

# Computing Progression Document

Year group	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Strand							
Computing Systems and Networks	<ul style="list-style-type: none"> <li>➤ Explore how things work.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To identify technology</li> <li>➤ To identify a computer and its main parts</li> <li>➤ To use a mouse in different ways</li> <li>➤ To use a keyboard to type on a computer</li> <li>➤ To create rules for using technology responsibly</li> </ul>	<ul style="list-style-type: none"> <li>➤ To recognise the uses and features of information technology</li> <li>➤ To identify the uses of information technology in the school</li> <li>➤ To identify information technology beyond school</li> <li>➤ To explain how information technology helps us</li> <li>➤ To explain how to use information technology safely</li> <li>➤ To recognise that choices are made when using information technology</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain how digital devices function</li> <li>➤ To identify input and output devices</li> <li>➤ To recognise how digital devices can change the way we work</li> <li>➤ To explain how a computer network can be used to share information</li> <li>➤ To explore how digital devices can be connected</li> <li>➤ To recognise the physical components of a network</li> </ul>	<ul style="list-style-type: none"> <li>➤ To describe how networks physically connect to other networks</li> <li>➤ To recognise how networked devices make up the internet</li> <li>➤ To outline how websites can be shared via the World Wide Web (WWW)</li> <li>➤ To describe how content can be added and accessed on the World Wide Web (WWW)</li> <li>➤ To recognise how the content of the WWW is created by people</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain that computers can be connected together to form systems</li> <li>➤ To recognise the role of computer systems in our lives</li> <li>➤ To recognise how information is transferred over the internet</li> <li>➤ To explain how sharing information online lets people in different places work together</li> <li>➤ To contribute to a shared project online</li> <li>➤ To evaluate different ways of</li> </ul>	<ul style="list-style-type: none"> <li>➤ To identify how to use a search engine</li> <li>➤ To describe how search engines select results</li> <li>➤ To explain how search results are ranked</li> <li>➤ To recognise why the order of results is important, and to whom</li> <li>➤ To recognise how we communicate using technology</li> <li>➤ To evaluate different methods of online communication</li> </ul>

# Computing Progression Document

					➤ To evaluate the consequences of unreliable content	working together online	
Creating Media	<ul style="list-style-type: none"> <li>➤ Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can</li> <li>➤ Continue, copy and create repeating patterns</li> </ul>	<ul style="list-style-type: none"> <li>➤ To describe what different freehand tools do</li> <li>➤ To use the shape tool and the line tools</li> <li>➤ To make careful choices when painting a digital picture</li> <li>➤ To explain why I chose the tools I used</li> <li>➤ To use a computer on my own to paint a picture</li> <li>➤ To compare painting a picture on a computer and on paper</li> <li>➤ To use a computer to write</li> <li>➤ To add and remove text on a computer</li> <li>➤ To identify that the look of text</li> </ul>	<ul style="list-style-type: none"> <li>➤ To use a digital device to take a photograph</li> <li>➤ To make choices when taking a photograph</li> <li>➤ To describe what makes a good photograph</li> <li>➤ To decide how photographs can be improved</li> <li>➤ To use tools to change an image</li> <li>➤ To recognise that photos can be changed</li> <li>➤ To say how music can make us feel</li> <li>➤ To identify that there are patterns in music</li> <li>➤ To show how music is made from a series of notes</li> <li>➤ To show how music is made from a series of notes</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain that animation is a sequence of drawings or photographs</li> <li>➤ To relate animated movement with a sequence of images</li> <li>➤ To plan an animation</li> <li>➤ To identify the need to work consistently and carefully</li> <li>➤ To review and improve an animation</li> <li>➤ To evaluate the impact of adding other media to an animation</li> <li>➤ To recognise how text and images convey information</li> <li>➤ To recognise that text and</li> </ul>	<ul style="list-style-type: none"> <li>➤ To identify that sound can be digitally recorded</li> <li>➤ To use a digital device to record sound</li> <li>➤ To explain that a digital recording is stored as a file</li> <li>➤ To explain that audio can be changed through editing</li> <li>➤ To show that different types of audio can be combined and played together</li> <li>➤ To evaluate editing choices made</li> <li>➤ To explain that digital images can be changed</li> <li>➤ To change the composition of an image</li> <li>➤ To describe how images can be changed for different uses</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain what makes a video effective</li> <li>➤ To identify digital devices that can record video</li> <li>➤ To capture video using a range of techniques</li> <li>➤ To create a storyboard</li> <li>➤ To identify that video can be improved through reshooting and editing</li> <li>➤ To consider the impact of the choices made when making and sharing a video</li> <li>➤ To identify that drawing tools can be used to produce different outcomes</li> <li>➤ To create a vector drawing</li> </ul>	<ul style="list-style-type: none"> <li>➤ To review an existing website and consider its structure</li> <li>➤ To plan the features of a web page</li> <li>➤ To consider the ownership and use of images (copyright)</li> <li>➤ To recognise the need to preview pages</li> <li>➤ To outline the need for a navigation path</li> <li>➤ To recognise the implications of linking to content owned by other people</li> <li>➤ To use a computer to create and manipulate three-dimensional (3D) digital objects</li> </ul>

