

CURRICULUM MAP	
Subject	Computer Science
Head of Department	Mr N. Rahman
SCHOOL CURRICULUM INTENT	
Rutlish School: Curriculum Intent Rutlish School provides a meaningful, broad and balanced curriculum which is accessible to all, as well as supports and challenges all students. Through all we do, we prepare students for opportunities, responsibilities and experiences later in life for them to be aware of their responsibilities and feel confident to participate and contribute to society. We aim to inspire, enable and facilitate lifelong learners that build on their individual strengths and capabilities and achieve their ambitions. We seek to support our students in becoming healthy, happy, resilient young adults, who are knowledgeable, kind, aware, confident, capable and skilful members of society. The school aims to: • ensure that the curriculum is designed for every student of every ability and every background to be supported in making the best possible progress and attainment from their starting point; all students can access the curriculum offer, with planning and teaching that support, stretch and challenge all learners across a full range of abilities, and making any reasonable adjustments where particular needs are identified to reduce barriers to learning and enable all pupils to achieve highly, including for disadvantaged students, students with SEND, and those facing barriers to learning and wellbeing; • provide a curriculum that is sequenced to build skills and knowledge throughout students' time at Rutlish School, to promote a deeper understanding of the world outside the classroom and equip them for their next steps in education, careers and in life; • ensure that our curriculum offer support different educational and career pathways, including EBACC and vocational; • ensure our curriculum consistently promotes high moral standards, social and self-awareness and allows students to formulate informed opinions on social issues such as, equality, diversity and inclusivity as well as the practical aspects of society; • enrich the curriculum and provide opportunities for students to build cultural capital, enhance a wide range of skills and knowledge beyond requirements of the national curriculum, and personalise and apply learning in other contexts; • provide students with the skills and knowledge necessary to becoming independent, analytical, critical, and innovative thinkers and encourage students' curiosity, creativity, self-expression, resilience, and confidence • provide consistent opportunities for students to develop and enhance their reading, communication and literacy and numeracy skills, and ensure that all students are supported to access and succeed within the curriculum.	
DEPARTMENT CURRICULUM INTENT	
The aim of ICT at Rutlish is to provide a high-quality KS3 curriculum education which equips students to use decomposition skills, critical reasoning and to creatively understand and change the world. We aim to teach students how to develop logical thinking and strengthen their ability to make informed decisions and solve problems in an increasingly digital and fast-changing world. The KS3 curriculum aims to equip students with essential knowledge of how computers and digital systems work, while also exploring how media products are planned, designed, and created to meet the demands of modern audiences and industries. • Students develop strong comprehension skills by interpreting worksheets and then completing practical tasks on the computers • Students are guided to extract key information, identify target audiences, and understand constraints (such as purpose, format, and deadlines), ensuring they can respond accurately and creatively to real-world scenarios • Numeracy is embedded through technical and design-based activities, such as calculating image dimensions, resolution, file sizes, timelines and data representation • Literacy skills are developed through writing of planning documents, worksheet completion and the need to read, interpret and understand key terminology required at KS3. Through the writing of long answers in different units of work. • Through evaluations and justification of choices and recommendations based on research-based tasks. • Students use subject-specific terminology • Teaching is adapted to remove barriers by using a range of accessible resources and differentiated strategies, such as visual exemplars, step-by-step demonstrations, scaffolded templates, and assistive technology. • Units are broken into manageable stages enabling all learners to progress at their own pace while developing confidence with digital tools	
KEY STAGE 3 RATIONALE/ INTENT	
The KS3 curriculum has been designed to ensure learners have sufficient knowledge to stay safe online and use computers safely in life. The KS3 curriculum also provides a focus on developing resilient learners who are able to learn from mistakes and effectively solve problems. The topics at KS3 give a basis of knowledge, skills and understanding to allow students to progress onto either iMedia or Computer Science at KS4 and will provide exposure to those subjects so that students can make an informed decision on their GCSE choices.	
KEY STAGE 4 RATIONALE/ INTENT	
At KS 4 students build on the skills they have learned in KS 3. The curriculum develops the student's ability to become a more resilient learner that is focused on logical thinking, decomposition and abstraction of problems to ultimately become advanced at solving computational problems. Students also continue to develop skills in digital literacy where they use computer systems to create and evaluate digital products for specific audiences and purposes.	
KEY STAGE 5 RATIONALE/ INTENT	
The KS 5 program of study develops the ability of students to become independent learners and to use research to extend their knowledge beyond the scope of the specification. Computer Science at KS 5 provides students with the challenge of programming a computer game that embeds complexities, creativity and allows students to problem solve and follow an iterative testing and development process. The curriculum enables students to become critical thinkers who are able to apply and evaluate their knowledge to different scenarios. The curriculum enables students to become critical thinkers that are able to apply and evaluate their knowledge to different scenarios.	

YEAR 7						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KNOWLEDGE	UNIT OF WORK: <u>Using Computers safely, effectively and responsibly (UCSER)</u>	UNIT OF WORK: <u>Data Representation & Computer Systems</u>	UNIT OF WORK: <u>Programming in Scratch/AI Safety/ SID</u>	UNIT OF WORK: <u>Clear messaging</u>	UNIT OF WORK: <u>Computers and Climate Change</u>	UNIT OF WORK: <u>Information Presentation</u>
	- Introduction to the Rutlish digital environment. Understand how to use the learning platforms to fully engage in all learning, homework and classwork set across the curriculum. - UCSER: - Learn to access files in teams and One Drive - Learn about the possible dangers of social networking sites - Learn how to respond to threats on the Internet - Learn how to keep your identity secure on the Internet - Learn how to create a secure, memorable password - Learn how to protect your identity online - Learn how to avoid being a victim of an email scam - Be aware of the advantages and disadvantages of email - Define the term “search engine” and name examples - Learn techniques to use a search engine efficiently - Appreciate that there is no guarantee that the information on the Internet is accurate This unit of work on using computers safely, effectively and responsibly supports both numeracy and literacy by developing students’ ability to interpret, evaluate and communicate information in digital contexts. In terms of literacy, learners improve their reading and writing skills by understanding online safety instructions, evaluating the reliability of sources, and using appropriate language when communicating online, such as in emails or presentations. This also strengthens critical thinking and comprehension. For numeracy, students engage with data such as privacy settings, passwords, and statistics about online risks. Overall, the topic encourages clear communication, logical thinking, and careful analysis, which are essential skills in both numeracy and literacy.	- To understand what a bit, nibble and a byte are - To understand what the binary number system is - Be able to write a 4-bit binary number in denary - Be able to convert a denary number to a 4-bit binary number - To understand the rules for binary addition - To understand what bit depth is - To calculate the file size of an image - Know that digital computers use binary to represent all kinds of data - To understand how patterns of binary digits represent numbers - To know that computers and devices transfer data between them as binary digits - To understand what ASCII is and how text is represented as a binary number - Remember that a computer is made up of a range of components and remember their purpose / function - Understand the role of the CPU, RAM and Hard Drive - Understand how the CPU, RAM and Hard Drive work together - Understand how the input and output devices work with the CPU Data representation aims to teach how computers are able to represent objects using binary. How to convert binary to denary and vice versa and to begin to understand how images are represented using binary. In terms of numeracy, representing data using binary, graphs, tables, and algorithms strengthens mathematical skills such as understanding patterns, calculations, and logical reasoning. For literacy, learners improve their ability to read, write, and interpret different forms of information, including code, diagrams, and digital text. By translating real-world information into formats that computers can process, students learn to analyse and explain data clearly, which enhances both their mathematical understanding and their communication skills.	- Understand that Scratch is a programming environment that allows you to create games, animations and other simulations - Understand what is meant by an algorithm - Create a sprite and write code to make it move and bounce - Load and use an existing Scratch file - Produce design ideas for a Scratch project - Define a variable - Understand the importance of using meaningful variable names - Write algorithms which use variables - Understand the purpose of comments in a program - Understand the purpose of repeat loops and procedures (“broadcasts”) - Learn what each of the operators +, -, *, /, mod and round in the Scratch Green block menu does - Understand the use of the operators <, =, >, and, or, not - Understand the purpose of testing - Understand what makes a specific and measurable test Scratch aims to introduce students to block based programming, computational thinking concepts and the process of iteration. Programming in Scratch can significantly support both numeracy and literacy development at Key Stage 3 by embedding these skills in a practical, engaging context. Numeracy is strengthened as students work with coordinates, variables, sequencing, timing, and logical problem-solving—for example, calculating scores, using loops to control repetition, or positioning sprites using x and y values. Literacy skills are developed as learners read and interpret instructions, use precise vocabulary (e.g., algorithm, debug, input/output), and design projects that require clear communication through on-screen text, dialogue, and storytelling. Explaining their code, annotating scripts, and evaluating their projects also build structured writing and speaking skills.	- To use reliable sources to research facts before posting or participating online - To understand how to choose search terms relating to a particular issue - Be able to use tools to copy an image into another application - Identify key features of a good poster - Know how to plan a poster to clearly convey a message - Find, use and document suitable images - Be able to create a poster using a desktop publishing application - Recognise when and how to modify a logo using a graphic editing program - Know how to combine text and graphics in a slide - Be able to use digital tools to provide feedback on design choices - Know how to plan a consistent layout for a set of slides - Be able to create a styled set of slides based on a plan - Apply techniques when searching for suitable text for slides - Be able to critically evaluate content against a rubric - Plan how to deliver a presentation - Explain your work to others through a presentation - Evaluate your presentation against a rubric The Clear messaging unit aims to build on experiences learners will have had in primary school. Students will need to consider how to use the internet to search terms needed to find specific content, before creating a product for presentation based around the topic of developing an E Safety message. Literacy is developed through researching reliable sources, selecting effective search terms, writing clear and purposeful content for posters and slides, and using structured language for presentations and evaluation. Numeracy is strengthened by applying concepts such as layout proportion, spacing, data, logical sequencing of information, and using rubrics with numerical scoring.	- Be able to explain how everyday internet use creates carbon emissions and uses water - Be able to identify which online habits use the most energy and suggest realistic ways to reduce impact - Be able to describe why most of a device’s carbon footprint happens before I even start using it - I can explain why e-waste is harmful and how recycling and repair can reduce damage - Be able to give examples of how technology can reduce emissions and resource use in the real world - Know how to create and justify a simple action plan to reduce the environmental impact of my digital habits and devices The unit encourages critical thinking about the impact of digital technology on sustainability and future solutions. It also explores how climate change can be monitored and addressed using computer science concepts and technology By embedding reading, writing, reasoning, and data skills into the exploration of digital sustainability, literacy is developed as students research and explain complex ideas—such as carbon emissions, e-waste, and environmental impact—using accurate vocabulary and clear, structured explanations in their action plans and discussions. Numeracy is enhanced through interpreting and applying data, such as comparing energy use of online activities, understanding proportions of a device’s lifecycle emissions, and making reasoned decisions based on this information. By combining explanation, evidence-based reasoning, and practical decision-making, students improve their ability to communicate ideas clearly while using numerical understanding to support sustainable choices in a real-world context.	- To use reliable sources to research facts before posting or participating online - To learn how to create an effective presentation by creating a Multi-Page Presentation - To know and understand how to design an interactive digital product that is fully fit for audience and purpose - Understand what the client requirements of a task are - To know how to create a research document that will support the requirements of the task - Be able to prepare evidence to support information for different target audiences and make decisions based on research collected - Be able to provide compelling evidence to support your justification - Understand how to use review sites to inform decisions according to specific criteria This unit supports numeracy and literacy by embedding both skills into research, analysis, and digital design tasks. Literacy is developed as students interpret client requirements, read and evaluate information from multiple sources, and produce research documents using clear, formal language. They also strengthen their ability to justify decisions and communicate ideas persuasively to different audiences, using appropriate vocabulary and evidence. Numeracy is enhanced through organising and ranking research data. Students may also use scales, ratings, or weighted criteria when prioritising requirements, which builds their understanding of proportion and data handling.
