Computing Overview

EYFS	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Once a week computing session in small group with support from Mrs Bhuvan Characteristics of effective learning: Playing & Exploring Active learning Creating & Thinking	Use of the internet and E-Safety I-pads Design pictures using simple programmes Access online books – home learning	Use of the internet and E-Safety I-pads Design pictures using simple programmes Access online books – home learning	Use of the internet and E-Safety Design pictures using simple programmes Camera I-pads/computers Use a range of simple programmes independently. Use 2Go & 2Count. Education City Camera	Use of the internet and E-Safety Design pictures using simple programmes Camera I-pads/computers Use a range of simple programmes independently. Use 2Go & 2Count. Education City Camera	Use of the internet and E-Safety I-pads/computers Use a range of simple programmes independently. Use 2Go & 2Count. Use a word processing programme. Education City Access online books – home learning Camera	Use of the internet and E-Safety I-pads/computers Use a range of simple programmes independently. Use 2Go & 2Count. Use a word processing programme. Education City Access online books – home learning Camera
KS1	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cycle A *(2022 – 2023* *2024 - 2025* *2026 - 2027)*	**Online Safety** **Bee-Bots (Y1) – Programming** Recognise cause and effect when pressing buttons on a Bee-Bot.	**Online Safety** **Digital Imagery (Y1) – Creating media** Plan a pictorial story using photographic images in sequence.	**Online Safety** **Introduction to Data (Y1) – Data handling** Represent animal-themed data in different ways, using	**Online Safety** **Scratch Jr (Y2) – Programming** Explore a new application independently.	**Online Safety** **Stop-Motion (Y2) – Creating media** Create a flip book animation.	**Online Safety** **International Space Station (Y2) – Data handling** Describe and explain how astronauts'

	Discuss and demonstrate how the Bee-Bot works. Record video ensuring everyone is in the shot. Give a number of clear instructions in sequence. Program a Bee-Bot to reach a destination. Identify and correct mistakes in their programming.	Explain how to take clear photos. Take photos using a device. Edit photos by cropping, filtering and resizing. Search for and import images from the internet. Explain what to do if something makes them uncomfortable online. Organise images on the page, orientating where necessary.	objects and technology. Log in and use mouse and keyboard skills to navigate the computer. Represent the same data as a pictogram and a table or chart. Collect data about minibeasts using a tally chart and represent their data digitally. Click and drag objects to sort data using a branching database. Consider the types of input that would be used to gather different forms of data when designing an invention.	Explain what the blocks on ScratchJr do and use them for a purpose. Recognise a loop in coding and why it is useful. Use a code to create an animation of an animal moving. Use code to follow *and* create an algorithm. Program code to run 'on tap'. Explain the role of the blocks in a program they have created.	Decompose a story into smaller parts to plan a stop motion animation. Create stop motion animations with small changes between images.	survival needs are met aboard the ISS. Identify and digitally draw items which fulfil basic human needs when aboard the ISS. Read the correct temperature on a thermometer. Design a display showing everything that needs to be monitored by sensors on the ISS. Create an algorithm that addresses all plants' needs. Explain how space exploration can benefit life on Earth. Read data to identify whether a planet might be habitable

Cycle B *(2023 – 2024* *2025 – 2026* *2027 – 2028)*	**Online Safety** **Improving Mouse Skills (Y1)– Computing systems and networks** Use computers more purposefully Log in and navigate around a computer Drag, drop, click and control a cursor using a mouse Use software tools to create art on the computer	**Online Safety** **Algorithms unplugged (Y1) – Programming** Explain what an algorithm is. Write clear algorithms. Follow an algorithm. Explain what inputs and outputs are. Create an achievable program. Decompose a design into steps. Identify bugs in an algorithm and how to fix them.	**Online Safety** **Rocket to the Moon (Y1)-Skills showcase** Use a computer to make a list Explain the benefits of making a list on the computer Use a basic range of tools on graphics editing software to design a rocket Sequence instructions Follow instructions to build their model rocket Input data about their rockets into a table or spreadsheet	**Online Safety** **What is a computer? (Y2) – Computing systems and networks** Name some computer peripherals and their function. Recognise that buttons cause effects. Explain that technology follows instructions. Recognise different forms of technology. Design an invention which includes inputs and outputs. Explain the role of computers in the world around them.	**Online Safety** **Algorithms and Debugging (Y2) – Programming** Decompose a game to predict the algorithms. Give a definition for 'decomposition'. Write clear and precise algorithms. Create algorithms to solve problems. Use loops in their algorithms to make their code more efficient. Explain what abstraction is.	**Online Safety** **Word Processing (Y2) – Computing systems and networks** Explain which are the home row keys and how to find them for typing. Use the spacebar and backspace correctly. Type and make simple alterations to text using buttons on a word processor. Search for, import and alter appropriate images for a text document. Modify text in a document. Use copy and paste to copy text from one document to another.