# Computing Progression Document

		<p>can be changed on a computer</p> <ul style="list-style-type: none"> <li>➤ To make careful choices when changing text</li> <li>➤ To explain why I used the tools that I chose</li> <li>➤ To compare typing on a computer to writing on paper</li> </ul>	<ul style="list-style-type: none"> <li>➤ To create music for a purpose</li> <li>➤ To review and refine our computer work</li> </ul>	<p>layout can be edited</p> <ul style="list-style-type: none"> <li>➤ To choose appropriate page settings</li> <li>➤ To add content to a desktop publishing publication</li> <li>➤ To consider how different layouts can suit different purposes</li> <li>➤ To consider the benefits of desktop publishing</li> </ul>	<ul style="list-style-type: none"> <li>➤ To make good choices when selecting different tools</li> <li>➤ To recognise that not all images are real</li> <li>➤ To evaluate how changes can improve an image</li> </ul>	<p>by combining shapes</p> <ul style="list-style-type: none"> <li>➤ To use tools to achieve a desired effect</li> <li>➤ To recognise that vector drawings consist of layers</li> <li>➤ To group objects to make them easier to work with</li> <li>➤ To evaluate my vector drawing</li> </ul>	<ul style="list-style-type: none"> <li>➤ To compare working digitally with 2D and 3D graphics</li> <li>➤ To construct a digital 3D model of a physical object</li> <li>➤ To identify that physical objects can be broken down into a collection of 3D shapes</li> <li>➤ To design a digital model by combining 3D objects</li> <li>➤ To develop and improve a digital 3D model</li> </ul>
Data and Information	<ul style="list-style-type: none"> <li>➤ Talk about what they see, using a wide vocabulary</li> <li>➤ Understand position through words alone</li> </ul>	<ul style="list-style-type: none"> <li>➤ To label objects</li> <li>➤ To identify that objects can be counted</li> <li>➤ To describe objects in different ways</li> <li>➤ To count objects with the same properties</li> <li>➤ To compare groups of objects</li> </ul>	<ul style="list-style-type: none"> <li>➤ To recognise that we can count and compare objects using tally charts</li> <li>➤ To recognise that objects can be represented as pictures</li> <li>➤ To create a pictogram</li> <li>➤ To select objects by attribute and</li> </ul>	<ul style="list-style-type: none"> <li>➤ To create questions with yes/no answers</li> <li>➤ To identify the object attributes needed to collect relevant data</li> <li>➤ To create a branching database</li> <li>➤ To explain why it is helpful for</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain that data gathered over time can be used to answer questions</li> <li>➤ To use a digital device to collect data</li> <li>➤ To explain that a data logger collects 'data'</li> </ul>	<ul style="list-style-type: none"> <li>➤ To use a form to record information</li> <li>➤ To compare paper and computer-based databases</li> <li>➤ To outline how grouping and then sorting data allows us to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>➤ To identify questions which can be answered using data</li> <li>➤ To explain that objects can be described using data</li> <li>➤ To explain that formulas can be used to produce calculated data</li> </ul>

