

<b>Topic: 7.5 Binary &amp; Logic</b>				<b>Duration: 2 weeks</b>	<b>Composite: Test</b>	
<b>Key vocabulary:</b>	<b>Core knowledge questions</b>			<b>Powerful knowledge crucial to commit to long term memory</b>	<b>Links to previous and future topics</b>	
Binary denary Boolean Logic Sequencing Iteration Selection Condition Program Value Variable Logic Gate AND OR NOT	<ol style="list-style-type: none"> <li>1. What is binary? A number system that contains two symbols, 0 and 1. Also known as base 2.</li> <li>2. What is denary? The number system we are most accustomed to using. Known as base 10 (0-9)</li> <li>3. What is Boolean logic? A form of logical algebra which works only with two values, true or false.</li> <li>4. What is sequencing? Sequencing is the order in which instructions are processed</li> <li>5. What is iteration? Iteration is how programs repeat instructions.</li> <li>6. What is selection? Selection is how programs can be used when a decision needs to be made based on a condition.</li> <li>7. What is a logic gate? Circuit components which take several inputs, compare the inputs with each other, and provide a single output based on logical functions such as AND, OR and NOT.</li> <li>8. What is an AND gate? An AND gate takes two inputs and will give a positive output if both inputs are positive</li> <li>9. What is an OR gate? An OR gate takes two inputs and will give a positive output if either inputs are positive.</li> <li>10. What is a NOT gate? A NOT gate reverses the input given to it e.g. a 1 becomes 0</li> </ol>			<ul style="list-style-type: none"> <li>• Binary is the number system computers use to make calculations and decisions.</li> <li>• Denary is the number system humans use.</li> <li>• Binary values need to be converted to denary in order for humans to understand them</li> <li>• Boolean logic is how computers make decisions through the use of logic gates.</li> <li>• Logic gates are circuit components to help computers make decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Builds on skills gained from 7.3 Scratch &amp; 7.4 Python unit and uses the same concepts of Sequencing, selection and iteration.</li> <li>• Utilises computational thinking and skill builds ready for KS4 Computer Science.</li> </ul>	
<b>We will develop these skills:</b>						
<b>Impressive reading</b>	<b>Impressive speaking</b>	<b>Impressive writing</b>	<b>Resilience</b>	<b>Numeracy via:</b>	<b>Digital Literacy via:</b>	<b>Employability via:</b>
Follow instructions to understand Boolean logic	Articulating how computers make decisions.	Explaining and analysing how a logic gate works.	N/A	Converting binary to denary, and vice versa.	Learning how computers make calculations and decisions.	Utilising computational thinking skills and problem solving.