Dewhurst St Mary Computing Long Term Plan

	Autumn	Spring	Summer
EYFS	**Learning Journey** **All About Me & Transport**	**Learning Journey** **People who help us & Animal World**	**Learning Journey** **Growing/Life Cycles & Once upon a time**
	Our Computing scheme for the EYFS involves play-based, unplugged (no computer) activities that focus on building children's listening skills, curiosity and creativity and problem solving. However, technology is part of their world and therefore used in the following ways : • taking a photograph with a camera or tablet • searching for information on the internet • playing games on the interactive whiteboard • exploring an old typewriter or other mechanical toys • using a Bee-bot • watching a video clip • listening to music • using computers or tablet software to be creative Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in Key Stage 1 Computing and all that it demands.		
	Computing systems and networks	**Programming 1**	**Programming 2**
	<u>Using a computer</u> Learning about the main parts of a computer and how to use the keyboard and mouse. Learning how to log in and out.	<u>All about instructions</u> The children learn to receive and give instructions and understand the importance of precise instructions.	<u>Programming Bee-Bots</u> Children learn about directions, experiment with programming a Bee-bot/Blue-bot and tinker with hardware.
		Computing systems and networks	**Data handling**
		<u>Exploring hardware</u> Tinkering and exploring with different computer hardware and learning to operate a camera.	<u>Introduction to data</u> Children sort and categorise data and are introduced to branching databases and pictograms.

Year 1	Computing systems and networks	Skills Show Case	Data Handling
	Improving Mouse Skills Learning how to log in and navigate around a computer, developing mouse skills, learning how to drag, drop, click and control a cursor to create works of art inspired by Kandinsky and self-portraits.	Rocket to the Moon Developing keyboard and mouse skills through designing, building and testing individual rockets by creating a digital list of materials, using drawing software and recording data	Introduction to Data Learn what data is and the different ways that it can be represented and developing an understanding of why data is useful, how it can be used and ways in which it can be gathered and recorded both by humans and computer
	Programming 1	Programming 2	Creating Media
	Algorithms unplugged This unplugged unit requires no computers so that algorithms, decomposition and debugging are made relatable to familiar contexts, such as dressing up and making a sandwich, while learning why instructions need to be very specific	Bee-bots Developing early programming skills using either the Bee:Bot or virtual Bee:Bot	Digital Imagery Using creativity and imagination to plan a miniature adventure story and capture it using developing photography skills. Learn to enhance photos using a range of editing tools as well as searching for and adding other images to a project, resulting in a high-quality photo collage showcase.
	Year 1 Online Safety Learning about online safety, including using useful tips to stay safe when online; how to manage feelings and emotions when someone or something has upset us online; learning about the responsibility we have as online users; exploring the idea of a 'digital footprint'		

Year 2	Computing Systems and Networks 1	Computing Systems and Networks 2	Creating Media
	What IS a computer? When picturing a computer, thoughts are often of a screen, mouse and keyboard. This unit explores exactly what a computer is by identifying and learning how inputs and outputs work, how computers are used in the wider world and designing their own computerised invention	Word Processing Learn about word processing and how to stay safe online as well developing touch typing skills. Introduce important keyboard shortcuts, as well as simple editing tools within a word processor including: bold, italics, underline and font colour as well as how to import images	Stop Motion Storyboarding and simple animation creation using either tablet devices or devices with camera
	Programming 1	Programming 2	Data Handling
	Algorithms and debugging This combination of unplugged and plugged-in activities develop an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops	Programing: ScratchJr Explore what 'blocks' do, using the app 'ScratchJr,' by carrying out an informative cycle of predict > test > review, programme a familiar story and an animation of an animal, make their own musical instrument by creating buttons and recording sounds and follow an algorithm to record a joke	International Space Station The International Space Station (ISS) is a fascinating real-world setting for teaching how data is collected, used and displayed as well as the scientific learning of the conditions needed for plants and animals, including humans, to survive
	Year 2 Online Safety Learning about online safety, including: what happens to information posted online; how to keep things private online; who we should ask before sharing online; describing different ways to ask for, give, or deny permission online		

Year 3	Computing Systems and Networks	Computing Systems and Networks	Creating Media
	Networks and the Internet Introduction to the concept of networks, learning how devices communicate. Identifying components, learning how information is shared and exploring examples of real-world networks. Options for both Google and Microsoft schools.	Emailing Learning how to send emails with attachments and how to be a responsible digital citizen by thinking about the contents of what is sent	Video Trailers Developing filming and editing video skills through the storyboarding and creation of book trailers
	Programming	Computing Systems and Networks	Data Handling
	Programming: Scratch Building on the use of the 'ScratchJr' application in Year 2, progress to using the more advanced computer-based application called 'Scratch', learning to use repetition or 'loops' and building upon skills to program; an animation, a story and a game	Journey inside a computer Assuming the role of computer parts and creating paper versions of computers helps to consolidate an understanding of how a computer works, as well as identifying similarities and differences between various models	Comparisons Cards Using the theme of a 'Comparison cards game' (based on the popular game, Top Trumps), to understand what a database is by learning the meanings of records, fields and data. Further exploration will lead to the development of the ideas of sorting and filtering
	Year 3 Online Safety Learning about online safety: 'fake news', privacy settings, ways to deal with upsetting online content, protecting our personal information on social media		

Year 4	Computing Systems and Networks	Creating Media	Programming
	Collaborative Learning Working collaboratively in a responsible and considerate way as well as looking at a range of collaborative tools	Website Design Children develop their research, word processing, and collaborative working skills whilst learning how web pages and web sites are created, exploring how to change layouts, embed images and videos and link between pages	Computational Thinking Plugged and unplugged activities to develop the four areas of computational thinking
	Programming	Skills Show Case	Data Handling
	Further Coding with Scratch Using variables in coding	HTML Editing the HTML and CSS of a web page to change the layout of a website and the text and images	Investigating the Weather Researching and storing data using spreadsheets; designing a weather station that gathers and records data; learning how weather forecasts are made and using green screen technology to present a weather forecast
	Year 4 Online Safety Learning how to navigate the internet in an informed, safe and respectful way		

Year 5	Computing Systems and Networks	Data Handling	Creating Media
	Search Engines Using keywords and phrases, identifying inaccurate information, learning page rank works as well.	Mars Rover 1 Data transfer and binary code	Stop Motion animation Storyboarding ideas, taking photographs and editing to create a video animation
	Programming	Programming	Skills Show Case
	Programming Music Applying programming skills to create sounds and melodies leading to a battle of the bands performance	Micro:bit The meaning and purpose of programming	Mars Rover 2 3D design skills
	Year 5 Online Safety 7 Potential online dangers and safety		

Year 6	Programming	Computer Systems and Handling Data	Data Handling
	Intro to Python Using the programming language of Python	Bletchley Park Code breaking and password hacking	Big Data 2 Data usage and smart schools
	Creating Media	Data Handling 1	Skills Show Case
	History of Computers Children write, record and edit radio plays set during WWII, look back in time at how computers have evolved and design a computer of the future.	Big Data Barcodes, QR codes and RFID	Inventing a Product Designing a product, pupils: evaluate, adapt and debug code to make it suitable and efficient for their needs; use a software program to design their products; create their own websites and video adverts to promote their inventions
	Year 6 Online Safety Learning how to navigate the internet in an informed, safe and respectful way		