

Programme of study for Year 10 Computer Science

Autumn (1 st term) Topic	Autumn (2 nd term) Topic	Spring (1 st term) Topic	Spring (2 nd Term) Topic	Summer (1 st term) Topic	Summer (2 nd term) Topic
<p>Component 1: 1.2.3– Units of data storage. Numbers Binary and HEX</p> <p>Component 2: Algorithms: Linear and Binary Search</p>	<p>Component 1: Characters Images and Sound</p> <p>Component 2:</p>	<p>Component 1: Compression</p> <p>Component 2: Programming fundamentals Boolean operators AND, OR and NOT</p>	<p>Component 1: Networks and Topologies.</p> <p>Component 2: Programming fundamentals</p>	<p>Component 1: Wired and wireless networks, protocols and layers</p> <p>Component 2: Producing robust programs. The Integrated development Environment (IDE)</p>	<p>Component 1: Network security: Threats to computer systems and networks. Identifying and preventing vulnerabilities</p> <p>Component 2: 2.3.2 Testing Selecting and using suitable test data:</p> <ul style="list-style-type: none"> o Normal o Boundary o Invalid o Erroneous <p>Students test and evaluate their projects</p>
End of term 1 evidence to cover: Sound knowledge of Binary in representing data		End of term 2 evidence to cover: What makes up a network and coding skills		End of year evidence to cover: Knowledge of Protocols, threats and testing code	
<p>Rationale for sequence: Simple introduction to Easiest standard algorithms and Representing numerical Data as 1's and 0's</p>	<p>Rationale for sequence: How all data is Represented using 1's and 0's</p>	<p>Rationale for sequence: How data can be stored more efficiently</p>	<p>Rationale for sequence: Introduction to Networking and retaining coding skills</p>	<p>Rationale for sequence: Looking at how data is transferred on a network. Keeping up coding skills and using the IDE more</p>	<p>Rationale for sequence: Keeping networks secure.</p>

				effectively for identifying errors.	
Home – Learning: Home learning related to the topic completed during the term.	Home – Learning: Home learning related to the topic completed during the term.	Home – Learning: Home learning related to the topic completed during the term.	Home – Learning: Home learning related to the topic completed during the term.	Home – Learning: Home learning related to the topic completed during the term.	Home – Learning: Home learning related to the next topic to be completed so that students get a chance to become familiar with the content.
Reading / High Quality Text: https://www.teach-ict.com/gcse_computing/ocr/214_representing_data/number/miniweb/pg2.php Relevant current news articles	Reading / High Quality Text: https://www.teach-ict.com/gcse_computing/ocr/214_representing_data/sound/miniweb/pg3.php Relevant current news articles	Reading / High Quality Text: https://teach-ict.com/2016/GCSE_Computing/OCR_J276/2_6_data_representation/compression/miniweb/index.php Relevant current news articles	Reading / High Quality Text: https://www.teach-ict.com/gcse_new/networks/topologies/miniweb/index.htm Relevant current news articles	Reading / High Quality Text: https://www.teach-ict.com/2016/GCSE_Computing/OCR_J276/1_5_to_topologies_protocols_layers/protocols_addressing/miniweb/index.php Relevant current news articles	Reading / High Quality Text: https://teach-ict.com/2016/GCSE_Computing/OCR_J276/1_6_network_security/intro_network_security/miniweb/index.php Relevant current news articles
Numeracy: Numbers Binary and HEX	Numeracy: Bit depth	Numeracy: Compression techniques	Numeracy: Bandwidth	Numeracy: Data packets	Numeracy: Data types, int, real/float
<p>Enrichment / opportunities to develop cultural capital (including careers, WRL and SMSC):</p> <p>Highlight opportunities and exhibitions in reasonable travel time. Use current news events to explore ethical, moral and legal issues.</p>					

Enrichment: **Think Computer Science** – hosted by Microsoft Research Cambridge, Imperial War Museum, Duxford, Cambridgeshire