



# **Workshop Priory C of E Primary Academy**

Curriculum Documents



Computing – Long Term Planning

# Priory Computing – Long Term Plan

The three strands from the National Curriculum:



Split in to five key areas

Computing systems and Networks	Programming	Creating media	Data handling	Online safety
Identifying hardware and using software, while exploring how computers communicate and connect to one another.	Understanding that a computer operates on algorithms, and learning how to write, adapt and debug code to instruct a computer to perform set tasks.	Learning how to use various devices — record, capture and edit content such as videos, music, pictures and photographs.	Ensuring that information is collected, recorded, stored, presented and analysed in a manner that is useful and can help to solve problems.	Understanding the benefits and risks of being online — how to remain safe, keep personal information secure and recognising when to seek help in difficult situations.

There are four units entitled ‘**Skills Showcase**’. These units give children the chance to combine and apply skills and knowledge gained, from a range of the five key areas above, to produce a specific outcome.

Priory Computing’s scheme of work has been designed as a spiral curriculum with the following key principles in mind:

- ✓ **Cyclical: Pupils revisit the five key areas throughout KS1 and KS2.**
- ✓ **Increasing depth: Each time a key area is revisited, it is covered with greater complexity.**
- ✓ **Prior knowledge: Upon returning to each key area, prior knowledge is utilised so pupils can build on previous foundations, rather than starting again.**

## Priory Computing - Long Term Plan

	Term 1		Term 2		Term 3		Ongoing e-Safety
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
EYFS		<b>Computing systems and networks</b>	<b>Programming</b>	<b>Computing systems and networks</b>	<b>Programming</b>	<b>Data Handling</b>	<b>Online Safety</b>
	Set up continuous provision	<b>Using a computer</b> Learning about the main parts of a computer and how to use the keyboard and mouse. Learning how to log in and out.	<b>All about instructions</b> The children learn to receive and give instructions and understand the importance of precise instructions.	<b>Exploring hardware</b> Tinkering and exploring with different computer hardware and learning to operate a camera.	<b>Programming Bee-Bots</b> Children learn about directions, experiment with programming a Bee-bot/Blue-bot and tinker with hardware.	<b>Introduction to data</b> Children sort and categorise data and are introduced to branching databases and pictograms.	
Year 1	<b>Computing systems and networks</b>	<b>Programming</b>	<b>Skills showcase</b>	<b>Programming</b>	<b>Creating Media</b>	<b>Data Handling</b>	<b>Online Safety</b>
	<b>Improving mouse skills (5 lessons)</b> Learning how to login and navigate around a computer; developing mouse skills; learning how to drag, drop, click and control a cursor to create works of art	<b>Algorithms unplugged (5 lessons)</b> Algorithms, decomposition and debugging are made relatable to familiar contexts, following directions, learning why instructions need to be specific	<b>Rocket to the moon (5 lessons)</b> Developing keyboard and mouse skills through designing, building and testing. Creating a digital list of materials, using drawing software and recording data.	<b>Programming Bee-Bots (5 lessons)</b> (Option 1: Bee-Bot) (Option 2: Virtual Bee-Bot) Introducing programming through the use of a Bee-Bot and exploring its functions.	<b>Digital imagery (5 lessons)</b> Planning a miniature story and capturing it using photography. Editing photos, searching for and adding images to a project.	<b>Introduction to data (5 lessons)</b> Learning what data is and the different ways it can be represented. Learning why data is useful and the ways it can be gathered and recorded.	<b>Online safety Y1 (4 lessons)</b> Learning how to stay safe online and how to manage feelings and emotions when someone or something has upset us.

<b>Year 2</b>	<b>Computing systems and networks</b>	<b>Programming</b>	<b>Computing Systems and Networks</b>	<b>Programming</b>	<b>Creating Media</b>	<b>Data Handling</b>	<b>Online Safety</b>
	<b>What is a computer? (5 lessons)</b>  Exploring what a computer is by identifying how inputs and outputs work and how computers are used in the wider world to design their own computerised invention	<b>Algorithms and debugging (5 lessons)</b>  Developing an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops.	<b>Word processing (5 lessons)</b>  Learning about word processing and developing touch typing skills. Introducing keyboard shortcuts and simple editing tools.	<b>ScratchJr (5 lessons)</b>  Exploring what 'blocks' do' by carrying out an informative cycle of predict > test > review. Programming a familiar story and make a musical instrument.	<b>Stop Motion (5 lessons)</b>  Learning how to create simple animations from storyboarding creative ideas.	<b>International Space Station (5 lessons)</b>  Learning how data is collected, used and displayed and the scientific learning of the conditions needed for plants and humans, to survive	<b>Online safety Y2 (5 lessons)</b>  Learning: how to keep information safe and private online; who we should ask before sharing things online and how to give, or deny permission online.
<b>Year 3</b>	<b>Computing systems and networks</b>	<b>Programming</b>	<b>Computing systems and networks</b>	<b>Computing systems and networks</b>	<b>Creating media</b>	<b>Data handling</b>	<b>Online Safety</b>
	<b>Networks and the internet (5 lessons)</b>  Learning what a network is, how devices communicate, how information is shared and identifying components.	<b>Scratch (5 lessons)</b>  Exploring the programme Scratch, following the predict > test > review cycle. Learning about 'loops' and programming an animation, story and game.	<b>Emailing (5 lessons)</b>  Sending emails with attachments and learning how to be a responsible digital citizen. Understanding what cyberbullying is.	<b>Journey inside a computer (5 lessons)</b>  Assuming the role of computer parts and creating paper versions of computers to consolidate understanding of how a computer works.	<b>Video trailers (5 lessons)</b>  Developing digital video skills to create trailers, with special effects and transitions.	<b>Top Trumps databases (5 lessons)</b>  Learning what a database is and their key components, such as records, fields and data. Further developing the ability to sort and filter data.	<b>Online safety Y3 (4 lessons)</b>  Learning: the difference between fact, opinion and belief; and how to deal with upsetting online content. Knowing how to protect personal information online.

