Computing-Why here, why now?

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		Computing Systems And Networks	**Creating Media A**	**Programming A**	**Data And Information**	**Creating Media B**	**Programming B**
Year 1	**Content**	Technology around us- an understanding of technology and how it can help them in their everyday lives, different components of a computer	Digital painting-develop their understanding of range of tools you used for digital painting, using these tools to create their own digital paintings while gaining inspiration from a range of artists	Moving a robot- introduction to early programming concepts, using individual commands, and begin to start predicting the outcome of programmes,	Grouping data-labelling, grouping and searching of data	Digital writing- understanding various aspects of using the computer to create and manipulate text, familiarity with the keyboard and mouse, differences between computer text and written text	Programming animation's- introduction to onscreen programming through scratch. Exploring the way a project looks by investigating sprites and background, use of programming blocks
	Why here, why now	No prior knowledge, progresses students' knowledge and understanding of technology and how they interact with it in schools, direct proceeds the year 2 computer systems and networks unit, IT around us	Builds on keyboard and mouse skills learned in previous unit	The unit progresses children's knowledge and understanding of giving and following instructions. It progresses from giving instructions to each other to giving instructions to a robot by programming it	Introduces children to data and information, including labelling and grouping object based on their properties, developed an understanding that objects can be given labels which is fundamental to future learning concerning databases and spreadsheets	Progresses children's knowledge and understanding of using computers to create him manipulate digital content, focusing on using a word processor leads into units in year 3- desktop publishing, and year 6- web page development	This unit progresses children's knowledge and understanding of programming and follows on from programming a- moving a robot
	Key Vocabulary	Technology, computer, mouse, trackpad, keyboard, screen, double click, typing	Paint programme, tool, paintbrush, erase, fill, undo, shaped tools, line tool, philtre, undo tool, colour, brushed out, brush size, pictures, painting, computers	Bee-bot forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, programme	Object, label, group, size, search, image, property, colour, shape, value, data set, mark, 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, compared, typing, writing	, command, Sprite, compared, programming, area, block, joining, start, run, programme, background, delete, effect, change, value, instructions, design

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		Computing Systems And Networks	**Creating Media A**	**Programming A**	**Data And Information**	**Creating Media B**	**Programming B**
Year 2	**Content**	IT around us-developing an understanding of what information technology is, Begin to identify examples, where they have seen it in school and beyond and how it improves our world	Digital photography-recognising that different devices can be used to capture photographs, experience of capturing, editing and improving photos. Recognising that images they see may not be real	Robot algorithms-develops understanding of instructions in sequences and the use of logical reasoning to predict outcomes, giving commands in different orders to investigate how order effects outcome, designing programming, designing algorithms	Pictograms-understand what the term data means and how data can be collected in the form of a tally chart, learn the term attribute and uses to help them organise data, presenting data visually using software	Digital music-listening to a variety of pieces of music and consider how music can make them think and feel, comparing creating music digitally and non-digitally, looking at patterns and purposefully creating music	Programming quizzes-understanding that sequences of commands have an outcome, making predictions based on their learning, using a modifying design to create their own quiz questions, using blocks of code
	Why here, why now	Progresses children's understanding of technology and how they interact with it, builds on children's understanding of using technology safely and responsibly	Begins children's understanding of how photos are captured and can be manipulated for different purposes, leads into photo editing skills in year 4	Bills an experience of creating short programmes using floor robots and predicting the outcomes, progress his children's knowledge and understanding of algorithms and how they are implemented, leading to further programming units	Progressions children's knowledge and understanding of grouping data, builds on previous year 1 data and information unit and into year 3 understanding of attributes using branching databases	Builds on experience of making choices on a computer and navigating within an application, leads into video production and editing	Recaps on learning from year 1 unit programming be then leads into progressing children's knowledge and understanding of instructions in sequences and use of logical reasoning for further programming units
	Key Vocabulary	Information technology, computer, barcode, scanner, scan	Device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, composed, light sources, flash, focus, background, editing, filtered, format, framing come lighting	Instruction, sequence, clear, unambiguous, algorithm, programme, order, prediction, artwork, design, route, Mat, debugging, decomposition	More than, less than, most, least, common, popular, organised, data, object, tally chart, vote, total, pictogram, enter, data, compared, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing	Music, quiet, loud, feelings, emotions, pattern, rhythm, pulls, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit	Sequence, command, programme, run, start, outcome, predict, blocks, design, actions commerce bright, project, modified, change, algorithm, build, match, compared, devil, features, evaluate, Decomposition, code

