

Computing Key Knowledge – Teach Computing

Little Explorers – 1 year cycle					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<u>Marvellous Explorers!</u>	<u>Exploring the Future!</u>	<u>Animal Explorers!</u>	<u>Exploring Growing!</u>	<u>Buildings!</u>	<u>Go and Explore</u>
Awesome Autumn – Pumpkin Soup	Winter Warmers – Let's make an igloo!	Springtime – Rabbit Run	Springtime – Seed Sequencing	Boats ahoy! Build a boat	Busy Bodies – Parts of our body
I can follow a set of pictorial instructions. I can sequence events.	I can break a task down into smaller parts. I can predict which methods will be useful. I can explain my ideas.	An algorithm is a set of instructions. I can plan a sequence of events. I can test an algorithm.	I can sequence pictures in the correct order. I can follow pictorial instructions.	I can follow simple instructions. I can break down steps into a sequence. I can debug my design to improve it.	I can recognise similarities and differences. I can focus on what is important.

Big Explorers - Cycle A					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<u>All Aboard!</u>	<u>Fire, Fire!</u>	<u>Up, up and away!</u>	<u>We are Explorers</u>	<u>How does your garden grow?</u>	<u>Africa</u>
Computer Systems and Networks Y1: Technology around us (CS)	Creating Media Y1: Digital Writing (IT)	Programming A Y1: Moving a robot(CS)	Data and Information Y2: Pictograms (IT)	Creating Media Y1: Digital Painting (IT)	Programming B Y1: Programming Animations (CS)
To use a mouse, I click and drag. A keyboard is used for typing. Documents are opened from files..	Backspace removes letters. The font size, shape and type can be changed. Undo removes changes.	Combining commands creates a sequence. Debugging is finding errors in a program. Predicting allows me to think about my desired outcome.	Data can be recorded in a tally chart. A computer displays data in different formats. A pictogram can be created digitally.	Art can be created digitally. Shapes and lines can be created with different tools. Colour choices can be changed easily.	Commands are chosen for different purposes. Commands must be joined together. A sprite is an object that is controlled by an algorithm.
Big Explorers – Cycle B					
<u>Moon Zoom</u>	<u>Banquets, Balls and Battles</u>	<u>Tremendous China!</u>	<u>Robin Hood and our Forest</u>	<u>Victorians</u>	<u>Beach combers</u>
Computer Systems and Networks Y2: IT around us (CS)	Creating Media Y2: Digital Music (IT)	Programming A Y2: Robot Algorithms (CS)	Data and Information Y1: Grouping Data (IT)	Creating Media Y2: Digital Photography (IT)	Programming B Y2: Programming Quizzes (CS)
IT is part of everyday life. Computers work alongside other electronic devices. IT must be used safely.	A digital device can have speakers. Music is a sequence of notes. A rhythm can be created on a digital device.	Instructions must be clear and easy to follow. A program of sequences controls the way a Beebot moves. Testing and debugging improves a program.	Objects can be counted digitally. Labels are used to show the contents of a group. Objects can be grouped depending on the question.	Digital devices can take photographs. Photos can be taken either landscape or portraits. Lighting can affect how a photograph is taken.	The start command must always be included in a sequence. The background can be edited to improve the design of a program. An algorithm is created by joining multiple blocks.

