



Computer Science: Curriculum for Sept 2021

Key Stage 3: Year 8 (Sept 2021/2022)



Term	Topic	Covered in lessons	Intent	NC Focus 1	NC Focus 2	Assessment
HT1	E-Safety And	<ul style="list-style-type: none"> ESafety 	Provide students with an understanding of how digital systems work, what they are made up of and the principle concepts of how computers work	Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]	<p>Understand how instructions are stored and executed within a computer system</p> <p>Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</p> <p>Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</p>	End of Topic test
HT2	Flowol (BEBRAS CHALLENGE)	<ul style="list-style-type: none"> Flowcharts Sequencing Sensors Subroutines Actuators and Variables 	Further embedding Computational Thinking skills using real life examples, which forms the basis of computer science so that students can approach real world problems logically.	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems		Task Based
HT3	*Understanding Computers	<ul style="list-style-type: none"> Elements of a Computer The CPU Storage Devices 	Students should understand the basics of the internal components of a computer and how they interact with each other to process data	understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]	<p>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</p> <p>understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</p>	End of Topic test
HT4	App Design	<ul style="list-style-type: none"> Introduction to Apps Home screen and navigation Adding files, links and images 	Students to understand sequencing using real life applications	Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users	Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	Project Based
HT5	App Design	<ul style="list-style-type: none"> Using map functions Programming with Blockly 	Students to understand sequencing using real life applications	Same as above	Same as above	Project Based
HT6	Python Programming Basics	<ul style="list-style-type: none"> The Basics Loops Lists Introducing Functions Functions returning values 	Build on the programming skills learnt in Year 7 programming	Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem	Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	Project and Portfolio based