

	Autumn 1	Spring 2	Summer 3
<b>Content-</b> WHAT will be learned? What previous learning can be linked? Why this order/ <b>sequence</b> ?	<p><b>MS Office Skills (Digital Literacy)</b> Pupils become more confident in their use of the main application software used in school (MS Office suite). They investigate a range of software options to create formal documents including formal letter, email, presentation, and spreadsheet in order to organise a fictitious school trip to Bletchley Park</p> <ol style="list-style-type: none"> <li>3.1. E-mail etiquette</li> <li>3.2. MS Office</li> <li>3.3. Word processing</li> <li>3.4. Presentation software</li> <li>3.5. DTP software</li> <li>3.6. Spreadsheet software</li> <li>3.7. Proof-reading &amp; Spellchecker</li> <li>3.8. Slide transition &amp; animation effects</li> <li>3.9. Layout / Margins / Header &amp; Footer</li> <li>3.10. Layering &amp; Text Wrapping</li> <li>3.11. Formatting tables</li> <li>3.12. Worksheets</li> <li>3.13. Cell references / Formula</li> <li>3.14. Charts</li> <li>3.15. What if scenarios</li> </ol>	<p><b>Programming Unit</b> Introduction to <b>procedural programming concepts</b> (Sequencing, Iteration, Selection, use of variables) using the PRIMM methodologies where students will be predicting, running, investigating modifying and making algorithms/computer programs using flowcharts, pseudocode, block programming and Python code.</p> <p>Unit Keywords:</p> <ol style="list-style-type: none"> <li>2.1. Sequencing</li> <li>2.2. Selection</li> <li>2.3. Iteration</li> <li>2.4. Variables</li> <li>2.5. Input/Process/Output Model</li> <li>2.6. Computing Operators (Arithmetic, Comparison and Boolean operators)</li> <li>2.7. Algorithm</li> <li>2.8. Flowcharts</li> <li>2.9. Python Code</li> <li>2.10. PRIMM: Predict-Run-Investigate-Modify-Make</li> </ol>	<p><b>HTML Website Design</b> Pupils learn how to analyse basic customer requirements to design a basic website based on set requirements. Pupils also learn how to code a basic webpage using HTML code. (Reinforcement of text based programming / syntax) using a trial and error approach to learn how to test and troubleshoot code.</p> <ol style="list-style-type: none"> <li>1.1. Username / Password</li> <li>1.2. Health &amp; Safety</li> <li>1.3. E-safety (Cyberbullying)</li> <li>1.4. VLE</li> <li>1.5. Web-browser</li> <li>1.6. HTML syntax</li> <li>1.7. HTML tags</li> <li>1.8. RGB Colour codes</li> <li>1.9. Hyperlinks</li> <li>1.10. URL</li> <li>1.11. File Types: png, jpg, gif</li> <li>1.12. Cropping/resizing pictures</li> <li>1.13. Client Brief/User Requirements</li> </ol>
<b>Skills-</b> What will be developed?	<p>Develop <b>ICT skills (Digital Literacy)</b> using a range of application software (Word processing, spreadsheet, presentation, DTP, emailing) using an underlying theme of preparing a school trip to Bletchley Park.</p> <p>Manipulating files &amp; folders, using different file formats, transferring content between applications.</p> <p><b>Communication &amp; Literacy skills</b> (e.g. writing formal letters and documentation), proof-reading skills (including use of spellchecker &amp; thesaurus). Written and visual communication, target audience, purpose of information. Comparing methods of communicating (purpose, pros and cons, context) (Presentation, letters, leaflets, e-mails, webpages, etc.)</p>	<p><b>Problem solving through Trial &amp; Error / Troubleshooting,</b></p> <p><b>Applying maths concepts</b> including arithmetic calculations, x-y coordinates, Boolean logic.</p> <p>Implementing a basic algorithm using the Input/Process/Output model.</p> <p>Algorithmic Thinking using flowcharts</p> <p>Using basic test data to test an algorithm.</p>	<p><b>Text Based programming using HTML</b></p> <p><b>Problem solving through Trial &amp; Error / Troubleshooting &amp; Decomposition</b></p> <p><b>ICT Skills (Digital Literacy)</b> (Manipulating files &amp; folders, using different file formats e.g. for graphics files)</p> <p><b>Communication Skills</b> – Written and visual communication, target audience, purpose of information.</p>