						Explain what information is safe to be shared online.
LKS2	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cycle A *(2022 – 2023* *2024 - 2025* *2026 - 2027)*	**Microsoft word** **PowerPoint** **Online safety: Year 4** What happens when I search online? How do companies encourage us to buy online? Fact,opinion or belief What is a bot? What is my #TechTimetable like?	**Investigating weather** What's the weather? – logging data Design a weather stations Design an automated machine Understand satellites and weather forecasts Presenting forecasts	**Creating media: Website design** Google Sites skills Book review web page Creating a web page Planning my website Creating my website	**Collaborative learning** Teamwork Sharing a document Slide presentations Google Forms Shared spreadsheets	**Programming 2: Computational thinking** What is computational thinking? Decomposition Abstraction and pattern recognition Algorithm design Applying computational thinking	**Journey inside a computer** Inputs and outputs Building a paper laptop Following instructions Computer memory Dismantling a tablet
Cycle B *(2023 – 2024* *2025 - 2026* *2027 - 2028)*	**Online safety: Year 3** Beliefs, opinions and facts on the internet When being online makes me upset Sharing of information	**Networks and the internet** Understand what a network is Understand a file's journey	**Video trailers** Planning a book trailer To take photos or videos to tell a story	**Data handling: Comparison cards databased** Understand records, fields and data	**Programming scratch** Explore a programming application Using loops repetitively	**Further coding with scratch** Recall key features of scratch reminder Identifying what code does

	Rules of social media	Explain a website's journey Explore the role of routers Understanding packets	To learn to Edit the trailer To add Transitions and text To evaluate video editing	Compare paper vs computerised databases To sort, filter and interpret data To represent data in different ways To sort data for a purpose	Program an animation Program a Story Program a game	Understand what a variable is Making a variable Use knowledge of variable to create a times tables project
UKS2	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cycle A (2022 – 2023 2024 – 2025 2026-2027)	**Online safety 1** Discuss a range of issues online that can leave pupils feeling sad, frightened, worried or uncomfortable and can describe numerous ways to get help. Explain how sharing online can have both positive and negative impacts. Be aware of how to seek consent from others before sharing material online and can describe how content can still be shared online even if it is set to private. Explain what a 'digital reputation' is and what it can consist of.	**Computing systems and networks** Searching basics Inaccurate information Web quest Information poster Web crawlers	**Big Data 1** Understand why barcodes and QR codes were created. Create (and scan) their own QR code using a QR code generator website. Explain how infrared can be used to transmit a Boolean type signal. Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets.	**Big Data 2** Recognise that data can become corrupted within a network and that data sent in packets is more robust, as well as identify the need to update devices and software. Recognise differences between mobile data and WiFi and use a spreadsheet to compare and identify high-use data activities and low-use data activities. Make links between the Internet of Things	**Computer systems and networks with history of computers** Explain that codes can be used for a number of different reasons and decode messages. Explain how to ensure a password is secure and how this works. Create a simple poster with information about Bletchley Park including the need to build electronic	**Skills showcase**- Inventing a product-chocolate bar video advert using CAD **Online safety-transition recap before Year 6/7**

	Understand the importance of capturing evidence of online bullying and can demonstrate some of these methods on the devices used at school. Describe ways to manage passwords and strategies to add extra security such as two-factor authentication. Explain what to do if passwords are shared, lost, or stolen. Describe strategies to identify scams. Explain ways to increase their privacy settings and understand why it is important to keep their software updated.		Take real-time data and enter it effectively into a spreadsheet. Presenting the data collected as an answer to a question. Recognising the value of analysing real-time data. Analyse and evaluate transport data and consider how this provides a useful service to commuters.	and Big Data and give a basic example of how data analysis/analytics can lead to improvement in town planning. Explain ways that big Data or IoT principles could be used to solve a problem or improve efficiency within the school and prepare a presentation about their idea, considering the privacy of some data. Present their ideas about how Big Data/IoT can improve the school and provide feedback to others on their presentations	thinking machines to solve cipher codes. Explain the importance of historical figures and their contribution towards computer science. Present information about their historical figure in an interesting and engaging manner.	
Cycle B *(2023 – 2024 2025 – 2026 2027 – 2028)*	**Online safety** Understand that passwords need to be strong and that apps require some form of passwords. Recognise a couple of the different types of online communication and know who to go to if they need help with	**Research- computing systems and networks: search engines** Explain what a search engine is, suggesting several search engines to use and explain	**Programming1: Music** Iterate ideas, testing and changing throughout the lesson. Explain what the basic commands do:	**Data Handling: Mars Rover 1** Identify some of the types of data that the Mars Rover could collect (for example, photos). Explain how the Mars Rover transmits the	**Creating Media: Stop motion animation** Create a toy with simple images with a single movement**.** Create a short stop motion with small	**Online safety- transition recap before Year 6/7**

	any communication matters online. Search for simple information about a person, such as their birthday or key life moments. Know what bullying is and that it can occur both online and in the real world. Recognise when health and wellbeing are being affected in either a positive or negative way through online use. Offer a couple of advice tips to combat the negative effects of online use.	how to use them to find websites and information. Suggest that things online aren't always true and recognise what to check for. Explain why keywords are important and what TASK stands for, using these strategies to search effectively. Recognise the terms 'copyright' and 'fair use' and combine text and images in a poster. Make parallels between book searching and internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank.	'play', 'slee'p, '2.times do'. Explain how their program links to the theme. Include a loop in their work. Correct their own simple mistakes. Explain their scene in the story. Link musical concepts to their scene. Include a live loop and explain its function. Use samples effectively to enhance music. Code a piece of music that combines a variety of structures. Use loops in their programming. Recognise that programming music is a way to apply their skills.	data back to Earth and the challenges involved in this. Read any number in binary, up to eight bits. Identify input, processing and output on the Mars Rovers. Read binary numbers and grasp the concept of binary addition. Relate binary signals (Boolean) to a simple character-based language, ASCII.	changes between images. Think of a simple story idea for their animation then decompose it into smaller parts to create a storyboard with simple characters. Make small changes to the models to ensure a smooth animation and delete unnecessary frames. Add effects such as extending parts and titles. Provide helpful feedback to other groups about their animations	