# Computing Progression Document

		<ul style="list-style-type: none"> <li>➤ To answer questions about groups of objects</li> </ul>	<p>make comparisons</p> <ul style="list-style-type: none"> <li>➤ To recognise that people can be described by attributes</li> <li>➤ To explain that we can present information using a computer</li> </ul>	<p>a database to be well structured</p> <ul style="list-style-type: none"> <li>➤ To identify objects using a branching database</li> <li>➤ To compare the information shown in a pictogram with a branching database</li> </ul>	<p>points' from sensors over time</p> <ul style="list-style-type: none"> <li>➤ To use data collected over a long duration to find information</li> <li>➤ To identify the data needed to answer questions</li> <li>➤ To use collected data to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain that tools can be used to select specific data</li> <li>➤ To explain that computer programs can be used to compare data visually</li> <li>➤ To apply my knowledge of a database to ask and answer real-world questions</li> </ul>	<ul style="list-style-type: none"> <li>➤ To apply formulas to data, including duplicating</li> <li>➤ To create a spreadsheet to plan an event</li> <li>➤ To choose suitable ways to present data</li> </ul>
Programming	<ul style="list-style-type: none"> <li>➤ Discuss routes and locations, using words like 'in front of' and 'behind'</li> <li>➤ Notice and correct an error in a repeating pattern.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain what a given command will do</li> <li>➤ To act out a given word</li> <li>➤ To combine forwards and backwards commands to make a sequence</li> <li>➤ To combine four direction commands to make sequences</li> <li>➤ To plan a simple program</li> <li>➤ To find more than one solution to a problem</li> </ul>	<p>To describe a series of instructions as a sequence</p> <ul style="list-style-type: none"> <li>➤ To explain what happens when we change the order of instructions</li> <li>➤ To use logical reasoning to predict the outcome of a program (series of commands)</li> <li>➤ To explain that programming projects can have code and artwork</li> <li>➤ To design an algorithm</li> </ul>	<p>To explore a new programming environment</p> <ul style="list-style-type: none"> <li>➤ To identify that commands have an outcome</li> <li>➤ To explain that a program has a start</li> <li>➤ To recognise that a sequence of commands can have an order</li> <li>➤ To change the appearance of my project</li> <li>➤ To create a project from a task description</li> </ul>	<p>To identify that accuracy in programming is important</p> <ul style="list-style-type: none"> <li>➤ To create a program in a text-based language</li> <li>➤ To explain what 'repeat' means</li> <li>➤ To modify a count-controlled loop to produce a given outcome</li> <li>➤ To decompose a task into small steps</li> <li>➤ To create a program that uses count-controlled loops</li> </ul>	<ul style="list-style-type: none"> <li>➤ To control a simple circuit connected to a computer</li> <li>➤ To write a program that includes count-controlled loops</li> <li>➤ To explain that a loop can stop when a condition is met</li> <li>➤ To explain that a loop can be used to repeatedly check whether a condition has been met</li> <li>➤ To design a physical project that includes selection</li> </ul>	<ul style="list-style-type: none"> <li>➤ To define a 'variable' as something that is changeable</li> <li>➤ To explain why a variable is used in a program</li> <li>➤ To choose how to improve a game by using variables</li> <li>➤ To design a project that builds on a given example</li> <li>➤ To use my design to create a project</li> <li>➤ To evaluate my project</li> </ul>

