What does HTML mean? • Basic HTML tags • Create a simple microsite with HTML tags	Prior Knowledge: • Browsing of website • Text Formatting Takeaway Learning: • Meaning of HTML • Purpose of HTML • Web design skills • Create a microsite with HTML. • Embed Hyperlinks
	Disciplinary Knowledge				**Unit 4**: Computer System • *To be able to define Hardware & Software* • *To be able identify the different categories of Hardware components inside a PC & Peripherals.* • *To know the purpose/function of the different Hardware components and devices* • *To know the classification of software* • *To know the purpose of the different types of software and its*		**Unit 6**: Intro to Python • *How algorithms are used in everyday life to solve problems systematically* • *To write flowcharts to plan and outline algorithms.* • *The importance of computational thinking (decomposition, pattern recognition, abstraction, and algorithm design)* • *Importance of step-by-step instructions in solving problems (Sequencing)* • *The concept of variables and data types.* • *Iteration (For & While Loops) and when to use them.* • *Explore conditional statements (if-else) for decision making.* • *Functions: Explain The idea of functions or procedures (In-built functions first – print, input, etc.)* • *How to identify and fix errors in algorithms and code (Debugging)* • *Commenting code & its benefits* • *Collaborative Projects to encourage teamwork and foster problem-solving skills.*	**Unit 7**: Dangers of the Internet • *What is bias & reliability in research?* • *To understand the meaning of the following disciplinary literacy: Phishing, Malware, etc.* • *To Know some of the causes of the dangers of the internet* • *To know how to prevent the dangers of the internet*	
					Unit 5: Binary Number System • *How computers work or interpret inputted data using Binary and Why?* • *Data Capacities (bit, byte, nibble, kilobyte, etc.)* • *Binary conversion to Denary and vice-versa* • *Binary Addition*				**Unit 8**: Web Development • *How to design and build a web page* • *To understand the meaning of HTML* • *To be able to effectively design & create a microsite using both basic HTML.*	
Implementa	**Common Misconceptions**				**Unit 4**: Computer System • *That a faster computer is the only determinant for better performance.* • *Computers can understand and interpret language just like humans.* • *More RAM means more storage for files and documents.*		**Unit 6**: Intro to Python • *Algorithms are something used entirely in computer programming or mathematics.* • *Algorithms are complex and difficult to understand.* • *There's only one correct way to solve a problem algorithmically.*		**Unit 7**: Dangers of the Internet • *Strangers online are harmless; I can trust them.* • *Downloading anything from the internet is safe.* • *Cyberbullying is just harmless teasing.* • *My online actions have no real-world consequences.*	

			• *Computer viruses can physically damage computer hardware.* • *Software and hardware are interchangeable terms.* • *Computers are always right and infallible.* • *All computer programs are written in the same language and work the same way.*	• *Algorithms are rigid and don't require creativity or innovative thinking.* • *Once an algorithm is designed, it doesn't need testing or debugging.* • *If you follow an algorithm, it will always yield a solution.* • *Python is a beginner's language and is not suitable for more advanced programming tasks.* • *Python doesn't care about code structure or proper indentation.* • *Python is limited to simple tasks and cannot handle complex projects.*	
			Unit 5: Binary Number System • *Binary numbers and binary representation of characters are interchangeable.* • *Leading zeros in binary have no effect on the decimal value.* • *All computers and devices use the same character encoding system.* • *Converting binary to decimal is complicated*		• **Unit 8**: Web Development • *Learning to code is too difficult for Students.* • *You can create a perfect website on the first try.* • *Web design is just about aesthetics.* • *HTML and CSS are the only skills needed.* • *There is only one right way to code.*
	Enabling or Adapting the Curriculum	**SEND Students**	**Unit 4**: Computer System • *Use provision maps provided.* • *Collaborate with support staff.* • *Encourage self-advocacy.*	**Unit 6**: Intro to Python • *Use provision maps provided.* • *Collaborate with support staff.* • *Encourage self-advocacy.*	***Unit 7:*** Dangers of the internet • *Use provision maps provided.* • *Collaborate with support staff.* • *Encourage self-advocacy.*