KEY SKILLS	To be able to break a task down into its component steps and be able to correctly sequence the steps in a tasks At Key Stage 3, using Scratch effectively in Computer Science requires a range of foundational skills across programming, problem-solving, numeracy, and literacy.	Data Representation Converting from denary to binary and vice versa. Binary addition ASCII representation Ordering binary units of measure, bit, and bytes. Calculating file sizes.	At Key Stage 3, using Scratch effectively in Computer Science requires a range of foundational skills across programming, problem-solving, numeracy, and literacy. Core Programming Skills Sequencing: understanding that instructions run in order.	Able to create the navigation menu of an interactive presentation. To be able to create internal and external hyperlinks. Use feedback to identify improvements and to be able to make appropriate refinements to a solution. To know how to include images on a digital product.	Students need to combine technical understanding, environmental awareness, numeracy for interpreting impact, and literacy for explaining and justifying ideas, enabling them to think critically about how their use of technology affects the world.	To plan the layout for a digital product to show what it will look like and that to explain how it will be suitable to the client’s brief. Select colours that reflect the client’s theme and are complementary. Select a font that reflects the theme and ethos. Decide on layout and position as well as size for the logo that is suitable for all slide layouts

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	Using cloud storage effectively by accessing, organising, and managing files in Microsoft Teams and OneDrive. Staying safe online by recognising the risks associated with social networking sites and knowing how to respond to online threats. Protecting personal information by understanding how to keep identities secure and safeguard personal data online. Creating strong passwords by developing secure, memorable passwords and understanding the importance of account security. Recognising online scams by identifying signs of phishing emails and other common online fraud attempts. Using the internet responsibly by applying effective search techniques, evaluating the reliability of online information, and understanding the benefits and limitations of email and search engines.	In the Computer Systems Unit, pupils will develop an understanding of how computer systems work by identifying key hardware components and their functions, distinguishing between hardware and software, and explaining the role of the CPU in processing instructions. They will learn about different types of storage, including the difference between primary and secondary storage, and use appropriate technical vocabulary to discuss computer systems. Pupils will also explore how hardware and software work together, compare a range of computing devices based on their features and purposes, and apply logical thinking to understand how data is processed, stored, and retrieved.	Selection: using if/then and if/else statements to make decisions Iteration: creating loops (e.g., repeat, forever). Variables: storing and updating values such as scores or timers Events: responding to actions like key presses or mouse clicks.	Review and evaluate the digital product. Research information using different sources and be aware of verifying information.	To plan the layout for a digital product to show what it will look like and that to explain how it will be suitable to the client's brief. Select colours that reflect the client's theme and are complementary. Decide on layout and position as well as size for the logo that is suitable for all slide layouts. Chosen image relates to the text on the product and enhances the message.	Descriptive example text is added to all slide placeholders. Chosen image relates to the text on the slide and enhances the message.
CURRICULUM SEQUENCING AND HOW WE BUILD ON SKILLS AND KNOWLEDGE	Introduction Draw upon student's knowledge and use of a learning platform at Primary – make links to similarities of these platforms despite different applications used Recap shortcuts and file types learned in primary school. UCSER Review what students had been taught at Key Stage 2 using technology safely, respectfully and responsibly; identify ways to report concerns about the use of social media, online content or contact with other users.	Data Representation Draw upon knowledge of the decimal number line learned in KS 2 and make links to the binary number line – similarities and differences. Computer Systems Extend and expand upon the knowledge acquired in Key Stage 2, looking at what a computer system is, introduce inputs and outputs. Discover the internal hardware of a computer, its related systems and software.	SCRATCH Draw upon the knowledge of using block-based Scratch programming in Key Stage 2 and develop working programs in Scratch to solve a range of problems. Understand the concepts of sequencing, selection and iteration. AI Skills and Safer Internet Week Build on a basic awareness of AI. Explain the use of AI and Rutlish policy on AI and its use in schools. Explore dangers and bias. Prepare student s to take part in Internet Safety Week and introduce the competition	Clear Messaging Review what students had been taught at Key Stage 2 using technology safely. All pupils will have a basic knowledge of using a computer, creating and managing files. They may already have email accounts and be able to send and receive emails, and will have used a search engine such as Google. How to search effectively and safely for information. Recognise how to avoid using inappropriate content. Developing skills in finding reliable data.	Computers V Climate Change Draw upon student's knowledge about the environment, a digital footprint and energy used in computing. Primary – make links to similarities of these concepts.	Information Presentation Review work already covered in Year 7 Unit 4 Clear Messaging. Identify key terms and definitions used in presentation. Improve understanding on how and what information to present, depending on desired outcome and audience.
WIDER APPLICATION AND FUTURE PATHWAYS	Careers: Students are confident in being safe online and can effectively evaluate the credibility of information online acknowledge any risks, which will allow them to be responsible digital citizens in any future employment. Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications Air Traffic Control Using computers safely and responsibly can play a significant role in promoting equity, cultural capital, inclusion and aspiration for disadvantaged students. This is particularly important for disadvantaged students, who may have less access to digital guidance, technology-rich experiences or online safety education outside school. The unit helps to close this knowledge gap and ensures that all students are better prepared for education, employment and everyday life in a digital world. The unit encourages students to understand and respect different perspectives and experiences online.	Careers: Students understand systems and inputs and outputs, and how data is represented in computer science. Job opportunities: Software Programmers Hardware engineer in: Games, Operating Systems, Databases, Application software, Mobile applications Air Traffic Control This unit will help empower disadvantaged students by providing them with knowledge that is fundamental to understanding how modern technology works. By learning how text, images, sound and numbers are stored and processed in binary, students gain access to the underlying concepts that drive digital technologies. The unit can enhance cultural capital by giving students an understanding of the digital world beyond their immediate experiences. Exploring how computers represent and transmit information helps students appreciate the technologies behind smartphones, social media, streaming services, artificial intelligence and global communications.	Careers: Software Developer Computer Systems Analyst Graphic Designer Games educator Teacher Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications Air Traffic Control The visual nature of Scratch removes many of the barriers associated with text-based programming, allowing students of all abilities and backgrounds to experience success. By creating animations, games and interactive projects, students develop confidence, resilience and problem-solving skills. Scratch provides an inclusive learning environment where all students can express themselves creatively and share their ideas. Programming projects can be designed around diverse cultures, communities and perspectives, encouraging students to celebrate differences and develop empathy. Teachers can also highlight the contributions of computer scientists from a range of	Careers: Key skills to search effectively using websites for relevant information and data that can be applied to the following: Publishing, Media, Advertisement and Fashion industry. Web Science able to apply the skills to use the features to design an effective website. Job opportunities: Web Designer Web Developer Digital Marketer Social Media Content Creator Media Producer Advertising and Marketing Analyst Learning to present information clearly and correctly without bias can play a significant role in promoting equity, cultural capital, inclusion and aspiration for disadvantaged students. Disadvantaged students, who may have less access to digital guidance, technology-rich experiences or online safety education outside school. The unit helps to close this knowledge gap and ensures that all students are better prepared for education, employment and everyday life in a digital world. The unit also develops transferable skills in research, communication, numeracy and digital literacy. Students learn to	Careers: Key skills to search effectively using websites for relevant information and data that can be applied to the following: Publishing, Media, Advertisement and Fashion industry. Web Science able to apply the skills to use the features to design an effective website Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications climate change and the environmental impact of technology can empower disadvantaged students by helping them understand how digital technologies affect the world around them and how they can contribute to positive change. Students learn that technology is not only something they use but also something that has social, economic and environmental consequences. By investigating topics such as energy consumption, e-waste, sustainable computing and renewable energy, students develop awareness of global issues while gaining knowledge that may inspire future study and careers in technology, engineering or environmental sciences.	Careers: Key skills to search effectively using websites for relevant information and data that can be applied to the following: Publishing, Media, Advertisement Industry. Able to apply the skills to use the features to design an effective digital product. Students discovering their proficiency in problem solving, handling syntax, programming may find they can enter an industry in which those skills are highly valued. Any careers linked to programming and different areas in Computer Science. Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications help empower disadvantaged students by developing practical digital and financial skills that are directly relevant to everyday life. Students learn how to research destinations, compare costs, manage budgets and make informed decisions using digital tools. These activities build confidence in handling real-world financial information and encourage independence, helping students develop skills that can support future education, employment and personal financial management.

