

Computing				
Long Term Overview				
	Unit 1	Unit 2	Unit 3	Unit 4
Y1	Technology Around us	Beebots: routes and moving	Data and information: grouping data	Digital writing: using a keyboard
Y2	Computing systems and networks – IT around us	Beebots- robot algorithms	Data and information – Pictograms	Creating media - Digital music
Y3	Connecting computers	Programming a- using scratch and sequencing sounds	Data and Information - Branching databases	Creating Media - Desktop Publishing
Y4	The internet	Audio production	Photo editing	Programming B- scratch
Y5	Computer systems	Video production	Data information	Programming- Scratch and micro:bits
Y6	Computing systems and networks - Communication and collaboration	Creating media – Web page creation		Programming B - Sensing movement- Microbits

Computing	
EYFS preparation for National Curriculum	
Understanding the World: Children explore how technology is used in their everyday environment and begin to understand how different devices and toys work. Through practical experiences, they develop curiosity, problem-solving skills and an awareness of how technology can be used to create, communicate and find information.	<i>EYFS adapt their curriculum offer based on children's interests throughout the year so this is not all they will cover in People Culture and Communities. The curriculum links below support progression across their time with us and ensure that they have positive language experiences from the beginning that enable them to progress onto the National Curriculum.</i> In the EYFS, children are introduced to computing through continuous provision, exploration and play. They are given opportunities to explore a range of computing apparatus, including hardware and software, based on their interests and developing understanding. These experiences help prepare children for the National Curriculum in Team 1 by developing their early understanding of technology, simple instructions, digital creativity and online safety. Learning Objectives <u>Computer Science</u>

				- Explore Bee-Bots and other moving toys. - Give a simple instruction to a moving toy and verbally explain the instruction given. - Identify moving toys within the environment. - Begin to understand that some toys are controlled by computers or technology, while others are not. - Explore different types of computer hardware and technology. <u>Information Technology</u> - Find letters on a keyboard that correspond to sounds and phonics they have been taught. - Use a painting programme to create pictures and images. - Use iPads to take photographs of the environment. - Begin to understand that technology can be used to create, record and share information. <u>Digital Literacy</u> - Begin to understand that the internet can be used to find information. - Recognise when an unfamiliar image, website or video appears on a device and know to tell a trusted adult. Key Vocabulary Computer Science: technology, computer, hardware, instruction, command, sequence, direction, forward, backward, turn, move, Bee-Bot, robot, control. Information Technology: keyboard, key, letter, screen, iPad, camera, photograph, image, paint programme, software, create, record. Digital Literacy: internet, online, information, website, image, video, device, safe, trusted adult, unfamiliar.
Essential Learning				
	Computer Science	Digital Literacy	Information Technology	
Y1	<u>Beebots routes and moving</u> Children can: - Give simple instructions to make a Beebot move - Plan and test a short sequence of commands - Spot and fix mistakes in my Beebot program	<u>Technology around us and using computers safety</u> Children can: - Recognise and name different types of technology around them - Name the main parts of a computer and know what they do - Use technology safely and know who to tell if something worries them Circle Time Focus: What is the internet?	<u>Data and information and Digital writing: using a keyboard</u> Children can: - Sort objects or information into groups - Find and use information that has been organised - Use a keyboard and mouse to type, change and delete text	

