

Long-term plan: Computing

Overview (All year groups)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Online safety
EYFS: Reception	Set up continuous provision in your classroom:	Computing systems and networks 1: Using a computer	Programming 1: All about instructions	Computing systems and networks 2: Exploring hardware	Programming 2: Programming Bee-Bots	Data handling: Introduction to data	
Year 1	Computing systems and networks: Improving mouse skills	Programming 1: Commands unplugged	Skills showcase: Rocket to the moon	*New* Programming 2: Bee-Bots	Creating media: Digital imagery	Data handling: Introduction to data	Online safety: Year 1
Year 2	Data handling: International Space Station	Computing systems and networks 1: What is a computer?	Programming 1: Algorithms and debugging	Computing systems and networks 2: Word processing	Option 1: *New* Programming 2: MakeCode	Stop motion – Option 1: Using tablets	Online safety: Year 2
Year 3	Computing systems and networks 1: Networks	Programming: Scratch	Microsoft Office 365: Computing systems and networks 2: Emailing	Computing systems and networks 3: Journey inside a computer	Video trailers – Option 1: Using devices other than iPads	Data handling: Comparison cards databases	Online safety: Year 3
Year 4	Google: Computing systems and networks: Collaborative learning	Programming 1: Further coding with Scratch	Google: Creating media: Website design	Skills showcase: HTML	*New* Computational thinking	Data handling: Investigating weather	Online safety: Year 4
Year 5	*New* Programming 1: Music	Computing systems and networks: Search engines	Data handling: Mars Rover 1	*New* Programming 2: BBC micro:bit	Stop-motion animation – Option 1: Stop Motion Studio	Skills showcase: Mars Rover 2	Online safety: Year 5
Year 6	Computing systems and networks: Bletchley Park and the history of computers	Computing systems and networks: Exploring AI	Data handling 1: Big Data 1	*New* Programming: Exploring Python	Data handling 2: Big Data 2	Skills showcase: Inventing a product	Online safety: Year 6

Long-term plan: Computing

Overview - EYFS

EYFS:Reception

Autumn 1	Set up continuous provision in your classroom:	Autumn 2	<u>Computing systems and networks 1: Using a computer</u> 5 lessons Learning about the main parts of a computer and how to use the keyboard and mouse. Logging in and out
Spring 1	<u>Programming 1: All about instructions</u> 5 lessons The children learn to receive and give instructions and understand the importance of precise instructions	Spring 2	<u>Computing systems and networks 2: Exploring hardware</u> 5 lessons Tinkering and exploring with different computer hardware and learning to operate a camera
Summer 1	<u>Programming 2: Programming Bee-Bots</u> 5 lessons Children learn about directions, experiment with programming a Bee-bot/Blue-bot and tinker with hardware	Summer 2	<u>Data handling: Introduction to data</u> 5 lessons Children sort and categorise data and are introduced to branching databases and pictograms

Long-term plan: Computing

Overview - Key stage 1

Year 1

<p>Autumn 1</p>	<p><u>Computing systems and networks: Improving mouse skills</u></p> <p>6 lessons</p> <p>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.</p>	<p>Autumn 2</p>	<p><u>Programming 1: Commands unplugged</u></p> <p>6 lessons</p> <p>Exploring commands and instructions through a range of unplugged games and activities, the children develop an understanding of key programming vocabulary.</p>
<p>Spring 1</p>	<p><u>Skills showcase: Rocket to the moon</u></p> <p>6 lessons</p> <p>Developing keyboard and mouse skills by designing rockets, creating digital materials lists, using drawing software and recording data.</p>	<p>Spring 2</p>	<p><u>*New* Programming 2: Bee-Bots</u></p> <p>6 lessons</p> <p>Exploring commands, instructions and errors, the children program a Bee-Bot, practise debugging and begin thinking logically about sequencing.</p>
<p>Summer 1</p>	<p><u>Creating media: Digital imagery</u></p> <p>8 lessons</p> <p>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.</p>	<p>Summer 2</p>	<p><u>Data handling: Introduction to data</u></p> <p>6 lessons</p> <p>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.</p>
<p>Online safety</p>	<p><u>Online safety: Year 1</u></p> <p>6 lessons</p> <p>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'.</p>		

Long-term plan: Computing

Overview - Key stage 1

Year 2

<p>Autumn 1</p>	<p><u>Data handling: International Space Station</u> 6 lessons</p> <p>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.</p>	<p>Autumn 2</p>	<p><u>Computing systems and networks 1: What is a computer?</u> 6 lessons</p> <p>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.</p>
<p>Spring 1</p>	<p><u>Programming 1: Algorithms and debugging</u> 6 lessons</p> <p>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.</p>	<p>Spring 2</p>	<p><u>Computing systems and networks 2: Word processing</u> 6 lessons</p> <p>Learning about word processing, the children develop touch typing skills, explore how to stay safe online, use important keyboard shortcuts, import images into their documents and apply simple editing tools such as bold, italics, underlining and font colour.</p>
<p>Summer 1</p>	<p><u>Option 1: *New* Programming 2: MakeCode</u> 6 lessons</p> <p>Using 'MakeCode' to explore what blocks do, planning and building a program.</p>	<p>Summer 2</p>	<p><u>Stop motion – Option 1: Using tablets</u> 6 lessons</p> <p>Creating simple animations, storyboarding creative ideas and decomposing a story into small parts of action.</p>
<p>Online safety</p>	<p><u>Online safety: Year 2</u> 5 lessons</p> <p>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.</p>		