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ASSESSMENTS Summative and Formative as applicable	Formative: Class discussions Do Now tasks Keyword Starters Worksheets Summative: End of unit test online Baseline Testing Self and peer evaluation of work	Formative: Class discussions – see ppt Do Now tasks Worksheets Online learning games Summative: End of unit test online Self and peer evaluation of work	Formative: Class discussions Do Now tasks Programming observations Summative: End of unit test Online Paper based assessment for AI Self and peer evaluation of work	Formative: Class discussions Do Now tasks Worksheets Rubric Presenting in class Summative: End of unit portfolio of work Self and peer evaluation of work	Formative: Class discussions Do Now tasks Worksheets Research document Summative: End of unit test Written Paper Based task based on comprehension of a research document Self and peer evaluation of work	Formative: Class discussions Do Now tasks Research documents Presenting in class Summative: Peer Assessment Self and peer evaluation of work End of unit quiz test. End of Year Exam
FEEDBACK SUPPORT	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓
INCLUSION AND ACCESSIBILITY	All pupils can access the curriculum because it combines practical, visual and structured tasks, whilst learning to use computers effectively and safely. These activities allow learners to demonstrate understanding in multiple ways (poster creation, research, class discussions, rather than relying only on written work. Students with SEND are supported through scaffolded learning and chunked tasks during guided research tasks, and structured presentation planning. The use of visual tools (slides, graphics, videos) and practical activities helps reduce cognitive load. Assistive strategies such as templates, key vocabulary, and also support understanding and independence. Disadvantaged pupils benefit from explicit teaching of digital literacy, research skills, and online safety, ensuring they gain access to knowledge and experiences they may not encounter outside school. Adaptive teaching is embedded through flexible outcomes and varied task complexity. For example, all students may create a presentation, but support can vary through templates, prompts, or simplified criteria, while higher-attaining students can extend learning through deeper evaluation, more complex coding, or detailed justifications.	All pupils can access the curriculum because it combines visual and structured tasks, whilst learning to understand data representation. Worksheets are tailored for different levels and printed where applicable. These activities allow learners to demonstrate understanding in multiple ways verbal explanation, worksheet completion, peer working, structured resources are used, class discussions are used often. Students with SEND are supported through scaffolded learning and chunked tasks during guided worked examples alongside a structured presentation. The use of visual tools (slides, graphics, videos) and practical activities helps reduce cognitive load. Assistive strategies such as templates, key vocabulary, and also support understanding and independence. Disadvantaged pupils benefit from explicit teaching of numeracy ensuring they gain access to knowledge they may not encounter outside school. Adaptive teaching is embedded through flexible outcomes and varied task complexity. For example, all students may create their own quiz for classmates on data representation, while support can vary through templates, prompts, or simplified question banks, while higher-attaining	All pupils can access the curriculum because it combines visual and structured tasks, whilst learning to understand Scratch. Worksheets are tailored for different levels and printed where applicable. Students with SEND are supported through scaffolded learning and chunked tasks during guided worked examples alongside a structured presentation. The use of visual tools (slides, graphics, videos) and practical activities helps reduce cognitive load. Assistive strategies such as templates, videos demonstrating how to create each block of code is shown alongside a verbal explanation. Captions are enabled on videos used. Disadvantaged pupils benefit from explicit teaching of literacy and blocks of code are colour coded to make learning the structure and sequence easier to remember. The software is freely available for learners to use and practise outside of school. Many example games exist with access to the code to make finding solutions easier. Tasks like critically evaluating work, designing for audience and purpose, and coding in Scratch ensure that every pupil is challenged, while support is provided to help them reach these ambitious goals rather than lowering expectations.	All pupils can access the curriculum because it combines visual and structured tasks, whilst learning to understand how to get your message across, based around the topic of online safety. Tasks are created with built in levels of challenge and printed where applicable. These activities allow learners to demonstrate understanding in multiple ways such as verbal explanation, written paragraphs, image depiction and presentations. Structured resources are used, class discussions are used often. Clear learning objectives are set and break learning into manageable steps, supporting accessibility for a wide range of learners. Students with SEND are supported through scaffolded learning and chunked tasks during guided worked examples alongside a structured presentation. The use of visual tools (slides, graphics, videos) and practical activities helps reduce cognitive load. Assistive strategies such as templates, videos demonstrating how to search, save and use an image for a presentation is taught. Simple graphic editing skills are adapted through different software choices, complexities of log chosen and composition of posters. Template are in built and can be used to assist learning. Disadvantaged pupils benefit from explicit teaching of literacy through understanding of a house style, how a brand is established	The unit on technology and its impact on the environment supports a variety of learning styles through discussion, visuals, and practical activities, while also encouraging moral and social awareness by helping pupils understand how technology affects society and the planet. This relevance helps all learners, particularly those who struggle with abstract concepts, to stay engaged and make connections. For disadvantaged pupils, this topic supports learning by using familiar, relatable examples and explicitly teaching key vocabulary with the help of visuals and structured support. Pupils with SEND benefit from clear structure and adaptive approaches such as breaking content into smaller steps, using predictable routines, and incorporating visual aids like diagrams and symbols. Multi-sensory teaching methods, including videos and hands-on activities, make learning more accessible, while reducing cognitive load through scaffolded resources supports understanding. Allowing flexible ways for pupils to demonstrate their knowledge, such as presentations, posters, or verbal explanations, ensures inclusivity. Adaptive teaching strategies ensure that all pupils work towards the same learning goals while receiving varying levels of support. In practice, lessons can be adapted to meet diverse needs, for example by providing	All pupils can access the curriculum because it combines visual, practical, and structured tasks while developing skills in researching information and presenting it effectively, within the context of a unit on information research and presentation. Tasks are designed with built-in levels of challenge and are scaffolded or printed where appropriate to support accessibility. These activities allow learners to demonstrate understanding in multiple ways, including verbal explanations, written summaries, visual representations, and digital presentations. Structured resources and frequent class discussions support understanding, while clear learning objectives break content into manageable steps for a wide range of learners. Students with SEND are supported through scaffolded learning, chunked tasks, and guided examples, alongside structured presentation templates. The use of visual tools such as slides, graphics, and videos, alongside practical research activities, helps to reduce cognitive load and support comprehension. Assistive strategies include the use of templates, step-by-step video demonstrations on how to search for reliable information, save sources, and incorporate images into presentations. Learners develop simple digital editing and presentation skills, with adaptations made through choice of

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	Teachers can adapt by adjusting the level of independence, scaffolding, and challenge within tasks. .	students can extend learning through challenge with more complex conversions Tasks such as evaluating sources, creating digital products, and learning about online security help build cultural capital and confidence. Structured support (e.g., guided research and justified decision-making) ensures all pupils can succeed regardless of starting point.		and how the ethos of a company is reflected in its graphic products. Many example posters and videos support learning and differentiation. Adaptive teaching is embedded through flexible outcomes and varied task complexity. All students choose to create their own logo, poster or presentation from research which they complete. Tasks such as evaluating poster and logo design, creating digital assets, and learning about the tools used in different software packages to create a logo will help build confidence and resilience.	real-life examples and vocabulary support for disadvantaged pupils, using structured worksheets and visual diagrams for SEND learners, and offering higher-level challenges such as debates for more advanced pupils. Creating an inclusive classroom environment is also essential, where all pupils are encouraged to participate, supported through paired discussions, and feel safe to make mistakes.	software, varying levels of complexity, and structured layouts. Disadvantaged pupils benefit from explicit teaching of literacy skills, including how to structure information, reference sources, and present content clearly and effectively. They also develop an understanding of how information is communicated to different audiences. A variety of example presentations, texts, and videos support modelling and differentiation, ensuring all learners can access the content. Adaptive teaching is embedded through flexible outcomes and varied task complexity, allowing all students to complete research and present their findings in different formats such as presentations, posters, or reports. Tasks such as evaluating sources, designing presentation slides, and using different software tools help build confidence, resilience, and digital literacy.
