Woodlands Primary School Computing Overview

EYFS Opportunities for Computing

Understanding the World	Literacy	Physical Development	Communication and Language	Personal, Emotional and Emotional	Expressive Arts and Design	Mathematical
Children to role play and tinker with a range of technology from electronic devices to walkie-talkies, remote control cars and interactive pets, this will help them to understand how they work and the functions they have. Digital cameras to be used to understand the world around them and the children can photograph their own learning.	By using interactive pets children can create their own stories about the life of the pet. These pets can be simply programmed for children to understand sequences and basic algorithms. After taking photos with a digital camera, children can then talk about the images they have taken. Children to understand online safety through a range of age-appropriate books such as Digiduck, Chicken Clicking, Smartie the Penguin and Goldilocks (A hashtag cautionary tale).	Children to have access to a range of input devices like keyboards and a mouse to help with finer motor skills. Typing games and mouse control games can help to develop these skills. Floor based directional activities can help children to learn simple programming language like left, right, forwards, backwards.	Children to be given the opportunity to give verbal instructions during different activities, helping them to understand how algorithms work. Giving instructions could also form part of sessions linked to physical development activities, such as determining rules for certain playground games. Children can have the chance to share information and news from home which has been sent in via email.	By using the iPads, children can use the voice recorder to record their voices, share how they are feeling or discuss relationships with others. Progression can be made by letting the children use video recorders to create their own videos. Children to understand online safety through a range of age-appropriate books such as Digiduck, Chicken Clicking, Smartie the Penguin and Goldilocks (A hashtag cautionary tale).	Children to have access to paint apps on the iPad and laptops that are connected to the interactive whiteboard. Children can create and take ownership of their own piece of digital artwork. Children can use the digital camera to take photos, which can be printed out and made into a collage. These images can also be used to create digital collages on iPads.	By using and controlling devices, interactive pets and remote control cars children will develop counting skills and directional language like left, right, forwards, which will lead to being able to give simple algorithms.

Computing Vocabulary – algorithm, backwards, backwards, camera, computer, create, digital camera, email, equipment, forward, forwards, information, instruction, internet, iPad, keyboard, keys, laptop, left, monitor, mouse, off, on, phone, photos, print, printer, remote, right, screen, share, sound, switch, technology, typing, website

Key Stage 1 and 2 Cycle A

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Systems and Networks	**Creative Media**	**Programming 1**	**Data and Info**	**Creating Media**	**Programming 2**
Year 1/2	Technology Around Us (Y1) Information Technology Around Us (Y2)	Digital Writing	Moving a Robot (Y1) Robot Algorithms (Y2)	Grouping Data	Digital Painting	Programming Animation
Year 3/4	The Internet	Audio Editing	Repetition in Shapes	Branching Database	Photo Editing	Repetition in Games
Year 5	Sharing Information	Video Production	Selection in Physical Computing	Flat-file Databases	Vector Drawing	Selection in Quizzes
Year 6	Internet Communication	Webpage Creation	Variables in Games	Introduction to Spreadsheets	3D Modelling	Sensing

Unit Summaries Cycle A

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Systems and Networks	**Creative Media**	**Programming 1**	**Data and Info**	**Creating Media**	**Programming 2**
Year 1/2	**Technology Around Us (Y1)** Recognising technology in school and using it responsibly. **Information Technology Around Us (Y2)** Identifying IT and how its responsible use improves our world in school and beyond.	**Digital Writing** Using a computer to create and format text, before comparing to writing non-digitally.	**Moving A Robot (Y1)** Writing short algorithms and programs for floor robots and predicting program outcomes. **Robot Algorithms (Y2)** Creating and debugging programs, using logical reasoning to make predictions.	**Grouping Data** Exploring object labels, then using them to sort and group objects by properties.	**Digital Painting** Choosing appropriate tools in a program to create art and making comparisons with working non-digitally.	**Programming Animations** Designing and programming the movement of a character on screen to tell stories.
Year 3/4	**The Internet** Recognising the internet as a network of networks including the WWW and why we should evaluate online content.	**Audio Editing** Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	**Repetition in Shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes.	**Branching Databases** Building and using branching database to group objects using yes/no questions.	**Photo Editing** Manipulating digital images and reflecting on the impact of changes and whether the required purpose is fulfilled.	**Repetition in Games** Using block-based programming language to explore count-controlled and infinite loops when creating a game.
Year 5	**Sharing Information** Identifying and exploring how information is shared between digital systems.	**Video Production** Planning, capturing, and editing video to produce a short film.	**Selection in Physical Computing** Exploring conditions and selection using a programmable microcontroller.	**Flat-file Databases** Using a database to order data and create charts to answer questions.	**Vector Drawing** Creating images in a drawing program by using layers and groups of objects.	**Selection in Quizzes** Exploring selection in programming to design and code an interactive quiz.
Year 6	**Internet Communication** Recognising how the WWW can be used to communicate and be searched to find information.	**Webpage Creation** Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	**Variables in Games** Exploring variables when designing and coding a game.	**Introduction to Spreadsheets** Answering questions by using spreadsheets to organise and calculate data.	**3D modelling** Planning, developing, and evaluating 3D Computer models of physical objects.	**Sensing** Designing and coding a project that captures inputs from a physical device.

Computing Vocabulary Cycle A

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Systems and Networks	**Creative Media**	**Programming 1**	**Data and Info**	**Creating Media**	**Programming 2**
Year 12	**Technology Around Us Online (Y1)** Computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift, spacebar, capital letter, full stop, safely, responsibly **Information Technology Around Us (Y2)** Information technology (IT), computer, barcode, scanner/scan	**Digital Writing** Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar	**Moving a Robot (Y1)** Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program **Robot Algorithms (Y2)** Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging	**Grouping Data** Object, label, group, search, image, colour, shape, property, value, data set, less, most, fewest, the same	**Digital Painting** Paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style	**Programming Animation** Scratch, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate
Year 3/4	**The Internet** Internet, network, router, network security, network switch, wireless access point (WAP), router, website, web page, web address, router, routing, route tracing, browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, accurate, honest, adverts	**Audio Editing** Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback	**Repetition in Shapes** Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure	**Branching Databases** Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, j2data, selecting, pictogram, information, decision tree, questions	**Photo Editing** Image, edit, arrange, select, digital, crop, undo, save, search, copyright, composition, save, pixels, rotate, flip, adjustments, effects, colours, hue/saturation, sepia, version, illustrator, clone, recolour, magic wand, sharpen, brighten, fake, real, composite, background, foreground, retouch, paste, alter, publication, elements, original, font style, border, layer	**Repetition in games** Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate, modify, debug, refine, evaluate, algorithm
Year 5	**Sharing Information** System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	**Video Production** Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV	**Selection in Physical Computing** Microcontroller, crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box,	**Flat-file Databases** Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart,	**Vector Drawing** Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom,	**Selection in Quizzes** Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and

		(audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback	program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate	axis, compare, filter, presentation	select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives	outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive
Year 6	**Communication** Search, search engine, Google, Bing, Yahoo, Swisscows, DuckDuckGo, refine. index, crawler, bot, optimisation, links, web crawlers, content creator, ranking, communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	**Web Page Creation** Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation, hyperlink, subpage, implication, external link, embed	**Variables in Games** Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share	**Spreadsheets** Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results, comparisons, questions, software, tools, data, propose	**3D Modelling** 2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve	**Sensing** Micro-bit, MakeCode, input, process, output, flashing, USB, selection, condition, if… then… else, variable, random, navigation, design, task, step counter, plan, create, code, test, debug

Key Stage 1 and 2 Cycle B

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Systems and Networks	**Creative Media**	**Programming 1**	**Data and Info**	**Creating Media**	**Programming 2**
Year 1/2	Technology Around Us (Y1) Information Technology Around Us (Y2)	Digital Writing	Moving A Robot (Y1) Robot Algorithms (Y2)	Pictograms	Digital Photos	Programming Quizzes
Year 3/4	Connecting Computers	Stop-Frame Animation	Sequencing Sounds	Data Logging	Desktop Publishing	Events and Actions in Programs
Year 5	Sharing Information	Video Production	Selection in Physical Computing	Flat-file Databases	Vector Drawing	Selection in Quizzes
Year 6	Internet Communication	Webpage Creation	Variables in Games	Introduction to Spreadsheets	3D Modelling	Sensing