		Who helps us stay safe online? What should we do if something upsets or confuses us?	
Key Vocabulary			
	Beebots: Small floor robots that can follow instructions to move around. Commands: The actions you tell a Beebot to do (like move forward or turn). Instructions: A list of commands that tell the Beebot what to do. Algorithm: A set of steps or instructions to solve a problem or complete a task. Program: When you put instructions into a Beebot so it can follow them. Predict: To say what you think will happen before you test your program. Debug: To find and fix mistakes in your program so it works correctly.	Technology: Things people make to help them do tasks (like computers, tablets, or washing machines). Computer: A machine that stores and uses information; it can be used for learning, playing, or creating. Mouse: A small tool you move with your hand to control the pointer on a screen. Keyboard: A set of keys you press to type letters, numbers, and symbols into the computer. Safe : Acting in a way that protects you when using technology or the internet. Internet – A place on computers where we can find games, videos, and information. Safe adult – A grown-up you trust who helps keep you safe (like a teacher or parent). Online – Using the internet on a device like a tablet or computer.	Group: To sort things that are the same in some way (like by colour or size). Data: Information we collect (like how many red cars there are). Search: To look for something specific in a group of information. Keyboard: The part of the computer with buttons (keys) for typing letters and numbers. Keys: The buttons you press to type. Type: To press keys to write on the screen. Text: Words or letters written on the screen.
Y2	<u>Beebots- robot algorithms</u> Children can: - Create a set of instructions (an algorithm) for a Beebot - Predict what will happen when the Beebot program runs - Find and fix problems in the Beebot program (debugging)	<u>Computing systems and networks</u> Children can: - Name examples of information technology they have seen in school and at home - Explain how IT helps people in their jobs and daily life - Talk about how to use IT responsibly.	<u>Pictograms and Creating music- digital music</u> Children can: - Collect and sort data using clear rules (attributes) - Use a computer to create and share their data using a graph or pictogram - Use digital rules to create a piece of music - Experiment with sounds and patterns to create different effects in music
Key Vocabulary			

	Instructions – Steps that tell the Beebot what to do. Sequence – The order the instructions are given in. Algorithm – A set of steps or instructions to complete a task. Prediction – A guess about what will happen when the program runs. Debug – To find and fix mistakes in the program.	Information Technology (IT): Machines and programs we use to find, share, or create information (like computers, tablets, printers). Computer: A machine that stores and uses information; it can help us write, search, and play. Device: A piece of technology like a phone, laptop, or tablet. <i>(Optional but useful for broad understanding)</i> Responsible: Making good choices when using technology (e.g., asking for help, being kind, taking breaks).	Pictogram: A simple chart that uses pictures to show data. Data: Information we collect (like how many people like apples). Attribute: A feature we use to sort things (like colour, size, or shape). Pattern: A repeated sound or group of sounds. Pitch: How high or low a sound is. Tempo: How fast or slow the music is. Create: To make something new, like your own music.
Y3	<u>Connecting computers and Using scratch and sequencing sounds</u> Children can: - Explain how digital devices work using inputs, processes and outputs - Describe what a computer network is and name devices that are part of one - Use Scratch to create a sequence of commands that make sounds - Test, improve and debug a Scratch project to make it work as planned	<u>Staying Safe Online (Passwords + Beyond)</u> <i>(They have already learned about passwords in computing – this session builds on wider online safety.)</i> Children can: - Understand that staying safe online means more than just having a strong password. - Recognise what personal information is and why it should be kept private. - Know what to do if someone asks for private information online.	<u>Creating media- desktop publishing and Branching databases</u> Children can: - Use font size, colour and images to suit the purpose of their document - Arrange text and images to make a clear and attractive layout - Explain how the design of a document changes depending on what it's for - Use yes/no questions to sort information using attributes - Create branching database on a computer to sort objects or information - Explain how or when a branching database might help in real life
Key Vocabulary			
	Digital Device: A machine that uses information (like a tablet, computer, or phone). Input: What goes into a computer (like typing on a keyboard or clicking a mouse)	Password: A secret combination of letters and numbers used to protect access to accounts. Private Information: Personal data that should not be shared online, including home address, phone number, and school name.	Font: The style and size of the writing on a computer. Purpose: The reason you are making something (e.g., a poster to inform or a cover to advertise).