SPECIALIST VOCABULARY	Rutlish 365 Download Upload Submit Camel caps Folder Subfolder root folder/directory Recycle bin Backup shortcut key combination social networking cyberbullying online profile privacy settings phishing hacking biometrics encryption virus email signature Carbon Copy (CC) Blind Carbon copy (BCC) Attachment search engine server	Bit Byte Kilobyte Megabyte Base 2 ASCII File size Data representation Hardware Software Input / Output CPU (Central Processing Unit) Memory (RAM) Storage Network Internet Server Data centre Data Processing Input Device Output Device Processing Storage CPU (Central Processing Unit) Processor Memory RAM (Random Access Memory) ROM (Read Only Memory) Hard Drive (HDD) Solid State Drive (SSD)	Text based programming Block based programming Syntax Integer String Float/real Boolean Python Scratch Variable Input / Output print test Sprite Movement Variable Costume Loop If Else Iteration Selection Stage Coordinates Artificial Intelligence (AI) Machine Learning Algorithm Data Neural Network Automation Chatbot Training Model Pattern Recognition Decision Making	Reliable sources Bias Accuracy Evidence Fact vs opinion Keywords / search terms Sources Analysis Compare Evaluate Justify Criteria Ranking Audience Purpose Structure Conclusion Key findings Supporting evidence Persuasive communication PowerPoint Microsoft Sway Canva Charts Graphs Tables Images Captions Design Formatting	Climate change Global warming Greenhouse gases Carbon emissions Carbon footprint Energy consumption Electricity generation Fossil fuels Renewable energy Sustainability Environmental impact Cooling systems Water usage Efficiency Digital footprint Online activity Data tracking Privacy Data sharing Cookies Metadata Online identity Social media Cyber awareness Digital responsibility	Research Investigation Enquiry Fact-finding Source analysis Evidence Data collection Information gathering Reliability Accuracy Credibility Primary sources Secondary sources Referencing Bibliography Note-taking Summarising Comparing sources Evaluating information Questioning Information Presentation Skills Presentation
QUALITY FIRST TEACHING	✓ Strategies to learn more, remember more (metacognition) used in lessons e.g., retrieval, elaboration, interleaving, dual coding, etc. ✓ Differentiation and reasonable adjustments for students with SEND, EAL, etc. such as scaffolding, visual aids, audio, physical resources, planned questioning, etc. ✓ Opportunities for Literacy, Numeracy and Oracy, including a focus on reading ✓ Opportunities to apply key concepts and address misconceptions					

YEAR 8						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KNOWLEDGE	UNIT OF WORK: Digital Citizenship	UNIT OF WORK: Data Visualisation	UNIT OF WORK: Data Representation	UNIT OF WORK: Python	UNIT OF WORK: Game Development	UNIT OF WORK: Information Presentation
	• To understand the purpose of different social media platforms and the risks they pose • Understand key terms such as: fake news, clickbait and fact-checking • Know how to check the reliability of a source • Understand phishing, how to detect a phishing email/message and how to prevent becoming a victim • To create an interactive quiz • To define your house style by creating a consistent look to your interactive quiz • To create and export an interactive quiz about digital citizenship Students engage with data such as privacy settings, passwords, and statistics about online risks, helping them interpret numerical information, recognise patterns, and make informed decisions. This unit supports literacy by developing students' ability to read, evaluate and communicate information effectively in digital environments. Through analysing online content, identifying fake news and propaganda, and researching issues such as cyberbullying and online privacy, students strengthen their reading comprehension, critical thinking and media literacy skills. The unit supports numeracy through activities that involve collecting, analysing and presenting data. Students can students draw conclusions from numerical evidence to inform decisions and recommendations. By combining digital citizenship with data analysis and content creation, the unit promotes a range of transferable skills across the curriculum. Students use evidence to support arguments, evaluate the reliability of information, communicate findings effectively, and make informed decisions based on data. As a result, the unit not only meets Computing objectives but also strengthens essential literacy and numeracy skills needed for learning across all subjects.	• Learn to identify different types of data and explain how data can be used or misused to make decisions • Learn how to design a short 5-question survey that collects useful data • Learn to collect survey responses and identify errors, outliers and inconsistencies in a dataset • Learn to clean a dataset using simple rules and explain how bias can affect results • Learn to generate an infographic using AI and check it for accuracy • Be able to describe how big datasets are collected and cleaned and how AI uses data Numeracy is supported through students' engagement with data collection, analysis and interpretation. By identifying and categorising different types of data, designing surveys, selecting appropriate question types and analysing responses, students develop skills in data handling and statistical reasoning. They learn to identify patterns, trends, errors, outliers and inconsistencies within datasets, helping them make evidence-based conclusions. Activities such as evaluating data reliability, cleaning datasets and understanding the impact of bias strengthen students' ability to work accurately with numerical information and develop critical mathematical thinking. Literacy is developed through the communication, evaluation and critical thinking required when working with data. Students learn to plan and write effective survey questions, using clear and precise language to gather meaningful information. They develop reading and interpretation skills by analysing survey results, evaluating the validity of data and discussing how information can be used or misused to influence decisions. Exploring concepts such as reliability, bias and the role of data in AI systems encourages students to use subject-specific vocabulary, justify conclusions and communicate their findings clearly, supporting both spoken and written literacy across the curriculum.	• To learn about the different units of data that can be stored inside a computer and how quantities of these binary digits represent all forms of data within a computer • To learn to convert denary numbers into binary and calculate the sum of binary addition calculations up to 8 bits • Understand how electrical circuits work using binary signals • Read logic and interpret logic circuits • Complete truth tables based on the logic circuits shown • Explain how to complete a logic circuit • To learn and understand the Hexadecimal number system and convert a binary number to Hex and a Hex number to binary • Why data must be stored in binary format, converted to be processed by a computer. • Be able to explain the data units and moving between each – Bit, Nibble, Byte, Kilobyte, Megabyte, and Gigabyte Data representation in computer science helps develop both numeracy and literacy by teaching students how information can be structured, interpreted, and communicated effectively. In terms of numeracy. For literacy, learners improve their ability to read, write, and interpret different forms of information, including code, diagrams, and digital text. By translating real-world information into formats that computers can process, students learn to analyse and explain data clearly, which enhances both their mathematical understanding and their communication skills.	• Print, Loops, Variables, If Statements, Else Statements • To understand the use of arithmetic expressions • To read and create simple programs that use selection • To review Different data types, string, integer, float and Boolean • Know about different relational operators to form logical expressions. To explore what Boolean operators are • To predict answers to conditions and test out in Python • Using flowcharts to write an algorithm for coding tasks • Describe how iteration (while statements) controls the flow of program execution • To learn how to use a range of loops in Python programming: Count Controlled loop and while loops • To understand how to debug coding errors - Identify and fix common syntax errors • To develop knowledge of programming constructs to be able to predict outcomes of what will happen when a program runs To learn more complex programming techniques using a text-based language. Students will review and develop their knowledge of the programming constructs learned in Year 7 Programming in Python can significantly support both numeracy and literacy development at Key Stage 3 by embedding these skills in a practical, engaging context. Numeracy is strengthened as students work with integers, variables, sequencing, and logical problem-solving—for example, calculating scores, using loops to control repetition creating mini projects that require calculations to be performed. Literacy skills are developed as learners read and interpret instructions, use precise vocabulary (e.g., algorithm, debug, input/output. Explaining their code, commenting on their programs and evaluating their projects also build structured writing and speaking skills.	• Be able to create a new game • Create instances of an object • Be able to test a game by previewing it • Understand the key components of a platform game including: • Define game objectives • Characters and sprites • Be able to create a theme and concept art for a platform game • Be able to design sprites for a platform game • Understand how collision detection works • Implement further features of platform games including: • The main character sprite falling off the screen • The main character sprite spawning back at the start This unit gives students practical opportunities to design and program two games. Students begin by creating a firework game that makes use of particle emitters and events. They make use of many key games programming concepts such as sprites, collision detection and variables for use in scoring. Key object-oriented programming concepts (OOP), such as objects and instances, are introduced in a KS3 appropriate manner. Students will develop programming skills through iterative testing and development of their games. The programming language makes use of a visual programming environment which is an excellent transition between block programming and text programming. This unit will support both numeracy and literacy development at Key Stage 3 by embedding these skills in a practical, engaging context. Numeracy is strengthened as students work with integers, variables, sequencing, and logical problem-solving—for example, calculating scores, using co-ordinates to place sprites in position and challenge behaviours.	• To use reliable sources to research • To learn how to create an effective digital product by creating a non-linear navigational product • To know and understand how to design an interactive digital product that is fully fit for audience and purpose • To understand how the different features on a digital product can be used to design an effective digital product • To understand the importance of presenting information clearly • Understand what the client requirements of a task are • Be able to prepare evidence to support information for different target audiences and make decisions based on research collected • Research and compare without bias a list of requirements • Justify and be able to provide compelling evidence to support your justification. • Lear how to use software to order and rank research results according to specific criteria Literacy is developed as students interpret client requirements, read and evaluate information from multiple sources, and produce research documents using clear, formal language. They also strengthen their ability to justify decisions and communicate ideas persuasively to different audiences, using appropriate vocabulary and evidence. Numeracy is enhanced through organising and ranking research data. Students may also use scales, ratings, or weighted criteria when prioritising requirements, which builds their understanding of proportion and data handling.