Unit Summaries Cycle B

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Systems and Networks	**Creative Media**	**Programming 1**	**Data and Info**	**Creating Media**	**Programming 2**
Year 1/2	**Technology Around Us (Y1)** Recognising technology in school and using it responsibly. **Information Technology Around Us (Y2)** Identifying IT and how its responsible use improves our world in school and beyond.	**Digital Writing** Using a computer to create and format text, before comparing to writing non-digitally.	**Moving A Robot (Y1)** Writing short algorithms and programs for floor robots and predicting program outcomes. **Robot Algorithms (Y2)** Creating and debugging programs, using logical reasoning to make predictions.	**Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer.	**Digital Photography** Capturing and changing digital photographs for different purposes.	**Programming Quizzes** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.
Year 3/4	**Connecting Computers** Identifying that digital devices have inputs, processes and outputs and how devices can be connected together to make networks.	**Stop Frame Animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story.	**Sequencing Sounds** Creating sequences in a block-based programming language to make music.	**Data Logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	**Desktop Publishing** Creating documents by modifying text, images and page layouts for a specific purpose.	**Events and Actions in Programs** Writing algorithms and programs that use a range of events to trigger sequences of actions.
Year 5	**Sharing Information** Identifying and exploring how information is shared between digital systems.	**Video Production** Planning, capturing, and editing video to produce a short film.	**Selection in Physical Computing** Exploring conditions and selection using a programmable microcontroller.	**Flat-file Databases** Using a database to order data and create charts to answer questions.	**Vector Drawing** Creating images in a drawing program by using layers and groups of objects.	**Selection in Quizzes** Exploring selection in programming to design and code an interactive quiz.
Year 6	**Internet Communication** Recognising how the WWW can be used to communicate and be searched to find information.	**Webpage Creation** Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	**Variables in Games** Exploring variables when designing and coding a game.	**Introduction to Spreadsheets** Answering questions by using spreadsheets to organise and calculate data.	**3D Modelling** Planning, developing, and evaluating 3D Computer models of physical objects.	**Sensing** Designing and coding a project that captures inputs from a physical device.

Computing Vocabulary Cycle B

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Systems and Networks	**Creative Media**	**Programming 1**	**Data and Info**	**Creating Media**	**Programming 2**
Year 12	**Technology Around Us Online (Y1)** Computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift, spacebar, capital letter, full stop, safely, responsibly **Information Technology Around Us (Y2)** Information technology (IT), computer, barcode, scanner/scan	**Digital Writing** Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar	**Moving a Robot (Y1)** Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program **Robot Algorithms (Y2)** Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging	**Pictograms** More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular	**Digital Photography** Device, camera, photograph, capture, image, digital, landscape, portrait, real horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject, matter, flash, focus, background, foreground, editing, filter, Pixel, changed,	**Programming Quizzes** Sequence, command, program, run, program, start, predict, blocks, actions, sprite, modify, match, debug, features, evaluate
Year 34	**Connecting Computers** Digital device, input, output, process, program, connection, network, network switch, server, wireless access point (WAP)	**Stop Frame Animation** Animation, flip book, stop frame, animation, frame, sequence, image, transition, photograph, setting, character, events, onion skinning, consistency, delete, frame, media, import	**Sequence in Music** Scratch, programming, debug, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, event, task, design, code, run the code, order, note, chord, algorithm, bug	**Data logging** Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion	**Desktop Publishing** Text, images, advantages, disadvantages, communicate, font, style, template, desktop publishing, copy, paste, layout, purpose, benefits	**Events and Actions** Motion, event, sprite, algorithm, logic, move, resize, algorithm, extension block, pen up, set up, design, action, debugging, errors, setup, test
Year 5	**Sharing Information** System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	**Video Production** Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback	**Selection in Physical Computing** Microcontroller, crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate	**Flat-file Databases** Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation	**Vector Drawing** Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives	**Selection in Quizzes** Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive

Year 6	**Communication** Search, search engine, Google, Bing, Yahoo, Swisscows, DuckDuckGo, refine. index, crawler, bot, optimisation, links, web crawlers, content creator, ranking, communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	**Web Page Creation** Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation, hyperlink, subpage, implication, external link, embed	**Variables in Games** Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share	**Spreadsheets** Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results, comparisons, questions, software, tools, data, propose	**3D Modelling** 2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve	**Sensing** Micro-bit, MakeCode, input, process, output, flashing, USB, selection, condition, if… then… else, variable, random, navigation, design, task, step counter, plan, create, code, test, debug