Key 'How'/'Why' Questions- What <b>powerful knowledge</b> will be gained? What areas/themes/concepts will be explored?	<p>What are the main application software and their use. What are the main formatting techniques in each application software and how can they be used to communicate more effectively. What are What ifs scenarios when using spreadsheet software.</p> <p>E-Safety Curriculum</p> <ul style="list-style-type: none"> <li>• What is BIG Data and what are the impacts on individuals</li> <li>• What is Cloud computing and what are the impact on individuals</li> <li>• Basic Network Security concepts (Encryption e.g. How to find out if a website is secure (e.g. SSL for online payments), WIFI and Wireless Access Keys, firewall...</li> </ul>	<p>What's an example of algorithms? What are the main programming constructs used in algorithms (Sequencing, Selection, Iteration). What are syntax errors and logic errors and why should computer programs need to be tested?</p> <p>E-Safety Curriculum</p> <ul style="list-style-type: none"> <li>• What is cyber bullying and how to report it</li> <li>• Physical safety: Health &amp; Safety when using ICT equipment</li> </ul>	<p>What is HTML, the language used to design websites and what are the main tags used by this language. Why is it necessary to use HTML when creating a webpage. Why is it important to refer to the customer requirements, the purpose and the target audience when designing a website.</p> <p>E-Safety Curriculum</p> <ul style="list-style-type: none"> <li>• Risks associated with downloading games or other files from the Internet:</li> <li>• What are viruses, spyware and Trojan Horse</li> <li>• Legal Issues: Illegal downloads, copyright issues</li> </ul>
<b>SEND-</b> how will support be seen? Seating plans? Simplified questions?	<ul style="list-style-type: none"> <li>• Step by step demonstrations</li> <li>• Using software facilities such as Spellchecker</li> </ul>	<ul style="list-style-type: none"> <li>• Step by Step Instructions</li> <li>• Step by Step Video Clips</li> <li>• Python Syntax Helpsheets</li> </ul>	<ul style="list-style-type: none"> <li>• Step by Step Instructions</li> <li>• Step by Step Video Clips</li> <li>• HTML Syntax Helpsheets</li> </ul>

<b>Assessment-</b> What? Why?	<ul style="list-style-type: none"> <li>• Knowledge test: Application Software</li> <li>• Knowledge test: e-Safety</li> <li>• Assessment of students' "Information Pack"</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge test: Programming Concepts</li> <li>• Knowledge test: e-Safety</li> <li>• Assessment of student's coding portfolio</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge test: Website concepts</li> <li>• Knowledge test: e-Safety</li> <li>• Assessment of students' website</li> </ul>
What <b>memory for learning</b> skills will be required- modelling? Concrete answers? Retrieval?	<ul style="list-style-type: none"> <li>• Teacher demonstrations</li> <li>• Students practice: reproduce the key documents using a range of software from the MS Office suite.</li> </ul>	<ul style="list-style-type: none"> <li>• PRIMM's approach: Predict-Run-Investigate-Modify-Make</li> <li>• Trial and Error</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher demonstrations</li> <li>• Students practice: students reproduce tasks and apply skills to their own creative projects</li> </ul>
<b>Literacy-</b> reading, extended accurate writing and oracy opportunities	<ul style="list-style-type: none"> <li>• Students write the text for a formal letter, an informative leaflet and presentation, and a formal email to promote a fictitious school trip</li> <li>• Formal writing: letter vs. email</li> </ul>	<ul style="list-style-type: none"> <li>• The importance of accurate syntax when writing code</li> <li>• Programming Terminology (focusing on algorithm, Sequencing, Selection and Iteration)</li> </ul>	<ul style="list-style-type: none"> <li>• Web-authoring: pupils write the content of the 3 pages of their website to advertise their chosen UK attraction</li> </ul>
<b>Numeracy/computing</b> skills	<ul style="list-style-type: none"> <li>• Excel Spreadsheet with formula to calculate total cost of a school trip</li> </ul>	<ul style="list-style-type: none"> <li>• Python Turtle problem solving using angles and x,y coordinates</li> <li>• Arithmetic problems solved using an algorithm</li> </ul>	<ul style="list-style-type: none"> <li>• Adapting width and heights of pictures to create an effective page layout.</li> <li>• RGB Colour Codes</li> <li>•</li> </ul>