# Computing Progression Document

		<ul style="list-style-type: none"> <li>➤ To choose a command for a given purpose</li> <li>➤ To show that a series of commands can be joined together</li> <li>➤ To identify the effect of changing a value</li> <li>➤ To explain that each sprite has its own instructions</li> <li>➤ To design the parts of a project</li> <li>➤ To use my algorithm to create a program</li> </ul>	<ul style="list-style-type: none"> <li>➤ To create and debug a program that I have written</li> <li>➤ To explain that a sequence of commands has a start</li> <li>➤ To explain that a sequence of commands has an outcome</li> <li>➤ To create a program using a given design</li> <li>➤ To change a given design</li> <li>➤ To create a program using my own design</li> <li>➤ To decide how my project can be improved</li> </ul>	<ul style="list-style-type: none"> <li>➤ To explain how a sprite moves in an existing project</li> <li>➤ To create a program to move a sprite in four directions</li> <li>➤ To adapt a program to a new context</li> <li>➤ To develop my program by adding features</li> <li>➤ To identify and fix bugs in a program</li> <li>➤ To design and create a maze-based challenge</li> </ul>	<p>to produce a given outcome</p> <ul style="list-style-type: none"> <li>➤ To develop the use of count-controlled loops in a different programming environment</li> <li>➤ To explain that in programming there are infinite loops and count controlled loops</li> <li>➤ To develop a design that includes two or more loops which run at the same time</li> <li>➤ To modify an infinite loop in a given program</li> <li>➤ To design a project that includes repetition</li> <li>➤ To create a project that includes repetition</li> </ul>	<ul style="list-style-type: none"> <li>➤ To create a program that controls a physical computing project</li> <li>➤ To explain how selection is used in computer programs</li> <li>➤ To relate that a conditional statement connects a condition to an outcome</li> <li>➤ To explain how selection directs the flow of a program</li> <li>➤ To design a program which uses selection</li> <li>➤ To create a program which uses selection</li> <li>➤ To evaluate my program</li> </ul>	<ul style="list-style-type: none"> <li>➤ To create a program to run on a controllable device</li> <li>➤ To explain that selection can control the flow of a program</li> <li>➤ To update a variable with a user input</li> <li>➤ To use an conditional statement to compare a variable to a value</li> <li>➤ To design a project that uses inputs and outputs on a controllable device</li> <li>➤ To develop a program to use inputs and outputs on a controllable device</li> </ul>
--	--	--	---	--	--	--	--

# Computing Progression Document

## Vocabulary

Reception	Computer, iPad, tablet, App, button, mouse, screen, keyboard		Instructions, robot, sequence, control	Information, screen, Google, online, password, search, internet, save	Screen, button, mouse	
Year 1	Technology Around Us	Digital Painting	Moving a Robot	Grouping Data	Digital Writing	Programming Animations
	technology, computer, mouse, trackpad, keyboard, screen, double-click, typing.	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.	object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing	ScratchJr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design
Year 2	IT Around Us	Digital Photography	Robot Algorithms	Pictograms	Digital Music	Programming Quizzes
	Information technology (IT), computer, barcode, scanner/scan	device, camera, photograph, capture, image, digital, landscape, portrait, framing,	instruction, sequence, clear, unambiguous, algorithm, program, order,	more than, less than, most, least, common, popular, organise, data, object, tally chart,	music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm,	sequence, command, program, run, start, outcome, predict, blocks,

# Computing Progression Document

		subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting,	prediction, artwork, design, route, mat, debugging, decomposition	votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing	notes, create, emotion, beat, instrument, open, edit.	design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.
Year 3	Connecting Computers	Stop-frame Animation	Sequencing Sounds	Branching Databases	Desktop Publishing	Events and Actions in Programs
	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets	animation, flip book, stopframe, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code.	attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree.	text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits	motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions.
Year 4	The Internet	Audio Production	Repetition in Shapes	Data Logging	Photo Editing	Repetition in Games
	internet, network, router, security, switch, server, wireless access point (WAP),	audio, microphone, speaker, headphones, input device, output	Logo (programming environment), program, turtle, commands, code	data, table, layout, input device, sensor, logger, logging, data point,	image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours,	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite

## Computing Progression Document

	website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts.	device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.	snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure	interval, analyse, dataset, import, export, logged, collection, review, conclusion.	hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font.	loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate.
Year 5	Systems and Searching	Video Production	Selection in Physical Computing	Flat-file Databases	Introduction to Vector Graphics	Selection in Quizzes
	system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking	video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder,	microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, Input, output, selection, action, debug,	database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.	vector, drawing, tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator

## Computing Progression Document

		export, evaluate, share.	circuit, power, cell, buzzer			
Year 6	Communication and Collaboration	Webpage Creation	Variables in Games	Introduction to Spreadsheets	3D Modelling	Sensing Movement
	communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, oneway, two-way, one-to-one, one-to-many.	website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.	variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare	data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools.	TinkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify	Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug.