

Computing – Year 7	
Half term 1	<p>Under the hood of the computer</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>
Half term 2	<p>Under the hood of the computer - Bits and Bytes</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>
Half term 3	<p>Thinking like a Computer Scientist</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>
Half term 4	<p>Thinking like a Computer Scientist (continued)</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>
Half term 5	<p>Creating animations using programming</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>
Half term 6	<p>Creating animations using programming (continued)</p> <p>Building on their basic algorithms, students develop their dance routines using more advanced programming techniques including; True/False conditions, loops, functions and procedures, nested selection statements and IF, THEN, ELSE statements.</p>
Homework expectations	<p>Students will investigate internal parts of computer systems and calculate binary conversions. They will research computational thinking and apply this in class work. Students are also expected to develop more advanced routines using advanced algorithms.</p>
By the time you finish key stage 3 you'll be...	<p>Competent in ICT and digital literacy skills as well as having a basic understanding of computer programming.</p>