

Order of delivery	7.0 – ESafety and Network Intro	7.1 – Under the hood of a computer	7.2 – Think like a computer scientist	7.3 – Drawing and manipulating shapes (Scratch and Python)	7.4 – Creating an animation (Scratch)	7.5 – Back to the future	7.6 - Spreadsheets	End of Year Exam
Key Questions	What is grooming? What is sexting? What does grooming look like? What are the signs that someone is being groomed? How do you report inappropriate content?	What is a bit? Why do computers use binary? What is the difference between an input and output device? What is binary?	What is an algorithm? Can you explain the key vocab in this unit? Where was the source of the 1854 Cholera outbreak?	What is a pattern? What is a sequence? Why do we use repetition in algorithms? How do you find the external angle of a regular polygon?	Why are some tasks suitable for robots/humans? How can we make the code more efficient?	Who was Alan Turing? What was he famous for? Who was TBL? What was he famous for? Who was George Boole? What was he famous for? Who was Charles Babbage? What was he famous for? How can we sort data? How do computers sort data? What are logic gates? What are the different logic gates? What is a cipher? What is decoding?	What is a formula? Why do we use spreadsheets? What is a cell reference? What does formatting mean? Where are the * and keys on the keyboard? What operators do we use in arithmetic? What's the difference between a row and column? How do we add new rows/columns? What is profit? What is the difference between a label/variable/rule? What is the difference between a formula/function? What is orientation? What different charts/graphs are you aware of?	
Knowledge	Sexting, grooming, passwords security, consequences of loss of personal information	To know the different units of measurement used in computer systems (e.g. bit, nibble, byte, etc). An understanding of computing machines from the past. To know the names of hard devices. To understand that all computers use I/P/O.	To know that algorithm is used before programs are written. To be able to use correct terminology for computational thinking terms.	Understand patterns are repeated shapes. Understand sequences are patterns of numbers. Understand what coordinates are. To understand the benefits of reusing code (e.g. procedures)	To know how to move sprites around a stage. To know how to change backgrounds/costumes. To know how to repeat sequences. To know how to write efficient code.	Understand who Turing was - understand how messages can be encrypted using ciphers. - understand how to use a cipher key to decipher codes. -To understand who Sir Tim-Berners-Lee is -To understand what the World Wide Web (WWW) is and how it differs from the Internet -To understand how the WWW was born. - To know how to carry out bubble sort.	Understand different ways to format spreadsheets, To know why formulas are used. To know why cell references are used. To know what buttons represented mathematical operators. To know the difference between a row and column. To know how to add rows/columns to an existing spreadsheet. To know how to work out the amount of profit. To know the difference between a label/variable/rule. To know what SUM,MAX,MIN,AVERAGE and IF do. To know there are 2 types of orientation. To know the difference between bar/pie/line graph & their appropriate uses.	
Skills	Identify risks and signs of grooming. Recommending good password security. Identifying personal and private data	Convert 4 bit binary to denary and vice versa. To calculate the number of bits in a given file size. To be able to categorise devices as input/output/memory, etc. To be able to identify the input/output or processing for a given function machine.	To be able to create algorithms for given scenarios. To carry out a pattern identification task (e.g. map task)	Identify patterns and sequences. Identify coordinates and plot on a graph. Write algorithms to make shapes. Write algorithm including the use of iteration. Calculate external angles of regular polygons. Using a block based programming environment to create shapes and patterns. Using text based programming (Python) create shapes and patterns. To be able to write programs that use procedures. To be able present work clearly and effectively using IT skills (e.g. Publisher/Word etc)	Identify tasks suitable for robots/humans. Design a dance routine for a block based programming language. Create procedures for code to make programs more efficient.	To decipher and cipher code breaking tasks -To complete logic gates and truth tables -To carry out bubble sorts -To write a simple web page	Demonstrate different formatting techniques. To be able to use formulas accurately. To use cell references in a calculation. To be able to use mathematical operators in a spreadsheet. To be able to add rows/columns to a spreadsheet. To use a spreadsheet to calculate profit/loss. Identify which cells contain a label/variable/rule. To be able to use functions appropriately/accurately in a spreadsheet. To select a suitable orientation before printing. To create a bar/line/pie chart and recommend the most appropriate for a given scenario.	