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KEY SKILLS	Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns. Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users. Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.	Identifying and categorising different types of data (e.g., numerical and categorical). Understanding how data is used to inform decisions. Recognising how data can be manipulated or misused. Understanding the importance of data quality and reliability. Planning and designing effective survey questions. Selecting appropriate question types to gather useful information. Identifying patterns and trends within datasets. Recognising errors, outliers and inconsistencies in data. Interpreting survey results and drawing conclusions. Evaluating the reliability and validity of collected data. Applying simple rules to clean datasets. Correcting inaccurate or incomplete data. Understanding how bias can affect data collection and results.	Convert positive denary whole numbers to binary numbers (up to and including 8 bits) and vice versa. Addition of two binary integers (up to and including 8 bits) and explain overflow errors which may occur. Convert binary integers to their hexadecimal equivalents and vice versa. To understand how characters are represented in binary. ASCII representation Ordering binary units of measure, bit, and bytes. Calculating file sizes	To use simple arithmetic expressions in assignment statements to calculate values. Receive input from the keyboard and convert it to a numerical value. To write programs that display messages, receive keyboard input, and use simple arithmetic expressions in assignment statements. To use selection (if-elif-else statements) to control the flow of program execution. To locate and correct common syntax errors. To create lists and access individual list items. To use flowcharts to write an algorithm for grading and calculator program. To write a program in Python to check the number within acceptable limits and outputs a message saying accepted or not. To define and use iteration in a program. Combine iteration and selection to control the flow of program execution. To confidently modify and write a program using a while loop and a for loop. To be able to explain and predict outcomes. To be able to locate and correct common syntax errors.	This unit develops students' programming, computational thinking and problem-solving skills through the design, creation and testing of interactive games. Students learn key programming concepts including sprites, events, variables, collision detection and object-oriented programming fundamentals, while gaining experience of iterative development through testing, debugging and refining their work. Using a visual programming environment helps bridge the gap between block-based and text-based programming, building confidence and technical understanding. The unit also supports numeracy through the use of co-ordinates, scoring systems, variables and logical calculations, while literacy is enhanced through reading instructions, using technical vocabulary, evaluating solutions and communicating design decisions.	To plan the layout for a digital product to show what it will look like and that to explain how it will be suitable to the client's brief. Select colours that reflect the client's theme and are complementary. Develop a detailed design plan for a digital product that clearly communicates its intended appearance, functionality and suitability in meeting the client's requirements. Justify design decisions by demonstrating how the proposed layout, content and visual elements align with the client's brief, target audience and intended purpose. Select a colour palette that reflects the client's brand identity ensuring that colours are both complementary and visually engaging. Choose typography that supports the overall tone, values and ethos of the project. Carefully consider the positioning, sizing and consistency of branding elements Populate all content placeholders with meaningful descriptive text that illustrates the intended message and structure of the presentation.
CURRICULUM SEQUENCING AND HOW WE BUILD ON SKILLS AND KNOWLEDGE	Review what students have been exposed to in Year 7 and 8 in clear messaging units, how to search effectively and safely for information. Recognise how to avoid using inappropriate content and the skills in finding reliable data.	Review what students have been exposed to in Year 7 How to search effectively and safely for information. Recognise how to avoid using inappropriate content and the skills in finding reliable data.	Draw upon knowledge of binary unit in Year 7. Review and build upon knowledge gained in Year 7 in how the binary number system works and converting binary numbers to denary. Learn about the Hexadecimal number system by firstly revisiting and revising their Binary knowledge from Year 7. Students will then learn about how to convert between Denary, Binary and Hexadecimal numbers.	Draw upon the knowledge of using Python programming in Year 7 from the Python unit. Revisit the use of sequence, selection and repetition in programs; work with variables and various forms of input and output learn in Year 7. This unit follows on from Python so the concepts will be seen in a second manner of programming and make it easier to understand each concept. To build on the skills of Year 7 be developing the skills to recognize and correct errors in programs. Variables, selection were learnt in Year 7 and will be recapped this unit.	Students have studied algorithms a visual and/or text programming language in Year 7. They completed a Scratch unit and would have completed a Python programming unit prior to this.	Review work already covered in Year 7 Unit 4 Clear Messaging. Identify key terms and definitions used in presentation. Improve understanding on how and what information to present, depending on desired outcome and audience. They will have experience of research creating a digital product from the Computer V Climate Change Unit completed in Year 7.
WIDER APPLICATION AND FUTURE PATHWAYS	Careers: Students are confident in being safe online and can effectively evaluate the credibility of information online acknowledge any risks, which will allow them to be responsible digital citizens in any future employment. Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications Air Traffic Control Disadvantaged pupils benefit from explicit teaching of digital literacy, research skills, and online safety, ensuring they gain access to knowledge and experiences they may not encounter outside school. Students learn how organisations protect data, respond to cyber threats and manage digital risks, helping them understand careers and opportunities within the growing technology sector.	Careers: Students discovering their proficiency in problem solving, handling syntax, programming may find they can enter an industry in which those skills are highly valued. Computer Science industry: Robotics, British Aerospace, Data Analysts. Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications Air Traffic Control Disadvantaged pupils benefit from explicit teaching of numeracy ensuring they gain access to knowledge they may not encounter outside school. Tasks such as evaluating sources, designing presentation slides, and using different software tools help build confidence, resilience, and digital literacy.	Careers: Students discovering their proficiency in problem solving, handling syntax, programming may find they can enter an industry in which those skills are highly valued. Computer Science industry: Robotics, British Aerospace, Data Analysts. Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications Air Traffic Control Disadvantaged pupils benefit from explicit teaching of numeracy ensuring they gain access to knowledge they may not encounter outside school Tasks such as evaluating sources, creating digital products, and learning about online security help build cultural capital and confidence. Structured support (e.g., guided research and justified decision-making)	Careers: Students discovering their proficiency in problem solving, handling syntax, programming may find they can enter an industry in which those skills are highly valued. Computer Science industry: Robotics, British Aerospace, Data Analysts Job opportunities: Machine Learning Engineer, Python Developer, Data Scientist, DevOps Engineer, Full-Stack Developer Disadvantaged pupils benefit from explicit teaching of literacy and blocks of code are colour coded to make learning the structure and sequence easier to remember. The software is freely available for learners to use and practise outside of school. A Computer Science unit on Spreadsheet Modelling can help disadvantaged students learn how to manage budgets, compare costs, interpret financial information and make informed decisions. These skills	Careers: Students discovering their proficiency in problem solving, handling syntax, programming may find they can enter an industry in which those skills are highly valued. Computer Science industry: Robotics, British Aerospace, Data Analysts Job opportunities: Machine Learning Engineer, Games developer, Developer, Data Scientist, DevOps Engineer, Full-Stack Developer. Disadvantaged pupils benefit from explicit teaching of literacy and blocks of code are colour coded to make learning the structure and sequence easier to remember. The software is freely available for learners to use and practise outside of school. enhance cultural capital by exposing students to the principles of graphic design, digital media and visual communication that are used across a wide range of industries. Students gain an understanding of how	Careers: Students discovering their proficiency in problem solving, handling syntax, programming may find they can enter an industry in which those skills are highly valued. Any careers linked to programming and different areas in Computer Science. Job opportunities: Software Programmers in: Games, Operating Systems, Databases, Application software, Mobile applications Disadvantaged students completing this unit are exposed to experiences that help build confidence, perseverance and independence, while demonstrating that they can create digital products. Such skills are valuable not only in Computing but also in education, employment and everyday life. The unit can enhance cultural capital by providing students with a deeper understanding of one of the world's largest and most influential creative industries.

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ASSESSMENTS Summative and Formative as applicable	Formative: Class discussions – see ppt Do Now tasks Worksheets Summative: End of unit test Self and peer evaluation of work Summative: End of unit assessment. End of unit quiz test		Formative: Class discussions – see ppt Quiz What went well and even Better If? (EBI) on project task Mind map summarise what they already know about a topic in a creative and visual way. Self and peer evaluation of classwork. Summative: End of unit assessment. End of unit quiz test	Formative: Class discussions – see ppt Quiz What went well and even Better If? (EBI) on project task Mind map summarise what they already know about a topic in a creative and visual way. Self and peer evaluation of classwork. Summative: End of unit assessment. End of unit quiz test	Formative: Class discussions – see ppt Quiz What went well and even Better If? (EBI) on project task Mind map summarise what they already know about a topic in a creative and visual way. Self and peer evaluation of classwork. Summative: End of unit assessment. End of unit quiz test Create a series of programmes in response to set tasks.	Formative: Class discussions – see ppt Quiz What went well and even Better If? (EBI) on project task Mind map summarise what they already know about a topic in a creative and visual way. Self and peer evaluation of classwork. Summative: End of unit Task End of unit quiz test. End of unit assessment.	Formative: Class discussions – see ppt Do Now tasks Research documents Presenting in class Summative: Peer Assessment Self and peer evaluation of work End of unit quiz test. End of Year Exam
FEEDBACK SUPPORT	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓		Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓
INCLUSION AND ACCESSIBILITY	All pupils can access the curriculum because it combines practical, visual and structured tasks, whilst learning to use computers effectively and safely. These activities allow learners to demonstrate understanding in multiple ways (poster creation, research, class discussions), rather than relying only on written work. Students with SEND are supported through scaffolded learning and chunked tasks during guided research tasks, and structured presentation planning. The use of visual tools (slides, graphics, videos) and practical activities helps reduce cognitive load. Assistive strategies such as templates, key vocabulary, and also support understanding and independence. Adaptive teaching is embedded through flexible outcomes and varied task complexity. For example, all students may create a presentation, but support can vary through templates, prompts, or simplified criteria, while higher-attaining students can extend learning through deeper evaluation, more complex coding, or detailed justifications.		Disadvantaged pupils benefit from explicit teaching of digital literacy, research skills, and online safety, ensuring they gain access to knowledge and experiences they may not encounter outside school. Assistive strategies such as templates, key vocabulary, and also support understanding and independence. Adaptive teaching is embedded through flexible outcomes and varied task complexity. For example, all students may create their own quiz for classmates	All pupils can access the curriculum because it combines visual and structured tasks, whilst learning to understand data representation. Worksheets are tailored for different levels and printed where applicable. These activities allow learners to demonstrate understanding in multiple ways verbal explanation, worksheet completion, peer working, structured resources are used, class discussions are used often. Clear learning objectives are set and break learning into manageable steps, supporting accessibility for a wide range of learners. Students with SEND are supported through scaffolded learning and chunked tasks during guided worked examples alongside a structured presentation. Adaptive teaching is embedded through flexible outcomes and varied task complexity. For example, all students may create their own quiz for classmates on data representation, while support can vary through templates, prompts, or simplified question banks, while higher-attaining students can extend learning through challenge with more complex conversions	All pupils can access the curriculum because it combines visual and structured tasks, whilst learning to understand how to get your message across, based around the topic of online safety. Tasks are created with built in levels of challenge and printed where applicable. These activities allow learners to demonstrate understanding in multiple ways such as verbal explanation, written paragraphs, image depiction and presentations. Students with SEND are supported through scaffolded learning and chunked tasks during guided worked examples alongside a structured presentation. The use of visual tools (slides, graphics, videos) and practical activities helps reduce cognitive load. Assistive strategies such as templates, videos demonstrating how to search, save and use an image for a presentation is taught. Simple graphic editing skills are adapted through different software choices, complexities of log chosen and composition of posters. Template are in built and can be used to assist learning.	Many example games exist with access to the code to make finding solutions easier. Adaptive teaching is embedded through flexible outcomes and varied task complexity. All students choose to create their own game and characters, allowing for stretch and challenge, whether it be a designed sprite or an imported sprite. Tasks such as evaluating game design, creating digital sprites, and learning about the sequence of game development will help improve confidence. Structured support (e.g., guided research and justified decision-making) ensures all pupils can succeed regardless of starting point. Tasks like critically evaluating work, designing for audience and purpose, and coding in Scratch and Python ensure that every pupil is challenged, while support is provided to help them reach these ambitious goals rather than lowering expectations. Students with SEND are supported through scaffolded learning, chunked tasks, and guided examples, alongside the use of visual tools such as videos and tutorials.	All pupils can access the curriculum because it combines visual, practical, and structured tasks while developing skills in researching information and presenting it effectively, within the context of a unit on information research and presentation. Tasks are designed with built-in levels of challenge and are scaffolded or printed where appropriate to support accessibility. These activities allow learners to demonstrate understanding in multiple ways, including verbal explanations, written summaries, visual representations, and digital presentations. Students with SEND are supported through scaffolded learning, chunked tasks, and guided examples, alongside structured presentation templates. The use of visual tools such as slides, graphics, and videos, alongside practical research activities, helps to reduce cognitive load and support comprehension. Adaptive strategies include the use of step-by-step video demonstrations on how to search for reliable information, save sources, and incorporate images into presentations. Learners develop simple

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	Teachers can adapt by adjusting the level of independence, scaffolding, and challenge within tasks.			Adaptive teaching is embedded through flexible outcomes and varied task complexity.		digital editing and presentation skills, with adaptations made through choice of software, varying levels of complexity, and structured layouts, help teaching learners how to how to structure information, reference sources, and present content clearly and effectively.