Long-term plan: Computing

Overview - Lower key stage 2

Year 3

<p>Autumn 1</p>	<p><u>Computing systems and networks 1: Networks</u> 6 lessons</p> <p>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</p>	<p>Autumn 2</p>	<p><u>Programming: Scratch</u> 6 lessons</p> <p>Exploring Scratch by programming an animation, the children learn key coding concepts, test and debug their work and develop their ability to improve digital projects through evaluation.</p>
<p>Spring 1</p>	<p><u>Microsoft Office 365: Computing systems and networks 2: Emailing</u> 6 lessons</p> <p>Children learn how to send emails with attachments and discover how to be a responsible digital citizen by thinking about the contents of what is sent. This unit is compatible with Microsoft devices.</p>	<p>Spring 2</p>	<p><u>Computing systems and networks 3: Journey inside a computer</u> 6 lessons</p> <p>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.</p>
<p>Summer 1</p>	<p><u>Video trailers – Option 1: Using devices other than iPads</u> 6 lessons</p> <p>Creating book trailers</p>	<p>Summer 2</p>	<p><u>Data handling: Comparison cards databases</u> 8 lessons</p> <p>By learning about records, fields and data, the children further explore the concepts of sorting and filtering.</p>
<p>Online safety</p>	<p><u>Online safety: Year 3</u> 6 lessons</p> <p>Learning about online safety: ‘fake news’, privacy settings, ways to deal with upsetting online content, protecting our personal information on social media.</p>		

Long-term plan: Computing

Overview - Lower key stage 2

Year 4

<p>Autumn 1</p>	<p><u>Google: Computing systems and networks: Collaborative learning</u> 6 lessons Google Docs, Slides, Form and Sheet</p>	<p>Autumn 2</p>	<p><u>Programming 1: Further coding with Scratch</u> 6 lessons Programming a game, the children use variables, sensors and if statements, debug their projects and evaluate their designs to improve functionality.</p>
<p>Spring 1</p>	<p><u>Google: Creating media: Website design</u> 6 lessons Website creation and Google Sites.</p>	<p>Spring 2</p>	<p><u>Skills showcase: HTML</u> 6 lessons Editing the HTML of a web page to change the layout of a website and the text and images.</p>
<p>Summer 1</p>	<p><u>*New* Computational thinking</u> 6 lessons Exploring computational thinking through unplugged activities and applying these to programming.</p>	<p>Summer 2</p>	<p><u>Data handling: Investigating weather</u> 6 lessons 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.</p>
<p>Online safety</p>	<p><u>Online safety: Year 4</u> 6 lessons Learning how to navigate the internet in an informed, safe and respectful way.</p>		

Long-term plan: Computing

Overview - Upper key stage 2

Year 5

<p>Autumn 1</p>	<p><u>*New* Programming 1: Music</u> 6 lessons</p> <p>Applying programming skills to plan and create a soundtrack for a particular genre.</p>	<p>Autumn 2</p>	<p><u>Computing systems and networks: Search engines</u> 6 lessons</p> <p>Understanding how search engines work and developing searching skills to find relevant and accurate information online.</p>
<p>Spring 1</p>	<p><u>Data handling: Mars Rover 1</u> 6 lessons</p> <p>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.</p>	<p>Spring 2</p>	<p><u>*New* Programming 2: BBC micro:bit</u> 6 lessons</p> <p>Exploring how to program the BBC micro:bit, the children create interactive projects using sensors, experiment with variables, apply conditional statements and develop an understanding of how coding brings digital devices to life.</p>
<p>Summer 1</p>	<p><u>Stop-motion animation – Option 1: Stop Motion Studio</u> 6 lessons</p> <p>Pupils learn how to create animations using Stop Motion Studio.</p>	<p>Summer 2</p>	<p><u>Skills showcase: Mars Rover 2</u> 6 lessons</p> <p>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 the 'fetch, decode, execute' cycle and its real-world applications while beginning to use 3D design tools.</p>
<p>Online safety</p>	<p><u>Online safety: Year 5</u> 6 lessons</p> <p>Learning about potential online dangers and safety.</p>		

Long-term plan: Computing

Overview - Upper key stage 2

Year 6

Autumn 1	<p><u>Computing systems and networks: Bletchley Park and the history of computers</u></p> <p>6 lessons</p> <p>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.</p>	Autumn 2	<p><u>Computing systems and networks: Exploring AI</u></p> <p>6 lessons</p> <p>Exploring what AI is and how it generates text, images and code, as well as learning about creating and refining prompts to improve AI responses while also considering the ethical implications of AI and its potential to replace human roles.</p>
Spring 1	<p><u>Data handling 1: Big Data 1</u></p> <p>6 lessons</p> <p>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.</p>	Spring 2	<p><u>Programming: Exploring Python</u></p> <p>6 lessons</p> <p>Exploring text-based programming with Python, the children learn how accurate syntax and nested loops control program outcomes and develop their ability to identify and fix syntax and logic errors through careful debugging.</p>
Summer 1	<p><u>Data handling 2: Big Data 2</u></p> <p>6 lessons</p> <p>Understanding data usage through the use of mobile data vs wi-fi, 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.</p>	Summer 2	<p><u>Skills showcase: Inventing a product</u></p> <p>6 lessons</p> <p>Designing a new electronic product and using CAD software to design appropriate housing for it. Developing skills in website design, video editing, and persuasive language to promote their product. Evaluating and adapting existing code, debugging programs, and searching for accurate information online.</p>
Online safety	<p><u>Online safety: Year 6</u></p> <p>7 lessons</p> <p>Learning how to navigate the internet in an informed, safe and respectful way.</p>		