<b>Character</b> development	<ul style="list-style-type: none"> <li>• Being respectful when communicating online, E-mail Etiquette</li> </ul>	<ul style="list-style-type: none"> <li>• Perseverance using a trial-and-error approach</li> <li>• Helping other students troubleshoot their code using C3B4Me</li> </ul>	<ul style="list-style-type: none"> <li>• Perseverance using a trial-and-error approach</li> <li>• Helping other students troubleshoot their code using C3B4Me</li> </ul>
<b>Equality/Diversity</b> opportunities	<ul style="list-style-type: none"> <li>• The role of Alan Turing as a code breaker. (LGBTQ+)</li> <li>• The impact women at Bletchley Park</li> </ul>	<ul style="list-style-type: none"> <li>• The role of Grace Hopper in the development of high-level programming languages (and the discovery of the first computer bug).</li> <li>• The work of Ada Lovelace on algorithm design.</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying and challenging stereotypes in digital media/marketing.</li> </ul>
<b>Homework/Independent</b> learning	<p>Extra-Curricular Opportunities</p> <ul style="list-style-type: none"> <li>• See activities on Super Curriculum Grid.</li> </ul>	<ul style="list-style-type: none"> <li>• Subject Knowledge Quizzes</li> <li>• Spelling Quiz</li> </ul> <p>Extra-Curricular Opportunities</p> <ul style="list-style-type: none"> <li>• See activities on Super Curriculum Grid.</li> <li>• Students can complete programming challenges from home using a range of recommended websites. (e.g. 101computing.net, corde.org, etc)</li> <li>• Programming Club</li> </ul>	<p>Extra-Curricular Opportunities</p> <ul style="list-style-type: none"> <li>• See activities on Super Curriculum Grid.</li> </ul>
<b>CIAG</b> coverage/links	<ul style="list-style-type: none"> <li>• IT Skills in a business context (e.g Marketing, finances, administration)</li> </ul>	<ul style="list-style-type: none"> <li>• Careers in Software Development</li> </ul>	<ul style="list-style-type: none"> <li>• Web-designer, graphic designer, web-Author, copywriter, digital marketing expert, SEO expert.</li> </ul>

	Autumn 2	Spring 2	Summer 2
<b>Content-</b> WHAT will be learned? What previous learning can be linked? Why this order/ <b>sequence</b> ?	<p><b>Computer Hardware Unit (&amp; MS Office Skills)</b> Pupils gain a better understanding of how things work in relation to computing hardware and develop their <b>subject knowledge on key computing concepts including hardware, binary data and basic networking concepts.</b></p> <p>Develop <b>subject terminology</b> revisiting keywords that are relevant to today's digital world.</p> <p>Unit keywords:</p> <ol style="list-style-type: none"> <li>1.1. CPU characteristics</li> <li>1.2. RAM/ROM</li> <li>1.3. Input devices</li> <li>1.4. Output devices</li> <li>1.5. Storage Devices</li> <li>1.6. Storage Units</li> <li>1.7. Binary Data</li> <li>1.8. Network topology</li> <li>1.9. Network components (Switch, WAP, Router, Firewall)</li> <li>1.10. IP Address</li> <li>1.11. Web hosting</li> <li>1.12. Internet</li> <li>1.13. Bandwidth</li> <li>1.14. Wireless transmission (WiFi, 3G/5G)</li> <li>1.15. Wired transmission (Ethernet Cable)</li> </ol>	<p><b>Python Programming</b> Reinforcement of <b>procedural programming concepts</b> (Sequencing, Iteration, Selection, use of variables) using the PRIMM methodologies where students will be predicting, running, investigating modifying and making algorithms/computer programs using flowcharts, pseudocode, block programming and Python code.</p> <ol style="list-style-type: none"> <li>2.1. Text-based programming</li> <li>2.2. Python Syntax</li> <li>2.3. Python Turtle</li> <li>2.4. Sequencing</li> <li>2.5. Selection</li> <li>2.6. Iteration</li> <li>2.7. Variables</li> <li>2.8. Data types</li> <li>2.9. Casting</li> <li>2.10. (x,y) coordinates and angles</li> <li>2.11. Input/Process/Output</li> <li>2.12. Using an IDE</li> <li>2.13. Test plan</li> </ol>	<p><b>Digital Marketing &amp; Graphic Design</b> Exploring a range of Graphic Design and Photo-editing concepts and techniques to manipulate and create both vector-based graphics (e.g. logo) and bitmap graphics (photo montage)</p> <p>Unit Keywords:</p> <ol style="list-style-type: none"> <li>2.1. Photo editing</li> <li>2.2. Raster graphics (Bitmaps)</li> <li>2.3. Vector based graphics</li> <li>2.4. File formats</li> <li>2.5. Resolution</li> <li>2.6. Colour depth</li> <li>2.7. Transparency/opacity</li> <li>2.8. Layering</li> <li>2.9. Masking</li> <li>2.10. RGB colour codes</li> <li>2.11. Gradients</li> <li>2.12. Filters</li> <li>2.13. Information reliability</li> </ol>