	Process: What the computer does with the input. Output: What comes out (like text on a screen or sound from speakers). Network: A group of devices connected so they can share information. Command: A single instruction you give to the computer (e.g. “play sound”). Sequence: A list of commands in order. Algorithm: A step-by-step set of instructions to solve a problem. Debug: To find and fix mistakes in your code.	Online Safety: The practice of protecting oneself from risks and threats when using the internet.	Layout: How text and images are arranged on the page. Orientation: The way a page is positioned: tall (portrait) or wide (landscape). Landscape: A page that is wider than it is tall. Portrait: A page that is taller than it is wide. Attribute: A quality or feature we use to describe or sort something (e.g. colour, size). Branching Database: A way to sort information by answering yes/no questions. Decision Tree: A diagram that helps you make choices by asking questions one at a time.
Y4	<u>Programming B- scratch</u> and <u>The internet</u> Children can: - Use loops, including count-controlled and infinite, to modify animations and control behaviour in code. - Design and create a simple game using repetition effectively. - Understand what a network is and how it connects computers and devices. - Know that the World Wide Web is part of the internet and helps us access information. - Use a browser to explore websites and discuss whether information is reliable. - Understand the impact of false information and how to stay safe online.	<u>The internet and recognising the Impact of Sharing Pictures Online</u> Children can: - Recognise what accurate and honest online content looks like. - Understand that not everything online is true and explain what misinformation is. - Know what copyright and ownership mean, and when permission is needed to share things. - Talk about how to stay safe when sharing or seeing information online. - Recognise that sharing pictures online can affect others’ feelings and privacy. - Know that once something is shared online, it’s hard to take back. - Learn strategies for safe sharing and asking permission.	<u>Audio production and Photo editing</u> Children can: - Identify input devices (e.g., microphones) and output devices (e.g., speakers) used with digital sound. - Understand digital audio ownership and explain copyright rules when using existing sounds. - Create and edit their own soundtracks using digital tools. - Open, save, and manage audio files confidently. - Change and edit pictures using digital tools (e.g., cropping, layering). - Understand and discuss the ethical use of images and the impact of visual misinformation. - Recognise when images may have been altered to mislead or deceive.
Key Vocabulary			

Programming – Writing instructions to tell a computer what to do. Code – The words and symbols we type to give the computer instructions. Loop – A set of instructions that repeats again and again. Repetition – When a set of instructions is repeated in a program, often using loops. Infinite Loop – A loop that keeps going and never stops. Count-controlled Loop – A loop that repeats a set number of times. Modify – To change something in your code to make it work differently. Algorithm – A list of steps to solve a problem or complete a task. Debug – To find and fix mistakes in your code. Internet – A global network that connects computers and lets people share and find information. Network – A group of computers and devices connected together to share information. Security – Ways to keep information and devices safe from harm or people trying to steal data. Web Page – A single page of information you can view on the internet. World Wide Web (WWW) – A part of the internet that has websites and web pages we can visit. Browser – A program we use to look at web pages on the internet (like Chrome or Safari).	Accurate – Information that is correct and true. Honest – Telling the truth and not trying to trick people. Misinformation – Wrong or false information that might be shared by mistake or on purpose. Ownership – When something belongs to someone. Permission – When you ask and get the okay to use or share something. Copyright – A rule that means you can't copy or use someone else's work without permission. Security – Ways to protect information and keep it safe online. Sharing – Sending or showing something to other people. Adverts – Messages that try to get you to buy something or believe something. Permission (noun): Asking someone if you can do something. Privacy (noun): The right of a person to keep their personal information secret. Consequences (noun): The result or effect of an action. Empathy (noun): The ability to understand and share the feelings of others.	Audio – Sounds we can hear, like music or voices. Input – A device that helps us record sounds, like a microphone. Output – A device that plays sounds, like speakers or headphones. Edit – To change or fix sounds to make them better. Save – To keep your work so you can use it later. Image – A picture or photo you can see on a screen. Edit – To change or improve a picture. Crop – To cut part of a picture away so only the important part shows. Layer – To put one picture or part of a picture on top of another.
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Y5	<u>Programming scratch, micro:bits and Computer systems</u> - Use 'if... then... else...' selection statements to control outcomes in programs. - Design, build, and refine a quiz using Scratch. - Understand how to use inputs, outputs, and variables in code. - Begin programming with a micro:bit and transfer code between screen and device. - Identify how information moves between devices in a system. - Explain inputs, processes, and outputs in real-world examples. - Understand how search engines find and rank web content. - Use search skills and judge the reliability of online information.	<u>Circle time- Online Reliability and Safety</u> - Understand that not everything online is reliable or true. - Recognise the importance of keeping personal data safe (phone numbers, addresses, logins). - Know how to share videos responsibly (who can see them, what's appropriate).	<u>Video production and Data information (databases)</u> - Plan, film, and edit short videos using digital tools. - Import, trim, split, and reorder clips to improve their videos. - Add simple audio and visual effects. - Review and export their final videos to share with others. - Use a flat-file database to organise and retrieve data. - Search, filter, and sort records based on criteria. - Create graphs and charts from database information. - Present findings clearly using database tools.
Key Vocabulary			
	Algorithm – A step-by-step plan to solve a problem. Program – A set of instructions a computer follows. Debug – To find and fix mistakes in your code. Input – Something that gives data to the computer (e.g., pressing a button). Output – What the computer does in response (e.g., showing a message). Selection – Choosing what the program does based on a condition (like "if... then...").	Reliable: Information that can be trusted and has been verified. Personal Data: Information about you that could identify you, including name, address, and phone number. Content: Any information available online, such as videos, articles, or posts. Fact-checking: The process of verifying the accuracy of information.	Video – A recording that shows moving pictures and sound. Audio – The sound part of a video. Storyboard – A plan that shows what happens in each scene. Clip – A small part of a video. Edit – To change a video to improve it. Export – To save and finish your final video. Database – A place where data is stored and organised. Sort – To arrange the data (e.g., A–Z or by number).

