

Department:	Computing
Scheme of Learning Number:	1
Scheme of Learning Title:	Binary, Logic Gates and Truth Tables
Key Learning:	<p>Students will learn the sizes of data in bits. They will learn to convert between binary and decimal number systems with the possibility of also hexadecimal systems.</p> <p>Students will learn to use binary code and how to read an ASCII table to create coded messages to decipher.</p> <p>Students will then begin problem solving through the use of logic gates, and relating them to circuits and how to transfer them to truth tables.</p>
Assessment:	Students will be given a formal online assessment at the end of the rotation which will include multiple choice questions, scenarios and comparisons at the end of the scheme of learning. Students will be assessed throughout the project, through marking, peer assessment and self-assessment.
Key Words:	<p><b>Binary code</b> - system of representing numbers, letters, commands, images and sounds on a computer. It uses only two types of information to do this – 1 and 0</p> <p><b>Bit</b> - A bit (short for binary digit) is the smallest unit of data in a computer. A bit has a single binary value, either 0 or 1.</p> <p><b>Byte</b> - is a unit of digital information that most commonly consists of eight bits</p> <p><b>Logic gate</b> - is an elementary building block of a digital circuit. Most logic gates have two inputs and one output</p> <p><b>Truth table</b> - is a mathematical table used in logic, and helps us to understand the behaviour of logic gates. The table will show all the different possible input combinations and their outputs.</p>
Useful Websites:	<p><a href="http://games.penjee.com/binary-bonanza/">http://games.penjee.com/binary-bonanza/</a></p> <p><a href="http://forums.cisco.com/CertCom/game/binary_game_page.htm">http://forums.cisco.com/CertCom/game/binary_game_page.htm</a></p> <p><a href="http://www.bbc.co.uk/schools/gcsebitesize/design/electronics/logicrev2.shtml">http://www.bbc.co.uk/schools/gcsebitesize/design/electronics/logicrev2.shtml</a></p> <p><a href="http://www.bbc.co.uk/education/guides/zc4bb9q/revision/2">http://www.bbc.co.uk/education/guides/zc4bb9q/revision/2</a></p>
Ways to Support Your Child at Home:	Ask them to show you what binary code is, if they can explain and show you some examples you can play a couple of the games above.