Philosophers - Cycle A					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<u>Rainforests</u>	<u>Ancient Egyptians</u>	<u>Ancient Greeks</u>	<u>Trade and Food</u>	<u>Saxons</u>	<u>Vikings</u>
Computer Systems and Networks Y3: Connecting Computers (CS)	Creating Media Y3: Desktop Publishing (IT)	Programming A Y3: Sequencing Sounds (CS)	Data and Information Y3: Branching Databases (IT)	Creating Media Y3: Stop-frame Animation (IT)	Programming A Y4: Repetition in shapes (CS)
A computer network is formed when two or more computers are connected. A computer only processes information it has been given (input). When the computer has processed the information, it sends it back out (output).	Page orientation means either portrait or landscape. Information and images can be copied and pasted onto a document. Text boxes and images can be organised into different layouts.	Commands in scratch are shown as blocks. Sound commands can be used when sequencing. A number of sprites can be programmed at the same time.	A tree structure can be used to arrange objects. Objects can be separated based on attributes. Information can be arranged in a branching database.	Stop-motion animation involves moving a model a tiny amount at a time. Small changes are needed for each frame to make it effective. Skinning helps me to see which frame was before.	Changing the value of a command gives a different outcome. Algorithms can be changed to text-based language. A loop is used to repeat a set of commands.
Philosophers – Cycle B					
<u>Stone Age</u>	<u>Bronze Age to Iron Age</u>	<u>Angry Earth</u>	<u>Romans</u>	<u>Europe</u>	<u>Mountains</u>
Computer Systems and Networks Y4: The Internet (CS)	Creating Media Y4: Photo editing (IT)	Programming B Y3: Events and actions (CS)	Creating Media Y4: Audio production (IT)	Data and Information Y4: Data Logging (IT)	Programming B Y4: Repetition in games (CS)
The internet is a network of networks. The World Wide Web contains websites and web pages. Content on the internet is created and owned by individuals.	Cropping an image changes the size of the photo. Colour effects can be added to edit a photo. Parts of a photo can be copied, edited or removed.	Movement can be programmed through commands. Additional features can be added into a program. The size of a sprite can be altered to suit the design.	A computer records audio. Recordings can be edited through trimming unwanted sounds. A person who records the sound is the one who decides who can use it.	Data can be gathered over time. A datalogger contains sensors that collect information from the environment. Questions can be created based on logged data.	A snippet of code can be modified instead of the whole thing. A count-controlled loop repeats a sequence a set number of times. An infinite loop repeats a sequence continuously.

Trailblazers - Cycle A					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<u>Are we alone, is there enough?</u>		<u>War and Conflict</u>		<u>Rights and Responsibilities</u>	
Computer Systems and Networks Y5 (CS)	Creating Media Y5: Vector Drawings (IT)	Programming A Y5: Selection (CS)	Data and Information Y5: Flat file databases (IT)	Creating Media Y6: 3D Modelling (IT)	Programming B Y6: Sensing – Micro:bit (CS)
A computer system features inputs, processes and outputs. Search results can be influenced and ranked. There are a range of different search engines.	Elements added to a vector drawing are objects. Alignment grids improve the consistency of the drawing. Objects are layered, the order of these layers can be changed.	A conditional loop is either true or false. A microcontroller responds to an input. If a condition is met, an action can start.	A database consists of records and each record contains 'fields'. Records can be grouped. Fields can be searched by asking and answering questions.	3D shapes can be created on a computer. 3D shapes can be modified in a number of ways: resized, recoloured, position. Placeholders create holes in 3D objects.	A program can be transferred to a controllable device. A micro:bit can have different physical inputs. A conditional statement can be used to compare a variable to a value.
Trailblazers – Cycle B					
<u>Medicine Through Time</u>		<u>Brilliant Britain!</u>		<u>Crime and Punishment</u>	
Computer Systems and Networks Y6 (CS)	Creating Media Y5: Video Editing (IT)	Programming B Y5: Selection (CS)	Creating Media Y6: Webpage creation (IT)	Data and Information Y6: Spreadsheets (IT)	Programming A Y6: Variables – Crumbles (CS)
Computers use addresses to access websites. Data is transferred across the internet and networks in packets. Files can be shared over the internet to allow for collaborative work.	A video is a visual media format. Different camera angles help to make a video more effective. Videos can be reshot and edited.	Selection can be used within an infinite loop to check a condition. Selection directs the flow of a program. A conditional statement connects a condition to an outcome.	Websites are written in HTML. Copyright is used to protect original work. Pages are linked together by navigation paths.	Each cell can be individually formatted. Formulas can be used to produce calculated data. A formula can be duplicated and applied to multiple cells.	A variable is something that is changeable. A variable has a name and a value. An event can be used to set a variable.