	INVEST in the power of the written word	EXPERIENCE a range of cultures, histories and beliefs	EXPLORE the shared values of civilisation	SHAPE society and our place within it	GROW as instinctive readers, writers and orators	PURSUE English beyond the classroom
Curriculum Sequencing Grid 2025-2026						
Subject	Computer Studies			**Year**	8	
	Term 1		**Term 2**		**Term 3**	
	HT1	**HT2**	**HT3**	**HT4**	**HT5**	**HT6**
Component	1. IT Around Us 2. iDEA	3. Bebras UK 4. Databases	5. Graphics	6. Building a Business	7. HTML	8. Makecode Arcade 2. iDEA
Developing Cultural Capital	By equipping them with essential knowledge of cybersecurity and networking, crucial in an increasingly digital society. By exploring topics like encryption, cyberattacks, and social engineering, students gain awareness of the potential threats in the digital world and learn how to safeguard their personal and professional information. Understanding network structures and devices, such as LANs, WANs, and firewalls, connects pupils to the foundational systems that power modern communication and commerce. Additionally, by learning about historical encryption techniques like the Caesar Cipher and Pigpen Cipher, pupils develop an appreciation for the evolution of secure communication. These lessons also provide a gateway to careers in cybersecurity and IT, fostering an understanding of the vital role technology plays in maintaining global security and connectivity. Through this knowledge, students are better prepared to navigate and contribute to a technology-driven world.	By introducing them to database management, an essential skill in virtually all industries that rely on data. Learning about relational databases and tools like Microsoft Access helps students understand how organizations manage vast amounts of information, from customer records to inventory systems. By practicing query creation and data validation, pupils develop logical thinking and problem-solving skills that are directly transferable to real-world applications. The inclusion of entity relationship diagrams (ERD) introduces students to a professional-level planning tool, giving them a taste of how databases are designed and structured in the workplace. Additionally, exploring practical file formats like CSV connects classroom learning to everyday technologies used for sharing and analysing data. These lessons provide a foundation for careers in IT, business analytics, and data science, equipping pupils with skills that are increasingly in demand in the digital economy.	By teaching them essential skills in digital image creation and manipulation, widely applicable in fields such as graphic design, marketing, and digital media. By understanding the differences between bitmap and vector images and the impact of compression on quality, students gain insight into how professional designers balance aesthetic quality with technical constraints. The use of tools like Pixlr X allows students to experience industry-standard practices for editing and enhancing images, fostering creativity and problem-solving. Additionally, by working with layers, retouch tools, and cutout tools, pupils develop skills that connect to careers in media production, advertising, and art. These lessons empower students to navigate and contribute to the increasingly visual nature of digital communication.	By introducing them to foundational business concepts such as branding, market research, and risk analysis, providing a taster of KS4 Business Studies. By learning how to identify a target audience, create a USP, and design marketing materials like logos and slogans, students gain insight into the strategies used by successful businesses. Exploring the balance between business risks and rewards fosters critical thinking and decision-making skills, which are valuable in both personal and professional contexts. Additionally, the lessons emphasize the importance of effective communication, teaching students how to use infographics and market research to present data and ideas clearly. This not only prepares pupils for careers in business and marketing but also gives them a deeper understanding of the consumer-driven world they live in. These experiences help students connect classroom learning to real-world applications, equipping them with the tools to succeed in a variety of industries.	By equipping them with foundational skills in web development, a critical competency in the modern digital age. Understanding how to structure and style webpages using HTML and CSS introduces students to the building blocks of the internet, preparing them for potential careers in web design and development. By learning to use tags, attributes, and text editors, pupils develop technical precision and problem-solving skills applicable across a variety of fields. The lessons also highlight the importance of accessibility and usability in website design, fostering an awareness of how technology can be made inclusive for all users. Through practical tasks such as creating navigation menus and embedding multimedia, students gain hands-on experience in creating content that connects to real-world applications. These activities not only spark creativity but also provide a deeper understanding of the technology shaping everyday digital interactions, empowering pupils to become active contributors to the digital landscape.	By introducing them to the foundational concepts of game design and development, an industry that blends creativity with technical skill. By exploring tools like MakeCode Arcade and Kitronik Arcade, students gain practical experience in programming and problem-solving while understanding the collaborative nature of game creation. Developing features such as score systems, countdown timers, and immersive environments teaches pupils how games are structured to engage players. These lessons also foster an appreciation for the interdisciplinary nature of gaming, which combines art, music, storytelling, and coding. As gaming is a significant cultural and economic force globally, these lessons connect students to an industry with vast career opportunities, encouraging them to see themselves as creators in the digital entertainment landscape.
