Programme of study for Year 8 Computer Science 2023-2024

Autumn (1st term) Topic	Autumn (2nd term) Topic	Spring (1st term) Topic	Spring (2nd Term) Topic	Summer (1st term) Topic	Summer (2nd term) Topic
HTML and Web development (6)		**Data Representation (3)**	**Computer Systems(0.5)**	**Data Protection and Hacking(2)**	**Encryption(1)**
Introduction to HTML, CSS and web design. **Laws :** Copyright.	Plan, design and create a simple webpage, format text and images, and understand the principles of web design. **Laws:** Copyright.	Introduction to binary to denary conversion Characters encoding: Text as ASCII Images: As binary	Using a self contained computer system to respond to sensors which collect data. **Programming:(2.5)** Microbit sensors and communication	Cybersecurity awareness, ethical hacking, and privacy. **Programming(1)** Python refresher **Laws:** Data protection Act. (How to keep data secure) Computer Misuse act	Introduction to encryption and data security. Keeping data safe using encryption **Programming:(2)** Historical encryption using the Caesar Cipher.
Skills: HTML, CSS and formatting.	**Skills:** Design principles, troubleshooting and debugging.	**Skills:** Binary to denary conversion Denary to binary conversion Recognise ASCII character codes. Image formats.	**Skills:** Logical thinking. Programming constructs, debugging and problem solving in coding.	**Skills:** Online safety and privacy awareness	**Skills:** Encryption principles, encoding/decoding using Caesar Cipher
Key Learning Outcomes: Create a basic webpage using HTML and CSS. Format text, images, and links on a webpage.	**Key Learning Outcomes:** Apply design principles to make the webpages visually appealing. Understand the structure of a webpage and the role of HTML and CSS in web development.	**Key Learning Outcomes:** Convert binary to denary and vice versa. Decode and encode simple text using ASCII. Identify common image formats	**Key Learning Outcomes:** Understand Microbit components. Create simple programs using Microbit. Design and implement a Microbit project.	**Key Learning Outcomes:** Understand the importance of data protection. Learn about ethical hacking and its ethical aspects.	**Key Learning Outcomes:** Understand the importance of encryption and data security. Encrypt and decrypt messages Apply Caesar Cipher to encode and decode text
Term 1 Evidence to cover: Programming Skills with HTML/CSS		**Term 2 Evidence to cover:** Understanding of data representation and Micro bit coding		**Term 3 Evidence to cover:** Understanding of need for encryption and have knowledge of Caesar cipher security	
Rationale for sequence: Combining digital images and text to create digital content responsibly and lawfully.		**Rationale for sequence:** Introducing how data is stored on a computer. .	**Rationale for sequence:** Showing how systems are controlled and managed by the operating system	**Rationale for sequence:** Looking at the issues related to companies storing personal data and	**Rationale for sequence:** Putting together programming skills learnt

		and using the Microbit as a complete computer system to collect and respond to data inputs. Apply skills to real-world projects.	who might try and access that data. Establish awareness	over KS3 to encrypt data to keep it secure.
Home – Learning: W3SchoolsHTML – Online tutorials.	**Home – Learning:** Practice binary and denary conversion. https://games.penjee.com/binary-numbers-game/	**Home – Learning:** Explore introductory Microbit projects. https://microbit.org/get-started/home-learning/	**Home – Learning:** Research online safety tips.	**Home – Learning:** Encryption/Caesar Cipher exercises.
Reading / High Quality Text: Coding guides and tutorials for HTML. **https://www.w3schools.com/html/**	**Reading / High Quality Text:** **https://www.bbc.co.uk/bitesize/guides/z26rcdm/revision/1**	**Reading / High Quality Text:** Coding guides and tutorials for Microbit. **https://microbit.org/**	**Reading / High Quality Text:** Articles on ethical hacking and responsible disclosure. https://www.bbc.co.uk/bitesize/guides/zbgg4qt/revision/8	**Reading / High Quality Text:** History and literature on Caesar Cipher. **https://kids.kiddle.co/Caesar_cipher**
Numeracy: Pixel measurements, image dimensions, and layout proportions.	**Numeracy:** Storage Units, Decimal, Binary, Base 10 and Base 2.	**Numeracy:** Data representation - LED patterns.	**Numeracy**: Statistics in cybersecurity incidents.	**Numeracy:** Pattern recognition and analysis.
Enrichment / opportunities to develop cultural capital (including careers, WRL and SMSC): Participate in coding challenges online. Make aware of tech conferences and exhibitions.				