	.			Tasks such as evaluating poster and logo design, creating digital assets, and learning about the tools used in different software packages to create a logo will help build confidence and resilience.		Disadvantaged pupils benefit from explicit teaching of literacy through understanding of a house style, how a brand is established and how the ethos of a company is reflected in its graphic products. Many example posters and videos support learning and differentiation.
						Adaptive teaching is embedded through flexible outcomes and varied task complexity, allowing all students to complete research and present their findings in different formats such as presentations, posters, or reports.
SPECIALIST VOCABULARY	Social media	Dataset	Data representation	Variable	Instance	Research
	Platform	Data	Binary	Data Type	Object	Investigation
	Sharing	Pattern	Denary (decimal)	Integer (int)	Test	Enquiry
	Networking	Outlier	Number system	Float (float)	Preview	Fact-finding
	Fake profiles	Bias	Binary conversion	String (str)	Game Objective	Source analysis
	Fake news	Topic	Bit	Boolean (bool)	Character	Evidence
	Misinformation	Purpose	Nibble	Input	Sprite	Data collection
	Source	Range	Byte	Output	Pixel Art	Information gathering
	Reliability	Numeric Question	Kilobyte (KB)	Print	Collision Detection	Reliability
	Credible	Leading Question	Megabyte (MB)	Assignment	Spawning	Accuracy
	Bias	Survey	Gigabyte (GB)	Operator	Respawning	Referencing
	Scams	Results	Terabyte (TB)	Expression	Background Colour	Bibliography
	Phishing	Reliable	Storage	Conditional	Particle Emitter	Note-taking
	Confidential	Fair	File size	Selection	Orientation	Summarising
	Sensitive	Unfair	Data capacity	if	Event	Questioning
	Suspicious	Answers	Character set	elf	Action	Communication
	Interactive	Questions	ASCII	else	Refine	Organisation
	Assets	Influence	Unicode	Iteration	Variables	Structure
	Source	Decision	Text representation	Loop	Collision Mask	Layout
	Project	Change	Image representation	for	Smooth Camera	Audience
	Navigation	Limitation	Pixel	while	Platform Game	Purpose
	Coherent	Error	Resolution		Score	
	Hyperlinks	Unusual Result	Colour depth			
		Meaningful				
		Balanced				
QUALITY FIRST TEACHING	✓ Strategies to learn more, remember more (metacognition) used in lessons e.g., retrieval, elaboration, interleaving, dual coding, etc. ✓ Differentiation and reasonable adjustments for students with SEND, EAL, etc. such as scaffolding, visual aids, audio, physical resources, planned questioning, etc. ✓ Opportunities for Literacy, Numeracy and Oracy, including a focus on reading ✓ Opportunities to apply key concepts and address misconceptions					

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YEAR 9												
	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
KNOWLEDGE	UNIT OF WORK: Cyber Security in the real World		UNIT OF WORK: Python		UNIT OF WORK: Computational Thinking		UNIT OF WORK: Spreadsheet Modelling		UNIT OF WORK: Graphics		UNIT OF WORK: Game Development	
	• Explain the difference between data and information • Critique online services in relation to data privacy • Identify what happens to data entered online • Explain the need for the Data Protection Act • Recognise how human errors pose security risks to data • Implement strategies to minimise the risk of data being compromised through human error • Define hacking in the context of cyber security • Explain how a DDoS attack can impact users of online services • Identify strategies to reduce the chance of a brute force attack being successful • Explain the need for the Computer Misuse Act • List the common malware threats • Examine how different types of malwares causes problems for computer systems • Question how malicious bots can have an impact on societal issues • Compare security threats against probability and the potential impact to organisations • Explain how networks can be protected from common security threats • Identify the most effective methods to prevent cyberattacks This unit takes the learners on journey of discovery about techniques used by cybercriminals to steal data, disrupt systems, and infiltrate networks. The learners will start by considering the value of their data to organisations and what they might use it for. They will then look at social engineering techniques used by cybercriminals to try to trick users into giving away their personal data.		• Understand which data type a variable is. • Understand why a computer needs to know what the data type is for a given input/variable. • Learn how to change the data type of a variable • Understand what Python is • Understand how to program outputs in Python, • Understand how to program inputs in Python, • Understand the need to store inputs in Python, • Understand how to store inputs into variables in Python • Remember how to program outputs in Python, • Remember how to program inputs in Python, • Remember the need to store inputs in Python, • Remember how to store inputs into variables in Python • Understand the difference between strings and variables • Understand how to concatenate strings and variables • Remember how we program inputs/outputs/variables • Remember what a variable's data type means • Remember how to tell the computer which data type a variable is • Learn how programs make decisions in Python This unit of work introduces students to the fundamentals of Python programming, focusing on how programs receive, store, process, and output data. Students will learn what Python is and how to create simple programs using inputs, outputs, and variables. They will explore different data types, such as strings and numbers, and understand why computers need to know the data type of information being stored. The unit covers storing user input in variables, changing data types, and distinguishing between strings and variables, as well as combining them through concatenation. As students build confidence, they will revisit and reinforce these key concepts before progressing to decision-making in programs, learning how computers use conditions to make choices. By the end of the unit, students will have developed a strong foundation in programming logic, data handling, and problem-solving using Python.		• Be able to ask logical questions to solve problems • Know the common Boolean operators: • Know different logic gates including: • Understand what an algorithm is • Create a sequence of instructions to achieve a goal • Understand how Boolean operators can be represented in written expressions and Venn diagrams • Understand how logic is used in different situations • Be able to complete truth tables for logic gates and circuits with up to three inputs • Understand how loops can be used to reduce the amount of code required for a solution • Be able to refine algorithms to reduce the number of instructions required • Understand the difference between lossy and lossless compression • Be able to use an algorithm to communicate data • Understand how the algorithm can be improved • Use a binary tree to further improve the algorithm • Understand why compression is needed for video transmission and photo storage • Understand how abstractions are used in everyday life • Be able to create abstractions for different purposes • Understand how networks are used to make an abstraction of a maze • Understand how decomposition can be used to break down problems into more manageable components • Be able to break down a large Computing problem into its parts and understand: • how images are converted to binary using pixels • how text is converted to binary using ASCII • Understand how nested loops can be used to improve solutions further • Be able to use an algorithm to communicate data • Use a binary tree to further improve the algorithm This unit introduces students to the world of computational thinking and logic. With the help of many unplugged activities, students get to understand the power of problem solving and the different methods that Computer Scientists use to tackle problems.		• Be able to reference cells • Be able to create simple formulas including * / + - • Be able to automatically create formulae using relative cell referencing • Understand what computer models are used for • Be able to format cells and insert a graphic into a spreadsheet • Understand what merchandise is and research different prices • Be able to create simple functions including SUM and AVERAGE • Understand that spreadsheets can be used to build financial models • Make use of relative and absolute cell referencing • Create a financial model to predict the profit on the sale of merchandise • Use a COUNTIF function to calculate seat sales • Understand the purpose of macros The unit covers relative and absolute cell references, formulas, functions and formatting. Pupils start by looking at different types of models and then use basic spreadsheet techniques to create and format a simple financial model to calculate the expected income from viewers' voting. The model is then extended to include sales from merchandising, with the introduction of “what if” scenarios some of which are solved using Goal Seek. Finally, the pupils create a seat booking system to calculate income from seat sales. Further spreadsheet features covered include SUM, MAX, IF and COUNTIF functions, conditional formatting, validation, charting and simple macros.		• Understand the characteristics of a vector graphic and how it is stored • Be able to create a vector-based logo that includes: Shapes, Fills • Understand how bitmap graphics are made from individual pixels including: • Understand how layers work and be able to use them to create a composite image • Be able to re-size and rotate images • To be able to isolate images from their background including the use of: • To make use of layers to create a composite image • Be able to add text to an image and alter text properties including: • Be able to use layers to create a greetings card including: • Use a template layout layer • Be able to show and hide layers • Be able to create a vector-based logo that includes: • Understand how bitmap graphics are made from individual pixels including: • Know how colour maps are used to create colour images • Understand how the use of vector or bitmap images affects file quality and file size • Understand the effect of altering the resolution of an image including: • Being able to create images of varying resolutions • Understand how layers work and be able to use them to create a composite image • Be able to transform images This unit of work focuses on digital graphics and image editing, giving students practical experience of creating and manipulating digital images using industry-standard graphic design techniques. Students will learn how to resize, rotate, transform, and isolate images from their backgrounds before combining them into a composite image using layers. Students develop skills in managing layers, including showing, hiding, and organising them, as well as adding and formatting text to create products such as greetings cards using template layouts. Students will also create a vector-based logo, applying design features such as outlines (strokes) and grouping.		• Be able to imagine, create and develop a new game • Create advanced instances of an object • Be able to test a game by previewing it and writing up a test table • Define their own • Game objectives • Create their own characters and sprites • Develop the concept art for a platform game • Be able to design sprites for a platform game • Create and understand collision detection masks • Implement further features of platform games including: • The main character sprites falling off the screen • The main character sprite spawning back at the start • Implement a score and lives variable This unit further develops students' practical opportunities to design and program two games. Students develop a firework game that makes use of particle emitters and events. They make use of many key games programming concepts such as sprites, collision detection and variables for use in scoring.	

