

<b>Computing – Year 9</b>	
<b>Half term 1</b>	<p><b>Under the hood of the computer</b></p> <p>Students look at the fundamental parts of computer systems. They identify the different hardware types and whether they are input devices, output devices, storage devices or processing devices.</p> <p>They then look at the different types of software including an overview of an operating system and application software.</p>
<b>Half term 2</b>	<p><b>Under the hood of the computer - Bits and Bytes</b></p> <p>Students continue the theme of looking at the internal structure of computers but this time looking at how computer systems communicate using binary. They convert 4 bit and 8 bit strings from binary to decimal and decimal to binary.</p> <p>They finally look at file sizes and how this is measured in bits, bytes, kilobytes and megabytes.</p>
<b>Half term 3</b>	<p><b>Thinking like a Computer Scientist</b></p> <p>This unit allows students to understand how to create algorithms through the use of computational thinking. They first look at how Dr Snow used computational thinking; decomposition, pattern recognition, abstraction and hypothesis testing, in the Cholera outbreak in Soho in 1854.</p>
<b>Half term 4</b>	<p><b>Thinking like a Computer Scientist (continued)</b></p> <p>Students continue with computational thinking by looking at creating algorithms for problems. They then apply their knowledge of computational thinking to a similar problem in Africa.</p>
<b>Half term 5</b>	<p><b>Creating animations using programming</b></p> <p>In this unit students look at how algorithms are created to solve problems. They use Yenka to create an algorithm using different dance moves. They then use flowcharts to design routines, create the routines and debug any errors that they encounter.</p>
<b>Half term 6</b>	<p><b>Files and Sounds</b></p> <p>Students look at how computers store files and write programs that allow saving and retrieving files. Sound files are explored and programs written to access sound files.</p>
<b>Homework expectations</b>	<p>Students will research key words to allow them to understand how they are used in programming. They will revise for tests throughout the units and use SmallBasic outside of lessons to help reinforce programming techniques.</p> <p>Microsoft SmallBasic is a free program offered by Microsoft and installable to most Windows operating systems.</p>
<b>By the time you finish key stage 3 you'll be...</b>	<p>Able to explain the basic programming constructs. Students will know the structure of programs and use these to create algorithms to solve problems.</p>