<b>Skills-</b> What will be developed?	<p><b>ICT Skills (Digital Literacy)</b> Manipulating files &amp; folders, MS Office Skills (Presenting information using Powerpoint, Word, and Excel), searching and selecting information on the Internet.</p>	<p>Reinforcement of <b>procedural programming concepts</b> using text-based programming. (Python) (Sequencing, Iteration, Selection, use of variables)</p> <p><b>Problem solving through Trial &amp; Error / Troubleshooting, Abstraction &amp; Decomposition</b></p> <p><b>Algorithmic Thinking using flowcharts</b></p> <p><b>Problem solving using maths concepts</b> including arithmetic calculations (percentages, MOD/DIV, areas and volumes), x-y coordinates, Boolean logic.</p> <p><b>Abstraction, Decomposition &amp; Algorithmic Thinking</b></p>	<p>Develop ICT skills using creative software packages.</p> <p>Introduce a range of Graphic Design and Photo-editing techniques to boost pupils' confidence in developing a <b>creative use of ICT through experimentation.</b></p>
Key 'How'/'Why' Questions- What <b>powerful knowledge</b> will be gained? What areas/themes/concepts will be explored?	<p>What is digital data and why does all computer data is stored in binary format? What are the different hardware components of a computer system and why are they needed? What are the main use and characteristics of the main application software?</p> <p>E-Safety Curriculum</p> <ul style="list-style-type: none"> <li>• Why and how to keep your account secure (Login Name &amp; Password)</li> <li>• What makes a strong password</li> <li>• What information is personal and should not be shared on the Internet</li> </ul>	<p>How to analyse a problem to identify inputs, processes and outputs. How to design, implement, test and refine/adapt an algorithm.</p> <p>E-Safety Curriculum</p> <ul style="list-style-type: none"> <li>• Social Networks Safety: cyber bullying, sharing personal information, using privacy settings...</li> </ul>	<p>What are the main types of computer graphics and their characteristics/use: Vector based Graphics versus Bitmap Graphics. What are the key aspects impacting the quality of a bitmap graphic (Resolution, colour depth and file format/compression)</p> <p>E-Safety Curriculum</p> <ul style="list-style-type: none"> <li>• Information reliability: How to find out if information is reliable and can be trusted</li> <li>• Purpose/Audience of information, information bias, facts vs. opinions, quantitative and qualitative information...</li> </ul>

<b>SEND-</b> how will support be seen? Seating plans? Simplified questions?	<ul style="list-style-type: none"> <li>• Step by step demonstrations</li> <li>• Using software facilities such as Spellchecker</li> </ul>	<ul style="list-style-type: none"> <li>• Step by Step Instructions</li> <li>• Step by Step Video Clips</li> <li>• Python Syntax Helpsheets</li> </ul>	<ul style="list-style-type: none"> <li>• Step by step demonstrations</li> <li>• Use of alternative software</li> </ul>
<b>Assessment-</b> What? Why?	<ul style="list-style-type: none"> <li>• Knowledge test: Computing Hardware</li> <li>• Knowledge test: e-Safety</li> <li>• Assessment of student's Hardware presentation</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge test: Python Programming Concepts</li> <li>• Knowledge test: e-Safety</li> <li>• Assessment of Programming Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge test: Graphic Design concepts</li> <li>• Knowledge test: e-Safety</li> <li>• Assessment of students' digital graphics</li> </ul>