			Unit 5: Binary Number system • *Use provision maps provided.* • *Collaborate with support staff.* • *Encourage self-advocacy.*		**Unit 8**: Web Development • *Use provision maps provided.* • *Collaborate with support staff.* • *Encourage self-advocacy.*
		Disadvantaged Students	**Units 4 & 5:** • *Provide access to resources in multiple formats.* • *Scaffolding, Writing Frames, etc.* • *Peer support or Tailored content* • *Provide opportunities for Digital Literacy*	**Units 6:** • *Provide access to resources in multiple formats.* • *Scaffolding, Writing Frames, etc.* • *Peer support or Tailored content* • *Provide opportunities for Digital Literacy*	**Units 7 & 8:** • *Provide access to resources in multiple formats.* • *Scaffolding, Writing Frames, etc.* • *Peer support or Tailored content* • *Provide opportunities for Digital Literacy*
		More Able Students	**Units 4 & 5:** • *Opportunities to explore advance content and concepts for stretch & challenge.* • *Regular Feedback and Goal Setting* • *Peer Collaboration* • *Online Learning Resources for independent study* • *Flexible Assessment Methods*	**Units 6:** • *Opportunities to explore advance content and concepts for stretch & challenge.* • *Regular Feedback and Goal Setting* • *Peer Collaboration* • *Online Learning Resources for independent study* • *Flexible Assessment Methods*	**Units 7 & 8:** • *Opportunities to explore advance content and concepts for stretch & challenge.* • *Regular Feedback and Goal Setting* • *Peer Collaboration* • *Online Learning Resources for independent study* • *Flexible Assessment Methods*
	Literacy/Numeracy Skills 	**LITERACY** **Reading:**	• *New vocabulary linked to new concepts.* • *Computer Science or ICT reading material once every half term for 20 mins.*	• *New vocabulary linked to new concepts.* • *Computer Science or ICT reading material once every half term for 20 mins.*	• *New vocabulary linked to new concepts.* • *Computer Science or ICT reading material once every half term for 20 mins.*
		Writing:	• *Writing reasoning with correct punctuation & use of disciplinary keywords*	• *Writing reasoning with correct punctuation & use of disciplinary keywords*	• *Writing reasoning with correct punctuation & use of disciplinary keywords*
		Oracy:	• *Incidental language based on ability groups.* • *Pronunciation of keywords*	• *Incidental language based on ability groups.* • *Pronunciation of keywords*	• *Incidental language based on ability groups.* • *Pronunciation of keywords*
		NUMERACY	• *Numerical data related to speed and capacity of components*	• *Use of flowchart to visualise the direction of code.* • *Working with numeric data types and performing basic Mathematical calculation*	• *Numerical data related to dimensions and other. features of user interface*
	Digital Strategy 		**Unit 4 & 5:** Computer System • *Access to workstations, Internet, and iPads* • *Access to platforms such as Ms Teams, OneDrive, etc.* • *Adaptive Technology when necessary*	**Unit 6:** • *Access to workstations, Internet, and iPads* • *Access to platforms such as Ms Teams, OneDrive, etc.* • *Adaptive Technology when necessary*	**Unit 7 & 8:** • *Access to workstations, Internet, and iPads* • *Access to platforms such as Ms Teams, OneDrive, etc.* • *Adaptive Technology when necessary*
	Home Learning		**Unit 4 & 5:** • *To follow the Home Learning calendar*	**Unit 6:** Intro to Python • *To follow the Home Learning calendar*	**Unit 7 & 8:** • *To follow the Home Learning calendar*

Impact	**Composite Assessment** Interleaving assessments throughout the year. End of unit PLC assessment after each Unit. End of term test Autumn 2 and Spring 2. End of year test Summer 2.	Date:	TBC	Content: TBC	End of Spring 2 Composite Assessment comprising content from Autumn 1 till date. Use Baseline assessment Data, PLCs, to monitor progress and close identified gaps	Date:	TBC	Content: TBC	End of Summer 1 Composite Assessment comprising content from Autumn 1 till date. Use Baseline assessment Data, PLCs, to monitor progress and close identified gaps	Date:	TBC	Content: TBC	End of academic year Composite Assessment. Use Baseline assessment Data, PLCs, to monitor progress and close identified gaps