Substantive Knowledge/ Disciplinary Knowledge	**Substantive Knowledge:** > Understanding the principles of cryptography, including encryption and decryption techniques like Caesar Cipher and Pigpen Cipher > Identifying different types of cyberattacks, such as brute force attacks, Distributed Denial of Service (DDoS) attacks, phishing, pharming, and social engineering > Definitions and characteristics of malware, including Trojan Horses and their impact on computer systems > Exploring networking concepts, including LAN (Local Area Network) and WAN (Wide Area Network), and their applications > The purpose and function of networking devices, such as routers and firewalls, in securing and managing data transmission > The role of Wi-Fi as a wireless networking technology and its use in connecting devices > Understanding data interception as a network vulnerability and its implications **Disciplinary Knowledge:** > Applying encryption techniques like the Caesar Cipher to secure data and practicing decryption methods to understand their effectiveness > Evaluating the impacts and risks of cyberattacks on individuals and organizations and understanding preventive measures > Analysing network structures to determine the differences and uses of LANs and WANs in different scenarios > Setting up and securing network connections using devices such as routers and firewalls to ensure data protection > Identifying social engineering techniques and their psychological basis to develop strategies to recognize and counteract them > Investigating real-world case studies of phishing and pharming attacks to	**Substantive Knowledge:** > Understanding what a database is and how it stores, organizes, and manages data electronically > Definitions and purposes of key database components: fields, records, primary keys, and foreign keys > The structure and role of relational databases, which organize data into linked tables > The concept of queries for extracting specific data and how parameter queries prompt users for criteria > Features and uses of entity relationship diagrams (ERD) to model database structures and relationships > The importance of data validation and applying validation rules to ensure data integrity in databases > File formats like CSV (Comma-Separated Values) for storing and transferring tabular data > Tools like Microsoft Access for managing and querying relational databases > The use of wildcards in database queries for flexible and powerful searching **Disciplinary Knowledge:** > Creating database tables with appropriate fields and primary keys to ensure uniqueness and accuracy > Applying validation rules to restrict data input and improve the reliability of the database > Using queries and parameter queries to extract meaningful data and analyze it > Designing entity relationship diagrams (ERD) to model and plan database structures > Exporting and importing data using file formats like CSV, ensuring compatibility with different systems	**Substantive Knowledge:** > Bitmap images are composed of a grid of pixels, with each pixel representing a specific color > Color depth determines the range of colors in an image, measured in bits per pixel > Compression reduces image file size, with options for lossy (data removed) or lossless (data retained) compression > Meta data in image files includes details like resolution, dimensions, and color depth for processing > Pixels are the smallest elements of a digital image, forming the building blocks of raster graphics > Vector images are composed of mathematically defined paths and shapes, allowing them to scale without losing quality > The difference between lossless and lossy compression and their effects on image quality and file size > Resolution is a measure of image clarity, often described in pixels per inch (PPI) **Disciplinary Knowledge:** > Using cutout tools to remove backgrounds and unwanted elements from images > Applying layers in image editing software to independently manipulate parts of an image > Using retouch tools to correct imperfections and enhance specific areas of an image, like clone stamping > Understanding and utilizing compression methods to balance image quality with storage needs > Creating high-quality digital images by optimizing resolution and choosing appropriate file formats (e.g., bitmap vs. vector) > Manipulating and editing images using tools like Pixlr X, including cropping, adjusting colors, and adding effects	**Substantive Knowledge:** > Definitions of brand awareness and its importance in customer recognition and recall > Understanding business risk and business reward, including their impact on decision-making in entrepreneurship > The role of a competitor and how businesses compete for market share > The use of logos and slogans to promote a brand and ensure customer retention > The difference between primary research (e.g., surveys and focus groups) and secondary research (e.g., published reports) in market analysis > Explanation of a USP (Unique Selling Point) as a key feature that differentiates a product from competitors > Identification of a target audience and its role in marketing and product design > The use of infographics to present data and information in an accessible and visually appealing way **Disciplinary Knowledge:** > Conducting market research to gather insights about customers and competitors, and analyzing findings to inform business decisions > Designing logos and slogans to create a unique identity for a product or service > Evaluating business risks and rewards to determine the viability of entrepreneurial ideas > Creating infographics to summarize and communicate complex data effectively in a business context > Identifying and articulating the USP of a product to differentiate it from competitors in marketing campaigns > Developing strategies to reach the target audience, considering demographics, preferences, and behaviors	**Substantive Knowledge:** > Definition and purpose of HTML (Hypertext Markup Language) for structuring web content and CSS (Cascading Style Sheets) for styling > Understanding the HTML document structure, including essential tags like <!DOCTYPE>, <html>, <head>, and <body> > The function of tags, such as <p> for paragraphs, <img> for embedding images, and <a> for creating hyperlinks > Attributes of HTML elements, such as src and alt for the <img> tag, and href for the <a> tag > The role of web browsers (e.g., Google Chrome, Mozilla Firefox) in rendering HTML content for users > The importance of opening and closing tags to define the start and end of HTML elements for proper structure > Features of text editors, such as syntax highlighting and live previews, for writing and testing web code > The use of website navigation, including menus and links, to improve user experience on a webpage **Disciplinary Knowledge:** > Structuring an HTML document correctly, using the required tags and hierarchy for readability and functionality > Embedding images with the <img> tag and ensuring accessibility with appropriate alt attributes > Creating functional hyperlinks using the <a> tag and href attribute to link to webpages or resources > Styling a webpage with CSS to enhance visual appeal, including font styles, colors, and layout adjustments > Testing and debugging web code using web browsers and text editors > Capturing and documenting coding progress or issues using tools like the Snipping Tool > Designing and implementing effective website navigation to ensure users can easily move	**Substantive Knowledge:** > Definitions of key game design elements, such as sprites, tilemaps, and scene design, and their role in game development > The function of action buttons and directional buttons in controlling characters and navigating gameplay > Countdown timers and score systems as features used to introduce challenges and track progress in games > The role of a game engine in providing tools for physics, graphics, sound, and overall game development > Understanding haptic feedback and its purpose in enhancing player immersion through tactile responses > The concept of level design, including objectives, layouts, and challenges, to create engaging gameplay > The use of programmable hardware like the Kitronik Arcade to create and test games **Disciplinary Knowledge:** > Designing and animating sprites to represent characters and objects in 2D games > Creating tilemaps to design game environments and arranging tiles for aesthetic and functional purposes > Developing and balancing win conditions to ensure fair and challenging gameplay > Integrating score systems into games to provide feedback and track player performance > Using game engines to implement features like lighting, sound effects, and physics > Testing games on platforms like Kitronik Arcade, iterating based on player feedback > Crafting immersive game experiences by designing engaging levels and using tools like countdown timers to increase tension
Cross Curricular Links	Computer Science	ICT	Media ICT	Business	Computer Science	Computer Science Games Development
Vocabulary	Topic 1 Glossary Topic 2 Glossary	Topic 3 Glossary Topic 4 Glossary	Topic 5 Glossary	Topic 6 Glossary	Topic 7 Glossary	Topic 8 Glossary Topic 2 Glossary
Assessments	Topic 1 SPA	Topic 4 SPA Babras Online Test	Topic 4 SPA Topic 5 SPA	Topic 5 SPA	Topic 6 SPA	Topic 7 SPA Topic 8 SPA