

## Year 8 Computing Sequence

Year	Content Taught	National Curriculum Reference	Essential Knowledge	Assessment	Rationale
<b>Year 8</b>					
<b>YEAR 8</b>  <b>HT1/HT2</b>	In this half term students will study a topic focused on:  <b>Binary and Networks</b>	understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems  understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	Binary and Networks includes: <ul style="list-style-type: none"> <li>• Binary</li> <li>• Networks</li> <li>• Hardware</li> <li>• Software</li> <li>• Topologies</li> </ul> Students develop essential knowledge in lessons.	<b>Formative</b> Students will complete retrieval exercises each lesson to review and recall knowledge from previous lessons and apply this knowledge to alternate scenarios to deepen understanding.  <b>Summative</b> Students will develop essential knowledge in lessons and 'bring it all together', by answering:  "A small video game company wants to set up a computer network for its employees. Which network topology would be the most appropriate, and why?"	Students start in year 8 are introduced to new software applications that are required for all KS4 courses. This Essential Knowledge also builds on knowledge gained in KS2, learning how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts, use sequence, selection, and repetition in programs; work with variables and various forms of input and output  use logical reasoning to explain how some simple algorithms work and to

<p><b>HT2 &amp; HT3</b></p>	<p>In this half term students will study a topics focused on:</p> <p><b>Computer Graphics – User Interface</b></p>	<p>Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</p>	<p>Skills learned include:</p> <p>Fireworks/Photoshop - Formatting, Lasso Tool, Fill, Filters</p> <p>Draws on essential knowledge learned in Yr7</p>	<p><b>Formative</b></p> <p>Students will complete retrieval exercises each lesson to review and recall knowledge from previous lessons and apply this knowledge to alternate scenarios to deepen understanding.</p> <p><b>Summative</b></p> <p>Students will complete a Teams based KO Test to summarise content.</p> <p>Students will develop essential knowledge in lessons and ‘bring it all together’, by implementing it into a challenging and motivational Photoshop based “design and create” task to apply application knowledge to produce a suitable product for a target audience meeting success criteria.</p>	<p>detect and correct errors in algorithms and programs</p> <p>We consider the importance of the target audience and purpose when designing and creating applications.</p> <p>We also build on Computer Science knowledge by revisiting programming elements and cyber security. This structure leads students into more project-based work as they continue into Year 9 and KS4. This will help transition students into KS4 Computer Science and BTEC DIT.</p> <p><b>Sequence and Progression:</b></p> <p><b>Binary and Networks</b> in HT1 linked in KS4 to Component 3 Digital Working Practices.</p>
<p><b>HT4</b></p>	<p>In this half term students will study a topic focused on:</p>	<p>Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise</p>	<p>Skills learned include:</p> <ul style="list-style-type: none"> <li>• Malware</li> <li>• Passwords</li> <li>• Cyber Crime</li> <li>• Encryption</li> </ul>	<p><b>Formative</b></p> <p>Students will complete retrieval exercises each lesson to review and recall knowledge from</p>	<p>It is also linked in KS4 to Computational Logic and Networks in Computer Science in Yr10 and Yr11.</p>

	<p><b>Cyber Security and Encryption</b></p>	<p>inappropriate content, contact and conduct, and know how to report concerns</p>	<ul style="list-style-type: none"> <li>• Legislation</li> </ul> <p>Draws on essential knowledge learned in Yr7</p>	<p>previous lessons and apply this knowledge to alternate scenarios to deepen understanding.</p> <p><b>Summative</b> Students will complete a Teams based KO Test to summarise content.</p> <p>Students will develop essential knowledge in lessons and ‘bring it all together’, by answering:</p> <p>“A messaging application wants to use encryption for their service. What is encryption and why might users of the service benefit from encryption?”</p>	<p><b>Cross Curricular Knowledge Connections</b> with Maths in Yr8 shapes and graphs and Yr9 graphs.</p> <p><b>Computer Graphics</b> is linked to V-Festival Graphics and user Interface.</p> <p>It is also linked in KS4 to Component 1 User Interfaces in KS4.</p> <p><b>Cyber Security and Encryption</b> is linked in KS4 to Component 3 Digital Working Practices.</p>
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<p><b>HT5 &amp; HT6</b></p>	<p>In this half term students will study a topic focused on:</p> <p><b>Kodu – Computer games coding</b></p>	<p>Understand computational thinking and how we use it to create software. Use correct syntax and programming techniques to create a working game. Understand variables and logic to make a successful piece of working software.</p>	<p>Instructions include:</p> <ul style="list-style-type: none"> <li>• Explanation of different coding syntax.</li> <li>• Understanding sequence, control, selection and iteration.</li> <li>• Utilise Variables and Data types to hold information within the game.</li> <li>• Focus on debugging system and logic errors.</li> </ul> <p>Draws on essential knowledge learned in HT6 of year 7</p>	<p><b>Formative</b></p> <p>Students will complete retrieval exercises each lesson to review and recall knowledge from previous lessons and apply this knowledge to alternate scenarios to deepen understanding.</p> <p><b>Summative</b></p> <p>Students will complete a Teams based KO Test to summarise content.</p> <p>Within this half term students will develop essential knowledge in lessons and ‘bring it all together’, by implementing it into a challenging and motivational Kodu based “design and create” task which challenges students to apply all of their knowledge of Kodu to create their own functional game.</p>	<p>It is also linked in KS4 to Systems Software in Computer Science in Yr11.</p>
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