	Variable – A container in your code that stores information, like a score. Micro:bit – A small computer you can program to do simple tasks. Search Engine – A tool like Google that helps find web pages. Reliability – How much you can trust online information.		Graph – A picture that shows data clearly (e.g., bar chart).
Y6	<u>Programming- sensing movement- Micro:bits, computer system and networks</u> - Apply sequence, repetition, selection, and variables in micro:bit programs. - Design and create programs using sensors and conditions. - Debug and refine code in both digital and physical environments. - Work independently to complete a structured final project. - Explain how data is transferred over the internet using IP and packets. - Understand how digital collaboration tools work. - Complete group tasks using shared online spaces. - Know how to communicate appropriately and safely online.	<u>Circle time- Exploring Online Communication and Digital Content</u> - Explore different online communication methods (emails, messaging, video calls, social media). - Consider privacy and safety when communicating online. - Understand copyright and respect ownership when creating digital content (e.g., websites).	<u>Creating media- webpage creation</u> - Design and build a simple website for a purpose using Google Sites. - Use layout and navigation features to create a clear, useful site. - Add text, images, and media responsibly (considering copyright). - Evaluate their work and embed useful links or resources.
Key Vocabulary			

Micro:bit – A small computer that can be programmed to sense and react. Sensor – A part of the micro:bit that detects movement or light. Input – Data the program receives (e.g., button press or sensor reading). Output – What the micro:bit does (e.g., show lights or send sound). Sequence – Steps that run in order, one after the other. Selection – A choice in the code using “if... then...” to decide what happens. Variable – A space in the program that stores changing information. Debug – To fix errors or problems in your code. Packet – A small chunk of data sent over the internet. IP Address – A unique number that identifies each device online. Communication – Sharing information between people or devices. Collaboration – Working together online using shared digital tools. Private – Information meant to be kept safe and not shared with others	Communication: The process of sharing information between people through speaking, writing, or using some other medium. Privacy: The right to keep personal information private and secure from others. Copyright: A law that gives the creator of original work exclusive rights to its use and distribution. Digital Footprint: The trail of data you leave on the internet while using online services. Scams: Fraudulent schemes designed to con people out of their identity or money online.	Website – A collection of linked web pages on the internet. Navigation – How users move around a website. Browser – A program like Chrome or Edge used to view websites. Copyright – A rule that protects someone’s original work from being copied. Media – Images, videos, or sounds used on a web page. Evaluate – To review and improve your work.
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