 Rutlish School	KEY SKILLS This unit develops students' literacy skills through the investigation and communication of cybersecurity concepts. By analysing online content, identifying misinformation, and exploring cyber threats such as phishing, social engineering and data breaches, students strengthen their reading comprehension, critical thinking and digital literacy. They also learn to evaluate the reliability of information and communicate cybersecurity advice clearly and effectively. The unit supports numeracy through the collection, analysis and presentation of cybersecurity-related data. Students use spreadsheets to organise information, calculate percentages and averages, and create graphs to identify patterns and trends. By interpreting cybersecurity statistics and risk data, students develop data-handling and analytical skills, enabling them to make evidence-based decisions while gaining a deeper understanding of how technology, data and security are connected Programming in Python can significantly support both numeracy and literacy development at Key Stage 3 by embedding these skills in a practical, engaging context. Numeracy is strengthened as students work with integers, variables, sequencing, and logical problem-solving—for example, calculating scores, using loops to control repetition creating mini projects that require calculations to be performed. At the same time, literacy skills are developed as learners read and interpret instructions, use precise vocabulary (e.g., algorithm, debug, input/output). Explaining their code, commenting on their programs and evaluating their projects also build structured writing and speaking skills Algorithm design and refinement Logical reasoning Pattern recognition Abstraction Decomposition Systematic problem-solving Evaluating and improving solutions Using loops and nested loops efficiently Reducing unnecessary code and instructions Creating more efficient algorithms Understanding program optimisation Developing structured solutions to complex problems Understanding binary data Interpreting how images are represented using pixels Understanding how text is encoded using ASCII Learning how data is stored, transmitted, and processed by computers These objectives support literacy, oracy, and numeracy by developing students' understanding of key computing concepts and their ability to communicate, analyse, and solve problems. Literacy skills are enhanced through learning and using technical vocabulary, as well as interpreting information and explaining complex processes. Oracy skills are developed through discussing how algorithms can be improved, explaining the use of abstractions and decomposition, justifying problem-solving approaches, and presenting solutions using appropriate computing terminology. Numeracy is strengthened through logical reasoning, pattern recognition, binary number systems, data representation using pixels and ASCII, analysing algorithms and binary trees, and applying systematic problem-solving techniques. Be able to sort data Be able to use conditional formatting Experiment with different 'What if' scenarios to achieve a goal Be able to create a seat booking system for a live show by using validation techniques to ensure that only valid data can be entered. Using conditional formatting to show which seats have been booked Be able to create a suitable chart to show the number of seats remaining Consider ways of increasing profit to meet a given target These objectives support literacy, oracy, and numeracy by developing students' ability to use and understand spreadsheet terminology, research and interpret pricing information, follow instructions, and communicate findings using appropriate technical vocabulary. Students enhance their oracy skills through discussions about computer models, explaining spreadsheet features and cell referencing, presenting financial models, and justifying profit predictions using subject-specific language. Numeracy is strengthened through the use of calculations, formulas, and functions such as SUM, AVERAGE, and COUNTIF, as well as by analysing financial data, creating profit models, testing scenarios, and applying logical mathematical thinking through relative and absolute cell referencing. Practical skills are given in investigating the effect on file size and quality of changing image resolutions. The second half of the unit gives practical skills in using graphics editing software including the use of layers, isolating images and adding text. Pupils will bring in all the skills they have learnt during the unit to make a greetings card. This will then be added to an assessment portfolio. This unit gives a solid foundation to the theory and practical skills required for KS4 courses such as Computer Science or iMedia. These objectives support students in developing their digital image editing and graphic design skills by learning how to isolate images from their backgrounds, add and format text, and manipulate text properties to create visually effective designs. Students will use layers to create a greetings card, including showing and hiding layers and applying layer effects such as drop shadows and strokes to enhance the appearance of their work. They develop an understanding of vector graphics by creating a vector-based logo and learn how image quality and colour depth are affected by the number of bits per pixel. Through these activities, students gain experience in using industry-standard graphic design techniques to create professional and purposeful digital media products. This unit develops students' programming, computational thinking and problem-solving skills through the design, creation and testing of interactive games. Students learn key programming concepts including sprites, events, variables, collision detection and object-oriented programming fundamentals, while gaining experience of iterative development through testing, debugging and refining their work. Using a visual programming environment helps bridge the gap between block-based and text-based programming, building confidence and technical understanding. The unit also supports numeracy through the use of co-ordinates, scoring systems, variables and logical calculations, while literacy is enhanced through reading instructions, using technical vocabulary, evaluating solutions and communicating design decisions. Students develop creativity, resilience, logical reasoning and digital skills that provide a strong foundation for future study in Computer Science. This unit will support both numeracy and literacy development at Key Stage 3 by embedding these skills in a practical, engaging context. Numeracy is strengthened as students work with integers, variables, sequencing, and logical problem-solving—for example, calculating scores, using co-ordinates to place sprites in position and challenge behaviours.
