Computing Progression of Skills – Early Years

Computing may not be part of the EYFS framework; however, it is during this stage that children build foundations for computational thinking – a golden thread which runs throughout Years 1-6 covering the National Curriculum.

We live in a digital world full of technology that is integrated into the lives of young children. Therefore, children having access to computing lessons from an early age ensures they develop listening skills, problem-solving abilities and thoughtful questioning – as well as improving subject skills across the seven areas of learning. Therefore, computing is included to prepare the children for their computing lessons in Year 1. This progression of skills combines a personalised approach from experience with the children in our setting and some adapted statements from the Birth to 5 documents where technology is still included.

	Minis(2–3-year-olds)	Pre-School (3–4-year-olds)	Reception (4–5-year-olds)
Digital Literacy	Recognise technology that is used at home and in school. Understand what a computer is and the different uses of computers i.e., learning, communicating, finding information, playing games etc.	I can identify some simple examples of my personal information (my name, birthday, age, where I live etc..). I can identify people I trust in the network around me.	Develops digital literacy skills by being able to access, understand and interact with a range of technologies. I can give simple examples of rules when staying safe online. I can give examples of devices in my home that might be connected to the internet I can give examples of when I should ask permission to do something online and explain why this is important. I can recognise some ways in which technology might be used to communicate with people I know.
Computer Science	Anticipates repeated sounds, sights and actions – eg. When ad adult demonstrates an action toy several times.	Plays with a range of materials to learn cause and effect eg. – makes a string puppet using string to suspend the puppet. Operates mechanical toys eg. – turns the knob on a wind-up toy and pulls back on a friction car. Uses pipes, funnels and other tools to carry out/ transport water from one place to another. Give commands/instructions e.g., forward, backwards, go, stop, when using simple software/hardware	Completes a simple program on electronic devices such as bee bot or a coding app. Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. Knows that information can be retrieved from digital devices and the internet, Shows an interest in technological toys with knobs, pulleys, real objects such as cameras and touchscreen devices such as mobile phones and tablets.

		Make choices about the buttons/icons to press, touch or click on when using simple software/hardware.	
Information Technology	Shows interest in toys with buttons, flaps and simple mechanisms and begins to learn to operate them.	Seeks to acquire basic skills in turning on and operating some digital equipment. Can investigate touch capable technology. Experience simple apps and software and use these to present ideas – eg. – draw a picture, record a sound etc..	Can create content such as video recording, stories and drawing pictures on a screen. Uses IT hardware to interact with age-appropriate apps. Can use the internet with adult supervision to find and retrieve information of interest to them. Input commands using a mouse to control a cursor and use the left click to select options OR use finger control to interact with a tablet (double tap, swipe) Input commands using the space bar, backspace, enter, letters and numbers on a keyboard on any device (including on a tablet). Manage a device by correctly closing websites or apps and safely turning on and off. Knows how to operate simple equipment eg. – turn on the interactive board, use a remote control.

Vocabulary Progression

Year 1	Computing and System Networks Technology around us Online Safety Technology, computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift, spacebar, capital letter, full stop, safely, responsibly	Creating Media Digital Painting Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, George Seurat, Pointillism, prefer, dislike, like	Programming A Moving a robot Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program	Data and Information Grouping data Online Safety Object, label, group, search, image, colour, shape, property, value, data set, less, most, fewest, the same	Creating Media Digital writing Online Safety Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar	Programming B Introduction to animation ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate, design
Year 2	Computing and System Networks Information technology around us	Creating Media Digital photography Device, camera, photograph,	Programming A Robot algorithms Instruction, sequence, clear,	Data and Information Pictograms Online safety	Creating Media Making music Online safety	Programming B Introduction to quizzes Sequence, command,