What <b>memory for learning</b> skills will be required- modelling? Concrete answers? Retrieval?	<ul style="list-style-type: none"> <li>• Teacher demonstrations</li> <li>• Students practice: reproduce the key documents using a range of software from the MS Office suite.</li> <li>• Quizzes focusing on hardware concepts</li> <li>• Use of the Internet to research key concepts and select relevant information</li> </ul>	<ul style="list-style-type: none"> <li>• PRIMM's approach: Predict-Run-Investigate-Modify-Make</li> <li>• Trial and Error</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher demonstrations</li> <li>• Step by step video tutorials</li> <li>• Students practice: students reproduce tasks and apply skills to their own creative projects</li> </ul>
<b>Literacy-</b> reading, extended accurate writing and oracy opportunities	<ul style="list-style-type: none"> <li>• Focus on specific computer hardware terminology</li> <li>• Students write the text for a formal letter and a formal email to promote a fictitious IT event</li> <li>• Formal writing: letter vs. email</li> </ul>	<ul style="list-style-type: none"> <li>• The importance of accurate syntax when writing code</li> <li>• Programming Terminology (focusing on algorithm, Sequencing, Selection and Iteration)</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on specific graphic design and photo-editing terminology</li> </ul>
<b>Numeracy/computing skills</b>	<ul style="list-style-type: none"> <li>• Storage unit calculations (KB, MB, GB)</li> <li>• Binary Conversions (0-255)</li> <li>• Excel Spreadsheet with formula to calculate total cost of a computer</li> </ul>	<ul style="list-style-type: none"> <li>• Python Turtle problem solving using angles and x,y coordinates</li> <li>• Arithmetic problems solved using an algorithm</li> <li>• Area and Volume Calculations</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding RGB colour codes</li> <li>• Picture resolution &amp; file sizes</li> </ul>
<b>Character</b> development	<ul style="list-style-type: none"> <li>• Being respectful when communicating online, E-mail Etiquette</li> </ul>	<ul style="list-style-type: none"> <li>• Perseverance using a trial-and-error approach</li> <li>• Helping other students troubleshoot their code using C3B4Me</li> </ul>	<ul style="list-style-type: none"> <li>• Working on creative tasks</li> <li>• Focusing on attention to details</li> <li>• Communication skills using visual communication</li> </ul>
<b>Equality/Diversity</b> opportunities	<ul style="list-style-type: none"> <li>• Video Clips from Code.org showing successful IT specialists from a range of background (Women in STEM, Minority Ethnic groups)</li> </ul>	<ul style="list-style-type: none"> <li>• The role of Grace Hopper in the development of high-level programming languages (and the discovery of the first computer bug).</li> <li>• The work of Ada Lovelace on algorithm design.</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying and challenging stereotypes in digital media/marketing.</li> </ul>
<b>Homework/Independent learning</b>	<ul style="list-style-type: none"> <li>• Subject Knowledge Quizzes</li> <li>• Spelling Quiz</li> </ul> <p>Extra-Curricular Opportunities</p> <ul style="list-style-type: none"> <li>• See activities on Super Curriculum Grid.</li> </ul>	<p>Extra-Curricular Opportunities</p> <ul style="list-style-type: none"> <li>• See activities on Super Curriculum Grid.</li> <li>• Students can complete programming challenges from home using a range of recommended websites. (e.g. 101computing.net, corde.org, etc)</li> <li>• Programming Club</li> </ul>	<ul style="list-style-type: none"> <li>• Subject Knowledge Quizzes</li> <li>• Spelling Quiz</li> </ul> <p>Extra-Curricular Opportunities</p> <ul style="list-style-type: none"> <li>• See activities on Super Curriculum Grid.</li> <li>• Using free to use online software (photopea.com) as opposed to licensed software so that students can access the software from home and apply their newly acquired skills to their own creative projects</li> </ul>
<b>CIAG</b> coverage/links	<ul style="list-style-type: none"> <li>• Careers in Computer Hardware &amp; Engineering</li> <li>• IT Skills in a business context (e.g Marketing, finances, administration)</li> </ul>	<ul style="list-style-type: none"> <li>• Careers in Software Development</li> </ul>	<ul style="list-style-type: none"> <li>• Careers in digital marketing, website design, multimedia editing, graphic design, visual communication</li> </ul>