

Curriculum Map Computing

CYCLE A	1	2	3	4	5	6
Reception	Computing through continuous provision Exploring hardware Tinkering and exploring with different computer hardware and learning to operate a camera.	Computing through continuous provision Exploring hardware Tinkering and exploring with different computer hardware and learning to operate a camera.	All about instructions The children learn to receive and give instructions and understand the importance of precise instructions.	Programming Bee:bot Children learn about directions, experiment with programming a Bee:bot/Blue:bot and tinker with hardware.	Introduction to data Children sort and categorise data and are introduced to branching databases and pictograms.	Using a computer Learning about the main parts of a computer and how to use the keyboard and mouse. Logging in and out.
Y1 and Y2	Improving mouse skills 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. Online safety lessons – Year 1	Algorithms unplugged 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. Online safety lessons – Year 1	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. Safer Internet Day	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. Online safety lessons – Year 1	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. Online safety lessons – Year 1	Word processing Learning about word processing and how to stay safe online as well developing touch typing skills. Introducing 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 Online safety lessons – Year 1
Y3 and Y4	Emailing Learning how to send and edit emails, add attachments and how to be a responsible digital citizen by thinking about the contents of what is sent. Online safety lessons – Year 3	Programming: Scratch Building on the use of the 'ScratchJr' application in Year 2, progressing to using the more advanced application called 'Scratch', learning to use repetition or 'loops' and building upon skills to program an animation, a story and a game. Online safety lessons – Year 3	Video trailers Developing filming and editing video skills through the storyboarding and creation of book trailers. Safer Internet Day	Website design Developing 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. Online safety lessons – Year 3	Further coding with Scratch Learning the basics of programming in Scratch, children will create a simple script, use decomposition and understand what variables are. Online safety lessons – Year 3	Computational thinking Developing the four areas of computational thinking through a range of plugged and unplugged activities. Online safety lessons – Year 3
Y5 and Y6	Micro:bit Clipping blocks together in a program and predicting what will happen while making connections with previously used programming interfaces.	Mars Rover 1 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	Mars Rover 2 Learning about pixels and binary, creating a pixel picture and saving a JPEG as a bitmap to understand the transfer of image data. Children will learn about	Bletchley Park Discovering the history of Bletchley Park, historical figures, and computer science. Children learn about code-breaking and password hacking as well	History of computers Writing, recording and editing radio plays set during WWII, looking back in time at how computers have evolved and	Inventing a product Writing, recording and editing radio plays set during WWII, looking back in time at how computers have evolved and

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	Children create animations, recognise inputs/outputs, choose appropriate blocks, and break programs down into smaller steps. Online safety lessons - Year 5	read binary numbers, and understand binary addition as well as identifying input, processing and output on the Mars Rovers. Online safety lessons – Year 5	the ‘fetch, decode, execute’ cycle and its real-world applications while beginning to use 3D design tools. Safer Internet Day	as decoding messages. Children present information about historical figures. Online safety lessons – Year 5	designing a computer of the future. Online safety lessons – Year 5	designing a computer of the future. Online safety lessons – Year 5
CYCLE B	1	2	3	4	5	6
Reception	Computing through continuous provision Exploring hardware Tinkering and exploring with different computer hardware and learning to operate a camera.	Computing through continuous provision Exploring hardware Tinkering and exploring with different computer hardware and learning to operate a camera.	All about instructions The children learn to receive and give instructions and understand the importance of precise instructions.	Programming Bee:bot Children learn about directions, experiment with programming a Bee:bot/Blue:bot and tinker with hardware.	Introduction to data Children sort and categorise data and are introduced to branching databases and pictograms.	Using a computer Learning about the main parts of a computer and how to use the keyboard and mouse. Logging in and out.
Y1 and Y2	Bee:Bot Developing early programming skills using either the Bee:Bot or virtual Bee:Bot. Online safety lessons – Year 2	Digital imagery Using creativity and imagination to plan a miniature adventure story and capturing it using developing photography skills. Children 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. Online safety lessons – Year 2	Introduction to data Learning what data is and the different ways that it can be represented as well as 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 computers. Safer Internet Day	Scratch Jr Exploring what ‘blocks’ do, using the app ‘ScratchJr,’ by carrying out an informative cycle of predict > test > review. Programming a familiar story and an animation of an animal, children make their own musical instrument by creating buttons and recording sounds as well as following an algorithm to record a joke. Online safety lessons – Year 2	Stop-motion Storyboarding and simple animation creation using either tablet devices or devices with cameras. Online safety lessons – Year 2	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. Online safety lessons – Year 2
Y3 and Y4	Networks and the internet 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	Comparison cards databases Using the theme of a ‘Comparison card game’ to understand what a database is. Learning the meanings of records, fields and data. Further exploration will lead to the development of the ideas of sorting and filtering.	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.	Collaborative learning Working collaboratively in a responsible and considerate way as well as looking at a range of collaborative tools. Online safety lessons – Year 4	Investigating weather 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.	HTML Editing the HTML of a web page to change the layout of a website and the text and images. Online safety lessons – Year 4

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	Online safety lessons – Year 4	Online safety lessons – Year 4	Safer Internet Day		Online safety lessons – Year 4	
Y5 and Y6	Programming: Music Applying programming skills to create sounds and melodies leading to a battle of the bands performance. Online safety lessons – Year 6	Stop motion animation Storyboarding ideas, taking photographs and editing to create a video animation. Online safety lessons – Year 6	Search engines Research skills and finding accurate information. Safer Internet Day	Big data 1 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. Online safety lessons – Year 6	Big data 2 Understanding data usage through the use of mobile data vs WiFi, the Internet of Things, and big data. Identifying high/low data activities and preparing presentations on using Big Data/IoT to improve school efficiency while respecting privacy. Online safety lesson – Year 6	Introduction to Python Learning the fundamentals of the programming language of Python, they will test, change and explain what their program does. Children use loops and explain what repeats do and what the parts of the loop do while recognising that computers choose random numbers and decompose the program into an algorithm. Online safety lesson – Year 6