	Online safety Information technology (IT), computer, barcode, scanner/scan	capture, image, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject, matter, flash, focus, background, foreground, editing, filter, Pixl, changed, real	unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging	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	Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, instrument, create, open, edit	program, run, program, start, predict, blocks, actions, sprite, modify, match, debug, features, evaluate
Year 3	Computing and System Networks Connecting Computers Digital device, input, output, process, program, connection, network, network switch, server, wireless access point (WAP)	Creating Media Stop frame animation Online safety Animation, flip book, stop frame, animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, delete, frame, media, import, transition	Programming A Sequence in music Scratch, programming, 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, debug	Data and Information Branching databases Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, j2data, selecting, pictogram, information, decision tree, questions	Creating Media Desktop publishing Online safety Text, images, advantages, disadvantages, communicate, font, style, template, desktop publishing, copy, paste, layout, purpose, benefits	Programming B Events and actions Motion, event, sprite, algorithm, logic, move, resize, algorithm, extension block, pen up, set up, design, action, debugging, errors, setup, test
Year 4	Computing and System Networks 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	Creating Media Audio editing Online safety Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback	Programming A Repetition in shapes Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure	Data and Information Data logging Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion	Creating Media Photo editing Online safety 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	Programming B 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	Computing and System Networks Sharing information Online safety System, connection, digital, input, process, output,	Creating Media Video editing Online safety Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom,	Programming A Selection in physical computing Microcontroller, crumble controller, components, LED, Sparkle, crocodile clips,	Data and Information Flat-file databases Database, data, information, record, field, sort, order, group, search, criteria, value,	Creating Media Vector drawing Online safety Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate,	Programming B Selection in quizzes Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking

	protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	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,	connect, battery box, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate	graph, chart, axis, compare, filter, presentation	duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives	together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive
Year 6	**Computing and System Networks** Communication Online safety Search engine, Google, refine. index, crawler, bot, optimisation, links, content creator, ranking, communication, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	**Creating Media** Web page creation Online safety 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	**Programming A** Variables in games Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share	**Data and Information** 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	**Creating Media** 3D modelling Online safety 2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve	**Programming B** 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

National Curriculum Coverage

National Curriculum Coverage — Years 3 and 4 (LKS2)	3.1 Connecting	3.2 Stop-frame Animatio	3.3 Sequenci ng	3.4 Branchin g	3.5 Desktop Publishin	3.6 Events and	4.1 The Internet	4.2 Audio Editing	4.3 Repetitio n in	4.4 Data Logging	4.5 Photo Editing	4.6 Repetitio n in
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts			✓			✓			✓			✓
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	✓		✓			✓			✓	✓		✓
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs			✓			✓			✓			✓
Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration	✓						✓					
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content					✓		✓	✓			✓	

	5.1 Sharing Information	5.2 Video Editing	5.3 Selection in Physical	5.4 Flat-file Database	5.5 Vector Drawing	5.6 Selection in Quizzes	6.1 Internet Communication	6.2 Webpage Creation	6.3 Variables in Games	6.4 Introduction to Scratch	6.5 3D Modelling	6.6 Sensing
Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact							✓	✓			✓	

National Curriculum Coverage — Years 5 and 6 (UKS2)	5.1 Sharing Information	5.2 Video Editing	5.3 Selection in Physical	5.4 Flat-file Database	5.5 Vector Drawing	5.6 Selection in Quizzes	6.1 Internet Communication	6.2 Webpage Creation	6.3 Variables in Games	6.4 Introduction to Scratch	6.5 3D Modelling	6.6 Sensing
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	✓		✓			✓	✓		✓			✓
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	✓		✓			✓			✓			✓
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs			✓			✓			✓			✓
Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration	✓						✓					
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content		✓		✓			✓	✓				
Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	✓	✓						✓	✓		✓	

National Curriculum Coverage — Years 1 and 2 (KS1)	1.1 Technology around us	1.2 Digital Painting	1.3 Moving a Robot	1.4 Grouping Data	1.5 Digital Writing	1.6 Programming Animations	2.1 Information technology around us	2.2 Digital Photography	2.3 Robot Algorithms	2.4 Pictograms	2.5 Making Music	2.6 Programming quizzes
Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions			✓			✓			✓			✓
Create and debug simple programs			✓			✓			✓			✓
Use logical reasoning to predict the behaviour of simple programs			✓			✓			✓			✓
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓
Recognise common uses of information technology beyond school	✓		✓	✓			✓	✓				
Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	✓				✓	✓	✓			✓		