



**St George's School**  
**Mathematics and Computing Faculty**  
**Year 9 Curriculum Map for COMPUTING**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p><b>THE BIG IDEAS &amp; KNOWLEDGE</b>  <i>Overview of topics or key questions</i></p>	<p><b>Binary</b>            Students will learn why Computers use binary. They convert between denary and binary and add binary numbers. Students will also learn that binary numbers are represented using different units of length and how binary numbers can be used to represent virtually anything. Finally they will study the advantages of compressing binary data.</p>	<p><b>Algorithms</b>            Students will learn to create the success criteria and basic plan for a problem. They will also be able to describe algorithms using flowcharts and use Boolean logic (AND, OR and NOT logic gates), how this is used to build computers and used alongside operators in programming. Finally, they will learn about arithmetic operators used in programming.</p>	<p><b>Basic Programming</b>            Students will learn about variables, data types and typecasting. They will also learn about programming constructs, such as sequence, selection and iteration, operators and comments.</p>	<p><b>Components</b>            Students study the basic components of a computer system, devices that connect to a computer, as well as internal components.  <b>Memory &amp; Storage</b>            Students study the types of memory used inside a computer and different storage devices and the technologies that are used.  <b>Operating Systems</b>            Students study different operating systems and why they are needed, and the basic functions of an operating system.</p>	<p><b>System Software</b>            Application and Utility software.  <b>Moral, Legal &amp; Environmental</b>            Students study how technology creates moral dilemmas, legislation regarding technology and how technology impacts the environment.  <b>HTML and CSS</b>            Students will learn how content can be represented in a web page and how the look of a web page can be altered.</p>	<p><b>Web Project</b>            Students will create a project using HTML &amp; CSS.</p>
<p><b>SKILLS &amp; STRATEGIES</b>  <i>Procedural knowledge, literacy and numeracy skills</i></p>	<ul style="list-style-type: none"> <li>Convert between 4-bit binary numbers and denary.</li> <li>Add 4-bit binary numbers.</li> <li>Convert a file size into different memory units.</li> <li>Recognize different file types and understand what this means.</li> </ul>	<ul style="list-style-type: none"> <li>Understand and create real world algorithms.</li> <li>Create flowcharts that describe an algorithm.</li> <li>Create a success criteria, basic plan and flowchart for a given problem.</li> <li>Work out logic problems.</li> <li>create truth tables for the AND, OR &amp; NOT logic gates.</li> </ul>	<ul style="list-style-type: none"> <li>Write block-based programs that utilise variables, arithmetic operators, logical operators, sequence, selection, and iteration.</li> <li>Develop a block-based program from a success criteria, basic plan and flowchart.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the purpose of: peripherals and whether they are an input or output; internal components and how they connect to other components; RAM, cache and ROM; secondary storage devices and the technology used; and OSs.</li> </ul>	<ul style="list-style-type: none"> <li>Determine if software is Application or Utility.</li> <li>Describe the purpose of various Utility software.</li> <li>Determine crimes committed using a computer.</li> <li>Discuss cultural and environmental issues surrounding new technology.</li> <li>create a web page using notepad.</li> </ul>	<ul style="list-style-type: none"> <li>Create a website given certain criteria.</li> </ul>

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>FEEDBACK</b> <i>Noteworthy tasks and assessments</i>	Topic assessments.	Topic assessments.  Paper 2 exam.	Topic assessments.	Topic assessments.	Topic assessments.  Assessment of NEA project.  Paper 1 exam.	Assessment of Web project.
<b>BREADTH</b> <i>Opportunities, trips, wider reading, cultural capital</i>	<a href="https://www.bbc.co.uk/bitesize/subjects/zvc9q6f">https://www.bbc.co.uk/bitesize/subjects/zvc9q6f</a>	<a href="https://www.bbc.co.uk/bitesize/subjects/zvc9q6f">https://www.bbc.co.uk/bitesize/subjects/zvc9q6f</a>	<a href="https://www.w3schools.com/python/default.asp">https://www.w3schools.com/python/default.asp</a>  <a href="https://www.harvardonline.harvard.edu/course/cs50-introduction-computer-science">https://www.harvardonline.harvard.edu/course/cs50-introduction-computer-science</a>	<a href="https://www.bbc.co.uk/bitesize/subjects/zvc9q6f">https://www.bbc.co.uk/bitesize/subjects/zvc9q6f</a>  <a href="https://www.w3schools.com/html/">https://www.w3schools.com/html/</a>  <a href="https://www.w3schools.com/css/default.asp">https://www.w3schools.com/css/default.asp</a>		
<b>KEY VOCABULARY</b> <i>Important words and phrases</i>	Binary Denary Bit Memory Nibble Byte Kilobyte Megabyte Gigabyte Compression	Algorithm Success Criteria Flowchart Boolean Logic gate AND OR NOT Boolean Operator Arithmetic operator	Programming Variable Integer Float String Boolean If Else For While Comments	Input Output Peripheral Component CPU BIOS RAM Cache ROM Primary Memory Secondary Storage Hard disk Magnetic Optical Flash Operating System Open Source Proprietary	Application Utility HTML CSS Act of Parliament	HTML CSS