Year 4	<b>Computing systems and networks</b>	<b>Programming</b>	<b>Creating media</b>	<b>Skills showcase</b>	<b>Programming</b>	<b>Data handling</b>	<b>Online Safety</b>
	<b>Collaborative learning (5 lessons)</b>  Learning how to work collaboratively and exploring a range of collaborative tools including Google Docs, Slides, Forms and Sheets.	<b>Further coding with Scratch (5 lessons)</b>  Exploring Scratch further by revisiting its key features and introducing the concept and execution of using 'variables' in code scripts.	<b>Website design (5 lessons)</b>  Developing research, word processing and collaborative working skills whilst learning how web pages and sites are created. Learning to embed media and links.	<b>HTML (5 lessons)</b>  Learning about the markup language behind a webpage; becoming familiar with HTML tags, changing HTML and CSS code to alter images and 'remix' a live website.	<b>Computational thinking (5 lessons)</b>  Solving problems effectively using the four areas of abstraction, algorithm design, decomposition and pattern recognition.	<b>Investigating weather (5 lessons)</b>  Researching and storing data using spreadsheets; designing a weather station that gathers and records data; learning how weather forecasts are made.	<b>Online safety Y4 (6 lessons)</b>  Searching for information and making a judgement about the probable accuracy; recognising adverts and pop-ups; understanding that technology can be distracting.
Year 5	<b>Computing systems and networks</b>	<b>Programming</b>	<b>Data handling</b>	<b>Programming</b>	<b>Creating media</b>	<b>Skills showcase</b>	<b>Online Safety</b>
	<b>Search engines (5 lessons)</b>  Learning: to search using keywords and phrases, to identify inaccurate information, how pagerank works and how to credit their sources.	<b>Programming music (5 lessons)</b>  Building-on programming and music skills to create different sounds, beats and melodies which are put to the test with a Battle of the Bands performance!	<b>Mars Rover 1 (5 lessons)</b>  Learning about the Mars Rover, exploring how and why it transfers data including instructions, and how messages can be sent using binary code.	<b>Micro:bit(5 lessons)</b>  Creating algorithms and programs that are used in the real world. Using the 'predict, test and evaluate' cycle to create and debug programs with specific aims	<b>Stop motion animation (5 lessons)</b>  Creating animations, storyboard ideas and decomposing a story into small parts before putting together to create the illusion of a moving image.	<b>Mars Rover 2 (5 lessons)</b>  Exploring how the Mars rover: moves, follows instructions, collects and sends data; understanding how computers work, what data is and how it is transferred.	<b>Online safety Y5 (5 lessons)</b>  Learning about app permissions; the positive and negative aspects of online communication; that online information is not always factual; how to deal with online bullying and managing our health and wellbeing

Year 6	Computing systems and networks	Programming	Data handling	Creating media	Data handling	Skills showcase	Online Safety
	<p><b>Bletchley Park (5 lessons)</b></p> <p>Discovering the history of Bletchley and learning about code breaking and password hacking. Demonstrating digital literacy skills by creating presentations.</p>	<p><b>Intro to Python (5 lessons)</b></p> <p>Using the programming language 'Python' to create designs and art. Learning how to create loops and nested loops to make their code more efficient.</p>	<p><b>Big data 1 (5 lessons)</b></p> <p>Identifying how barcodes and QR codes work. Learning how infrared waves are used for the transmission of data while recognising the uses of RFID.</p>	<p><b>History of computers (5 lessons)</b></p> <p>Writing, recording and editing radio plays set during WWII, learning about how computers have evolved from being larger than a room to fitting into the palm of our hand.</p>	<p><b>Big data 2 (5 lessons)</b></p> <p>Further developing understanding of how networks and the Internet are able to share information. Learning how big data can be used to design smart buildings.</p>	<p><b>Inventing a product (5 lessons)</b></p> <p>Designing a product, pupils: evaluate, adapt and debug code to make it suitable for their needs and designing products in CAD and creating a website and video.</p>	<p><b>Online safety Y6 (6 lessons)</b></p> <p>Learning to deal with issues online; about the impact and consequences of sharing information online; how to develop a positive online reputation; combating and dealing with online bullying and protective passwords.</p>