Computing Curriculum Overview

	Autumn	Spring	Summer
Y6	Online safety Computing systems and networks (Bletchley Park and the history of computers)	Programming (Microbit/ Python) Creative media (Building a 3d model)	Data Handling (Big data)
Y5	Online safety Computing systems and networks (Search engines)	Data Handling (Mars Rover) Creative media (Stop-Motion)	Programming (Music)
Y4	Online safety Computing systems and networks (Collaborative learning)	Programming (Scratch coding) Data Handling (Investigating weather)	Programming (Computational thinking)
Y3	Online safety Computing systems and networks (Networks)	Computing systems and networks (Journey inside a computer) Creating media (Video trailers)	Programming (Scratch coding)
Y2	Online safety Computing systems and networks (What is a computer?)	Programming (Algorithms and debugging) Data handling (International Space Station)	Programming (Scratch Jr.)
Y1	Online safety Computing systems and networks (Improving mouse skills)	Programming (Algorithms unplugged) Creating media (Digital imagery)	Programming (Bee-Bot)
YR	Computing systems and networks (Using a computer)	Programming (All about Instructions) Computing systems and networks (Exploring systems and networks)	Data Handling (Introduction to data)

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Y6	Online safety: Learning how to navigate the internet in an informed, safe and respectful way. Bletchley Park and the history of computers: Exploring code-breaking at Bletchley Park, historical figures in computing, the evolution of computers, designing a computer of the future and creating an audio advert, this unit combines lessons from archived content while retaining the progression and skills previously covered in two separate units.	Introduction to Microbits: Clipping blocks together in a program and predicting what will happen while making connections with previously used programming interfaces. Children create animations, recognise inputs/outputs, choose appropriate blocks, and break programs down into smaller steps. 3D modelling: Learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, learners will examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building.	Big data: Understanding about the use of big data including barcodes, QR codes, infrared, and RFID technologies. Children will create and scan their own QR codes, manipulate real-time data in spreadsheets, and present their findings. They also analyse transport data to understand its usefulness to commuters.
Y5	Online safety: Learning about potential online dangers and safety. Understanding how search engines work and developing searching skills to find relevant and accurate information online.	Microbit: Identifying some of the types of data that the Mars Rover collects and explaining how the Mars Rover transmits the data back to Earth. Children will read binary numbers, and understand binary addition as well as identifying input, processing and output on the Mars Rovers. 3D Modelling: Storyboarding ideas, taking photographs and editing to create a video animation.	Big data: Applying programming skills to create sounds and melodies leading to a battle of the bands performance.
Y4	Online safety: Learning how to navigate the internet in an informed, safe and respectful way. Search engines: Working collaboratively in a responsible and considerate way as well as looking at a range of collaborative tools.	Mars Rover: Creating a simple script in Scratch, using decomposition and understanding what variables are, this unit provides new lessons, teacher skills videos and pupil videos that support confident coding in the classroom. Stop-Motion: Researching and storing data using spreadsheets, designing a weather station which gathers and records data and learning how weather forecasts are made. Children use tablets or digital cameras to present a weather forecast.	Music: Developing the four areas of computational thinking through a range of plugged and unplugged activities.
Y3	Online safety: Learning about online safety: 'fake news', privacy settings, ways to deal with upsetting online content, protecting our personal information on social media. Collaborative Learning: Introduction to the concept of networks, learning how devices communicate. From identifying components, learn how information is shared and deepen this understanding by exploring examples of real-world networks	Scratch coding: 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. Investigating weather: Developing filming and editing video skills through the storyboarding and creation of book trailers.	Computational thinking: Using loops to program an animation, a story and a game in Scratch, this unit provides new lessons, teacher skills videos and pupil videos that support confident coding in the classroom.

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Y2	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. What is a computer? Exploring what a computer is by identifying and learning how inputs and outputs work. Understanding how computers are used in the wider world, children design their own computerised invention.	Algorithms and debugging: Developing an understanding of what algorithms are, how to program them and how they can be developed to be more efficient through a range of unplugged and plugged-in activities. International Space Station: Learning how astronauts survive on the ISS, including identifying necessary items, designing sensor displays and exploring habitable planets. Children gain an understanding of living in space and how space exploration can benefit life on Earth.	Scratch Jr: Exploring block coding using either MakeCode to plan and build a program or Scratch Jr to follow and create an algorithm.
Y1	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'. Improving mouse skills: Knowing 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.	Algorithms unplugged: Using an unplugged approach 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. 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.	Bee-bot: Developing early programming skills using either the Bee:Bot or virtual Bee:Bot.
YR	Using a computer: Learning about the main parts of a computer and how to use the keyboard and mouse. Logging in and out	All about instructions: The children learn to receive and give instructions and understand the importance of precise instructions Exploring systems and networks: Tinkering and exploring with different computer hardware and learning to operate a camera	Introduction to data: Children sort and categorise data and are introduced to branching databases and pictograms