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 Rutlish School						
	Systems, Databases, Application software, Mobile applications Air Traffic Control	Systems, Databases, Application software, Mobile applications Air Traffic Control	Engineer, Games developer, Developer, Data Scientist, DevOps Engineer	Engineer, Games developer, Developer, Data Scientist, DevOps Engineer	Engineer, Games developer, Developer, Data Scientist, DevOps Engineer, Full-Stack Developer	Developer, Data Scientist, DevOps Engineer, game designer programmer digital artist
ASSESSMENTS Summative and Formative as applicable	Formative: Class discussions – see ppt Do Now tasks Worksheets Summative: End of unit test Self and peer evaluation of work End of unit assessment. End of unit quiz test By ensuring all pupils develop essential digital safety skills, understand how technology can support and protect different users, and appreciate the diverse range of people working within the cyber security sector. Through exploring real-world cyber threats, online safety and industry careers, students gain a broader understanding of the digital world and its impact on society. These experiences help pupils become responsible digital citizens, challenge stereotypes about technology careers, develop awareness of current cyber security issues, and build the knowledge and confidence needed for further education, employment and participation in an increasingly connected world. Encourage pupils to explore how security and visual communication reflect different cultures, identities and perspectives on cyber security.	Formative: Class discussions – see ppt Quiz What went well and even Better If? (EBI) on project task Self and peer evaluation of classwork. Summative: End of unit assessment. End of unit quiz test Python enables pupils to gain knowledge and skills that are increasingly important in modern society and the workplace. By exploring the real-world applications of technology, ethical considerations and the wider impact of computing on society, students develop a broader understanding of the digital world and their role within it. Enrichment opportunities, exposure to career pathways and engagement with contemporary technological issues help raise aspirations, broaden horizons and equip pupils with the knowledge and experiences needed for future education, employment and active participation in society.	Formative: Class discussions – see ppt Worksheets Self and peer evaluation of classwork. Summative: End of unit assessment. End of unit quiz Students are not expected to have prior Scratch experience to complete the task. Other problems can be solved through online software or paper solutions freely available online. Other projects are shared and code can be manipulated for use in their own programs. Learning about Cyber Security helps by ensuring all pupils develop essential digital safety skills, understand how technology can support and protect different users, and appreciate the diverse range of people working within the cyber security sector. Through exploring real-world cyber threats, online safety and industry careers, students gain a broader understanding of the digital world and its impact on society. These experiences help pupils build the knowledge and confidence needed for further education, employment and participation in an increasingly connected world.	Formative: Class discussions – see ppt Quiz What went well and even Better If? (EBI) on project task Mind map summarise what they already know about a topic Self and peer evaluation of classwork. Summative: End of unit assessment. End of unit quiz Create a series of programmes in response to set tasks. By developing pupils' ability to analyse data, solve problems and make informed decisions using digital tools. Spreadsheets are widely used across education, employment and everyday life, the topic ensures all students gain practical digital skills while understanding how data can be used to support individuals, organisations and communities. Ensures all pupils develop essential data-handling and analytical skills that are valuable in further education and employment. Pupils use spreadsheets to create and manage a personal budget, helping all learners develop important financial literacy skills. Demonstrate how spreadsheet modelling can be used to support diverse needs and inform decisions that benefit different groups within society. Pupils analyse survey data to identify ways a school can improve accessibility and participation for all students.	Formative: Class discussions – see ppt Quiz What went well and even Better If? (EBI) on project task Mind map summarise what they already know about a topic Self and peer evaluation of classwork. Summative: End of unit Task End of unit quiz End of unit assessment. A Graphic Image Creation, Brand Creation and Logos course can support a school's objectives around equality, inclusion, diversity and cultural capital by enabling pupils to develop creativity, visual communication and digital design skills while exploring how images and branding influence society. Through the study of design principles, representation and audience needs, students gain an understanding of how visual media can be used to communicate effectively with diverse communities. All pupils have the opportunity to develop creative and digital design skills regardless of background or prior experience as software used is available online for free and in school. By teaching pupils to create graphics and branding that are accessible and considerate of different audiences and needs. Encourage pupils to explore how branding and visual communication reflect different cultures, identities and perspectives, especially relevant iMedia	Formative: Class discussions – see ppt What went well and even Better If? (EBI) on project task Self and peer evaluation of classwork. Summative: End of unit Task End of unit quiz End of Year Exams Pupils design and build their own platform game, allowing every student to demonstrate creativity and problem-solving skills in an accessible project. Inclusion: Encourage students to consider the needs of different players when designing games, including accessibility and usability features. Pupils incorporate adjustable difficulty levels or clear visual cues to make their game accessible to a wider range of users. Promote representation and challenge stereotypes by encouraging a variety of characters, stories and themes within game design. Pupils create game characters that reflect different cultures, backgrounds and experiences. Cultural Capital: Develop pupils' understanding of the games industry, digital media and related career pathways while exploring the impact of gaming on society. Through these experiences, students develop valuable digital, creative and collaborative skills while gaining a broader understanding of the role of technology and gaming in modern society. This enhances their cultural capital, promotes inclusive thinking and prepares them for further study and future careers in the digital and creative industries.
FEEDBACK SUPPORTS LEARNING	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓	Opportunity for students to reflect on learning, respond to feedback, improve work, etc. ✓
INCLUSION AND ACCESSIBILITY	All pupils access this Year 9 Digital Citizenship unit through clear teacher modelling, structured discussions, visual examples, and practical activities that build understanding of social media, fake news, source reliability and phishing. Disadvantaged pupils are supported through explicit teaching of key concepts, in-school access to technology and	All pupils should be able to engage with the core concepts and learn the intended programming skills. These activities allow learners to demonstrate understanding in multiple ways verbal explanation, worksheet completion, peer working, structured resources are used, class discussions are used often.	For pupils with SEND, computational thinking naturally lends itself to breaking complex problems into smaller, manageable steps (decomposition), which can reduce cognitive overload and support understanding. Visual organisers, flowcharts, worked examples and structured tasks can help pupils process information more effectively.	Pupils with SEND will be supported through clear instructions, modelling and scaffolded resources. Potential barriers related to prior knowledge, technology access and confidence will be reduced. Provide access to lesson resources and exemplars through the school's learning platform.	SEND pupils will be supported through chunked instructions, vocabulary support and assistive technologies. Disadvantaged pupils will receive structured guidance and access to all required resources in lessons. Adaptations will be made to the level of support provided rather than the curriculum content. High expectations will be maintained for all pupils, ensuring every learner develops a secure understanding of	Disadvantaged pupils benefit from explicit teaching of literacy and blocks of code are colour coded to make learning the structure and sequence easier to remember. The software is freely available for learners to use and practise outside of school. Many example games exist with access to the code to make finding solutions easier. Adaptive teaching is embedded through flexible outcomes and varied task

 Rutlish School	resources, and the avoidance of assumptions about prior experience. SEND pupils are supported through scaffolded resources, keyword mats, chunked instructions, templates, checklists and opportunities for guided practice. Adaptive teaching is achieved by providing varying levels of support and challenge, such as worked examples, planning frameworks and guided analysis for those who need them, alongside extension opportunities including independent research and more sophisticated design features. High expectations are maintained for all pupils by ensuring everyone works without reducing ambition or challenge.	Use teacher modelling and live coding to demonstrate new concepts step-by-step. Provide worked examples before asking pupils to write independent code. . SEND Reduce cognitive load by introducing one concept at a time. Use retrieval activities to revisit prior learning. By allowing pupils to test and debug partially completed programs before creating their own. Adaptive teaching involves making adjustments to support learning while maintaining the same curriculum goals. Offer visual aids such as trace tables. Extend learning through additional functionality.	Disadvantaged Students are catered for where all activities that can be carried out by computer have a paper alternative. For disadvantaged pupils, computational thinking helps develop transferable skills that may not depend on prior knowledge or access to technology outside school. Explicit teaching of problem-solving strategies ensures all pupils have a common foundation from which to work. Collaborative activities, real-world scenarios and practical tasks allow pupils to build confidence and develop critical thinking skills that support learning across the curriculum and beyond school. For challenge and maintaining ambition for all, computational thinking provides opportunities for deeper thinking regardless of starting point. All pupils can work towards the same learning objectives while accessing different levels of complexity.	Adaptations will focus on the level of support provided rather than reducing curriculum expectations. Maintain common learning objectives for all pupils. Expect all pupils to create and evaluate spreadsheet models. Some may use scaffolds or prompts, while others work more independently, but all pupils will be expected to demonstrate understanding of modelling, calculation and data analysis. Pupils with SEND will be supported through chunked instructions, vocabulary support and accessible resources. Disadvantaged pupils will have access to all required materials and opportunities to develop spreadsheet skills regardless of prior experience.	vector and bitmap graphics, image editing techniques and digital design skills while working towards the same ambitious learning outcomes. When creating the final greetings card assessment: All pupils must apply knowledge of layers, images and text. Some pupils may use scaffolded planning sheets. Others may work more independently. Success criteria remain the same for everyone Remove barriers relating to resources, prior knowledge and access to technology. Adaptations will focus on the level of support provided rather than reducing curriculum expectations.	complexity. All students choose to create their own game and characters, allowing for stretch and challenge, whether it be a designed sprite or an imported sprite Tasks such as evaluating game design, creating digital sprites, and learning about the sequence of game development will help improve confidence. Tasks like critically evaluating work, designing for audience and purpose, and coding in Python ensure that every pupil is challenged, while support is provided to help them reach these ambitious goals rather than lowering expectations. The unit assumes no specific prior knowledge, however some of the tasks can be challenging. It will depend on the experience and ability of students as to which Year group is most appropriate for teaching this unit. Disadvantaged Pupils Remove barriers relating to resources, prior knowledge and access to technology as software and tutorials are freely available on the internet.
SPECIALIST VOCABULARY	Oversharing Digital Footprint Trolling Folder Subfolder root folder/directory Recycle bin Backup shortcut key combination social networking cyberbullying online profile privacy settings phishing hacking biometrics encryption virus Attachment search engine server	Variable Data Type Integer (int) Float (float) String (str) Boolean (bool) Input Output Print Assignment Operator Expression Conditional Selection if elif else Iteration Loop for while Range Function Parameter Argument Return List Tuple Dictionary Index Array Import Module Library	Logical thinking Logic Boolean operators AND OR NOT Logic gates AND gate OR gate NOT gate Algorithm Sequence Venn diagram Truth table Circuit Loop Nested loop Instructions Binary tree Abstraction Network Decomposition Pixels ASCII Nodes Edges Packets Source Destination	Cell reference Formula SUM AVERAGE Function Relative cell referencing Plus Minus Times Divide Computer model Absolute cell referencing Fill colour Merge cells Font Cell Border Merchandise Profit MAX IF Sort Conditional formatting What IF scenarios Goal Seek Validation COUNTIF	Image manipulation Photo editing Photoshop Magnetic lasso tool. Cloning Distort features Filters Layers Refine edge Quick Selection tool Magic wand tool Brush tool Healing tool Clipping mask Vector Logo Fills Outlines Strokes Merge Wireframe Rectangle Right triangle Union Subtraction Grouping Ungrouping Quality Resolution Layer Composite image Re-size Transform Rotate Pixels per inch (PPI) Dots per inch (DPI)	Instance Object Test Preview Game Objective Character Sprite Pixel Art Collision Detection Spawning Respawning Background Colour Particle Emitter Orientation Event Action Refine Variables Collision Mask Magic wand tool Brush tool Healing tool Clipping mask Vector Logo Fills Outlines Pixel X-axis Y-axis Wireframe Rectangle Right triangle



QUALITY
FIRST
TEACHING

- ✓ Strategies to learn more, remember more (metacognition) used in lessons e.g., retrieval, elaboration, interleaving, dual coding, etc.
- ✓ Differentiation and reasonable adjustments for students with SEND, EAL, etc. such as scaffolding, visual aids, audio, physical resources, planned questioning, etc.
- ✓ Opportunities for Literacy, Numeracy and Oracy, including a focus on reading
- ✓ Opportunities to apply key concepts and address misconceptions