Weston Primary School

Computing Overview

Information Technology | Digital Literacy | Computer Science Programming | Computer Science Theory

	Autumn	Spring	Summer
EYFS	Using programming toys in the classroom Mouse control games (e.g. dot to dot pictures)	Completing simple programs on the computers Programming: Bee Bot introduction Digital Painting – colouring in pictures	Typing captions to pictures Programming: Bee Bot more independent route planning Pictograms
Year 1	Typing Skills E-Safety: communicating sensibly online Basic word processing Basic photo editing Research: navigating sites and using a web browser QR Codes Digital painting	Controlling robots – routes Creating a simple multimedia e-book page E-safety: basic rules Computer hardware Describing Technology uses beyond school (inc in a supermarket)	Programming: sequences of commands to animate pictures E-Safety: rules to follow E-Safety: media player safely
Year 2	Creating word processed documents Research: searching methods Digital painting	Controlling robots – drawing pictures Creating a complex multimedia e-book page E-Safety: basic rules Components inside a computer Explaining technology uses beyond school (inc in an airport)	Programming: different inputs and button clicks E-Safety: explaining why rules should be followed E-Safety: identifying trusted people

Year 3	Creating documents with different apps Programming: animations	Algorithms Programming: using conditional events in programs E-Safety: Digital communication rules (inc password security)	Uses of technology in society and their impact Advanced document creation
Year 4	How the Internet works E-Safety: Making safe documents E-Safety: Age restrictions Editing movies and creating quizzes	Simple flowcharts LOGO-type programming Fake News Programming: variables	Programming: variables Input and output devices Internet technology Trifold leaflet design
Year 5	Introduction to spreadsheets Databases Drawing tools – shape pictures	E-Safety: Zip it Block it Flat it Linear on-screen presentation Impact of technology on society Programming: with values	Programming: random numbers E-Safety: sharing content safely, vlogging rules and online deception Photo editing
Year 6	Comparing Internet services Creating an information app E-Safety: E-commerce Non-linear presentation	Algorithms and flowcharts Programming: complex code and systems lifecycle Advanced spreadsheets Digital maps – route finding	E-Safety: digital citizen behaviours Photo editing and stop motion animations

Information Technology

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	AB Y6
Creating Documents	• Type letters using a keyboard to write short words or sentences.	• Type words quickly and correctly using a keyboard. • Select suitable emojis to type next to words. • Make simple word processed documents and change the appearance of text.	• Make word processed documents that include emojis and images. • Change the appearance of text so it matches a document's theme.	• Type text into different programs and change its style by applying a range of font effects (including using fancy lettering for titles). • Create documents and posters by combining text boxes with inserted images.	• Type and design a variety of documents, posters and leaflets using ICT with neat layouts and suitable colour schemes. • Understand the rules for creating neat word processed work.			
Data Handling	• Create a pictogram using ICT.		• Create a bar chart using ICT.		• Create a variety of graphs using ICT.	• Enter formulae into a spreadsheet to solve calculations and model scenarios, including using =SUM() and statistical functions. • Change the format of cells of cells using: text alignment, borders and data types. • Create a flat-file database, then use sorting and filtering to answer questions about it.	• Use = IF() functions in a spreadsheet.	• Write formulae to solve maths problems (e.g. unit convertors) .

Pictures	• Combine painting tools to make digital art. • Shoot and review digital photos.	• Use and combine a variety of painting tools effectively to create a picture. • Explore tools for editing digital photos.	• Use editing tools to edit and improve painted pictures. • Compare tools for editing images saved from the web.	• Create a photo collage. • Shoot and edit digital photos effectively.		• Compare ways for manipulating digital images to enhance them. • Create pictures using drawing tools (shapes). • Create an animated GIF image.	• Edit images using layering techniques.	
Multimedia	• Complete a simple program on a computer. • Compose music using ICT.	• Create simple interactive games to play. • Create a multimedia ebook page combining: text, painted pictures and recorded sound.	• Create interactive games to play with instruction screens. • Create a multimedia ebook combining: text, images, voice recordings and shapes. • Create a word collage.	• Create a multimedia ebook with a neat layout and an appropriate colour scheme.	• Produce a multimedia video topic about topic with music and narration. • Create online multiple choice quizzes.	• Create a multimedia on-screen presentation over several slides, adding animation and transition effects.	• Design an information app that contains multimedia pages linked together using hyperlinks. • Create an on-screen presentation with suitable transitions, advanced animation effects (that play automatically) and action buttons. • Create and edit a stop motion animation.	

Children should also understand and apply the vocabulary related to this strand of the curriculum for their year group, as outlined in the Computing knowledge organisers.