Vocab	Sexting, Passwords, Bullying, Cyberbullying, Digital footprint, Social networking, Consequences, Personal information, Non-personal information, Grooming, Paedophile	<ul style="list-style-type: none"> •Data •Compute •Input device •Memory •Storage device •Processor •Output device •Central processing unit (CPU) •Decimal •Binary •Bit •Byte 	Decompose Algorithm Computational thinking Data Information Pattern identification Hypothesis testing Model Abstraction Generalisation	<ul style="list-style-type: none"> •Abstraction •Generalisation •Geometrical shapes •Decomposition •Algorithm •Coordinates •Iteration •Graphical programming 	Algorithm Dry run Execute Sequence Iteration Procedure Function Procedural abstraction Selection	Cipher Decipher Encryption WWW Internet Hypertext CPU Logic Logic Gates	Cell references Fill handle Formula Revenue Auto Sum Costs Profit Variables Model Rows Columns Cell Chart Wizard	
Assessment	N/A	N/A	End of Unit 1 and 2 Assessment (30 mins) Skills and Knowledge	N/A	End of Unit 3 and 4 Assessment (30 mins) Skills and Knowledge	End of unit assessment - application of skills	End of unit assessment - application of skills	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Link to Progress Path</p>	<p>Students should be taught to understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.</p>	<p>Understand the hardware components that make up computer systems, and how they communicate with one another and with other systems. Understand and use binary digits, in order to convert between binary and decimal, and to perform simple binary addition.</p>	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p>	<ul style="list-style-type: none"> •Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions •Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems <ul style="list-style-type: none"> •Create and debug simple programs •Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts •Use sequence, selection, and repetition in programs; work with variables and various forms of input and output •Use two or more programming languages, one of which is textual, each used to solve a variety of computational problems. 	<ul style="list-style-type: none"> •Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions •Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs •Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems <ul style="list-style-type: none"> •Create and debug simple programs •Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts •Use sequence, selection, and repetition in programs; work with variables and various forms of input and output •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 such as lists, tables or arrays; design and develop modular programs that use procedures or functions 	<p>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. understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming</p>	<p>design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. 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</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Learning skills</p>	<p>Share their views and experiences of ICT, considering the range of its uses and its significance to individuals, communities and society. Exploring the ways that ICT can be used to communicate, collaborate and share ideas on a global scale, allowing people to work together in new ways and changing the way in which knowledge is created.</p>	<p>Literacy: Speaking & Listening: Listen with understanding and respond sensitively & appropriately, ask as well as answer questions Reading: Read fluently, accurately and with understanding Numeracy: Maths: Simple arithmetic and function machines Other: Science: Electrical circuits and circuit components History: Bletchley Park, the history of electronic computing SMSC: Understanding how communities and societies function.</p>	<p>Literacy: Students ask and answer questions. They synthesise and adapt what they learn from their reading and use techniques such as skimming, scanning and annotation effectively. Students will write for a range of purposes including to interpret, evaluate, explain, analyse and explore. Numeracy: Time and distance measurement, speed calculation, data handling. Other: History: Medicine and health and early epidemiology Geography: Map work and plans Science: Pathogenic microbes, cause and prevention of disease, epidemiology</p>	<p>Literacy: Students ask and answer questions. They synthesise and adapt what they learn from their reading and use techniques such as skimming, scanning and annotation effectively. Students will write for a range of purposes including to interpret, evaluate, explain, analyse and explore. Numeracy: Maths: Geometrical shapes, angles and coordinates Other: Art: Shape, pattern and colour SMSC: PSHE/Every Child Matters: The world around us</p>	<p>Literacy: Students ask and answer questions. They synthesise and adapt what they learn from their reading and use techniques such as skimming, scanning and annotation effectively. Students will write for a range of purposes including to interpret, evaluate, explain, analyse and explore. Numeracy: Maths: Geometrical shapes, angles and coordinates Other: Art: Shape, pattern and colour</p>	<p>Literacy: Students ask and answer questions. They synthesise and adapt what they learn from their reading and use techniques such as skimming, scanning and annotation effectively. Students will write for a range of purposes including to interpret, evaluate, explain, analyse and explore. Numeracy: Maths: Geometrical shapes, angles and coordinates Other: Art: Shape, pattern and colour SMSC: PSHE/Every Child Matters: The world around us</p>	<p>Literacy: During this unit of work, students will have opportunities to cover the following: •Use talk as a tool for clarifying ideas •Identify and report the main points emerging from discussion •Use appropriate reading strategies to extract particular information Numeracy: •Calculating: e.g. means, averages, time •Interpretations of graphs, charts and tables: e.g. comparing different data samples, looking for trends, etc Explore issues, events or problems from different perspectives. Assess themselves and others, identifying opportunities and achievements. Communicate theory learning in relevant ways for different audiences. Invite feedback and deal positively with praise, setbacks and criticism. Discuss issues of concern, seeking resolution where needed.</p>	
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