Digital Literacy

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	AB Y6
Web Searching	• Navigate around websites with guidance.	• Use a web browser to navigate around a website to do research. • Search for sensible, suitable images online. • Scan and create QR codes.	• Use a web browser and search tools to navigate websites effectively to do research (including using 'reader' view). • Search for sensible, suitable images online to save and insert into a document.	• Explore a virtual map and compare different viewing options on it.	• Know how to construct effective key word web searches. • Make comparisons between different search engines and their results. • Know how to interpret URLs. • Identify fake news.	• Cross-reference search results to help validate information on them.	• Know how to evaluate the usefulness of search result hits ('TASK' check). • Research localities using a digital map and use advanced tools like route finders.	

E-Safety	• Know where to go for help or support when online.	• Know how to communicate sensibly using an online platform. • Know rules for staying safe online, including how to safely use Internet media players.	• Know rules for staying safe online and why they must be followed, including the importance of managing 'screen time'. • Know who trusted people are to get help or support from when online.	• Compare digital communication methods, including when they are appropriate to use. • Explain the features of a strong password. • Understand how to stay safe when playing computer games. • Understand what a 'connected home' is and how to live in one safely. • Know what electronic mail is and the services offered by an email client.	• Understand the importance of only joining and using childfriendly websites. • Understand that there are consequences for making bad decisions online.	• Describe online hazards and how to respond to them safely. • Be able to identify what is personal information and when it shouldn't be shared, including being able to explain the 'Zip it, Block it, Flag it' slogan. • Know how to stay safe when watching and recording vlogs. • Compare techniques used for manipulating and putting pressure on people online. • Understand how to safely send text messages. • Understand the issues around 'fake news'.	• Discuss reasons for and against sharing material publicly online. • Understand the importance of online consent. • Understand the term 'digital footprint' and describe strategies for reducing it. • Learn how to safely share images online.	• Identify and explain the safest response to possibly dangerous online scenarios (concept cartoons) .

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Computer Science - Theory

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	AB Y6
How Computers Work	• Identify the main parts of a computer.	• Identify and name the main components of a computer. • Name common input and output devices of computer systems.	• Explain the function of the main components of a computer.	• Understand how a computer stores data.	• Describe the main hardware components of a computer system, including the functions of different input and output devices.	• Understand how digital images are stored and displayed on a computer.		• Understand how binary numbers work.
Uses of Technology	• Recognise that a range of technology is used in places such as homes and schools.	• Identify uses of technology beyond school. • Explain how a supermarket uses ICT to help it operate.	• Describe uses of technology beyond school. • Explain how an airport uses ICT to help it operate.	• Identify uses of technology beyond school and discuss reasons why they are helpful (e.g. robots, drones and simulations).	• Understand how the Internet works, including how it is structured and how data travels along it. • Understand how search engines operate, including how they rank results.	• Describe the positive and negative impact of technology on society, including on people's: spiritual, moral, social and cultural development. • Find out about the history of computing, including pioneers in developing different technologies. • Describe uses of GPS.	• Describe the services offered by the Internet. • Understand what ecommerce is and what its impact is.	• Know about different Computing careers. • Understand the history of WWII computer code breaking.

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Computer Science - Programming

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	AB Y6
Algorithms	• Understand that an algorithm is a sequence of instructions which can programmed on a digital device.	• Follow simple algorithms to make things happen.	• Write and share simple algorithms for others to follow.	• Use logical reasoning to write simple algorithms explaining the sequence commands should run in.	• Use logical reasoning to create simple flowcharts explaining the sequence commands should run in.		• Create flowcharts of real life systems showing how steps of algorithms are linked together.	
LOGO Programming	• Program robots with simple commands (e.g. forward, right, forward).	• Control real and onscreen robots to move along routes using numerical commands (e.g. forward 3).	• Enter LOGO commands to program a robot turtle so it draws shapes and patterns.		• Enter and repeat LOGO commands to program an on-screen turtle so it draws shapes, patterns and pictures.			

Block Programming	• Design computer programs in which pictures animate around a scene in an order.	• Design computer programs in which pictures animate around a scene based on different events – at the start, when they are clicked on and when you swipe the screen.	• Design computer programs in which pictures animate around a scene based on different events – at the start, when they are clicked on, with button presses and when you swipe the screen.	• Program a sequence of actions using timings to create a simple animation. • Write code that includes conditional events (e.g. run commands if objects hit).	• Create games and apps that include variables in them (e.g. as a score counter or timer).	• Design and program games that include changing object properties (e.g. speed and direction). • Generate random numbers in code to make programs more unpredictable.	• Design and program complex games that include: conditional events, score variables, random number generators and time limits.	• Learn how to write code using a textbased language (e.g. Python and/or HTML).
Debugging		• Debug programs with support so they run correctly.	• Test and programs independently so they run correctly.	• Test, debug and improve programs with support.	• Test, debug and improve programs independently.			• Describe different error types (syntax and logical bugs).
Project Write-Ups			• Type short explanations of programs created.	• Create documents with screenshots that describe what happens in programs created.	• Create documents with screenshots that explain how the code works in programs created.		• Follow the parts of a project lifecycle (analysis, design, implementation, testing and evaluation) • Create a report detailing each stage as a program was created.	

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