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		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	**Year A**	**Computing Systems And Networks**	**Creating Media A**	**Programming A**	**Data And Information**	**Creating Media B**	**Programming B**
	Content	Connecting computers-developing understanding of digital devices within initial focus on input, processes and outputs, comparing digital and non-digital devices, introduction to computer networks including wireless access points and switches	Stop frame animation-using a range of techniques to create a stop frame animation, applying these skills to create a story-based animation, adding other types of media to animation such as music and text	Sequencing sounds-explore the concept of sequencing in programming through scratch, introduction to the programming environment, a selection of motion comet sound and event blocks used to create their own programmes,	Ranking databases-developing their understanding of what a branching database is and how to create one, using yes and no questions to gain an understanding of what attributes are and how to use them to sort groups of objects, physical and on-screen branching databases	Desktop publishing-familiarity with the terms text and images and emojis and understanding that they can be used to communicate messages both offline and online, using desktop publishing software and considering choices of font size, colour and type to edit and improve, introduction to terms templates, orientation and placeholders adding text and images to create their own pieces of work	Events and actions in programmes-explosive links between events and actions combat moving a Sprite in four directions, programming extensions through the use of pen blocks
	Why here, why now	Progresses children's knowledge and understanding of technology by focusing on digital and non-digital devices, builds on technology around me year 1 and IT around us year 2 and introduces the concept of computers connected as a network, leading to understanding of the Internet as a network of networks	Progresses children's knowledge and understanding of using digital devices to create media, builds on children's previous understanding of images from the digital photography unit, leads into video editing skills in Year 5	Builds on children's prior experience of programming, from moving the robot year 1 and robot algorithms year 2 alongside the use of scratch junior in programming animation's year1 and programming quizzes Year 2	Progresses children's knowledge and understanding of the categories of data handling, focus on implementation building on knowledge of data and information from key stage 1 grouping data in year 1 and pictograms in year 2 beginning to construct and interrogate branching databases	Progresses children's knowledge and understanding of using digital devices to combine both text and images building on work from previous units in digital writing year 1 digital painting year 1 and digital photography year 2	Builds on private experiences of programming, and support movement into year 3 programming unit introducing scratch programming environment and the concept of sequences
	Key Vocabulary	Digital device, input, Process, output, program, Digital, non-digital, Connection, network, switch, Server, wireless access Point, cables, sockets	Animation, flip book, stop frame, 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, dvantages, 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

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		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4		**Computing Systems And Networks**	**Creative Media A**	**Programming A**	**Data And Information**	**Creating Media B**	**Programming B**
	Content	The Internet-applying knowledge and understanding of networks to appreciate the Internet as a network of networks exploring the word World Wide Web to identify what they can access, add and create, evaluating online content to decide how honest accurate or reliable it is	Audio production-identifying input device [microphone] an output device [speaker or headphones] required to work with sound digitally, ownership of digital audio and copyright implications, using audacity to produce a podcast, editing adding multiple tracks and opening and saving audio files	Repetition in shapes-creating programs by planning, modifying and testing commands to create shapes and patterns, using logo, repetition and loops within programming	Data logging-understanding how and why data is collected over time, considering the senses that humans use to experience the environment and how computers can replicate these with special input devices called sensors, collecting and accessing data captured over long periods of time	Photo editing-developing an understanding of how digital images can be changed and edited and how they can then be re saved and reused, the impact of editing images and the effectiveness of their choices	Repetition in Games-exploring the concept of repetition in programming using scratch, similarities between scratch and logo, difference between count controlled an infinite loop, modifying existing animation and games using repetition
	Why here, why now	Progresses children's knowledge and understanding of network from that developed in the connecting computers unit, will continue to develop their knowledge and understanding of computing systems in Year 5 and understand how search engines work via the Internet and World Wide Web	Progresses children's knowledge and understanding of creative media by focusing on the recording and editing of sound to produce a podcast. Following this unit children's will be able to explore combining audio with video in the video editing unit in Year 5	Progresses children's knowledge and understanding of programming, within the year 3 units children's will have developed an awareness of the sequence of commands in a programme, progress on to use of count-controlled loops in these sequences	Progresses children's knowledge and understanding of data, build on concept of answering questions with data first introduced in key stage 1 data and information units, introduced to data in tables and graphs which is built on in Year 5 unit on flat file databases and year 6 unit on spreadsheets	Progresses lenses knowledge and understanding of digital photography and using digital devices to create media, build on digital photography unit from year 2, leads into developing image editing skills in Year 5 [vector drawing]	Builds on private experience of programming including floor robots, leads into further programming units in Year 5 and 6
	Key Vocabulary	Internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts	Audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.	Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure.	Data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.	Image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font.	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate.

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Year 5		**Computing Systems And Networks**	**Creating Media A**	**Programming A**	**Data And Information**	**Creating Media B**	**Programming B**
	Content	Systems and searching-developing an understanding of computer systems and how information is transferred between systems and devices, small scale and large-scale systems, input, output and process aspects, how information is found on the World Wide Web, search engines	Video Production-how to create short videos working in pairs and groups, topic-based language and developing the skills of capturing, editing and manipulating video,	Selection in physical computing-using physical computing to explore the concepts of selection in programming, crumble controllers, how to connect and programme, conditions is a means of controlling the flow of actions in a programme, if, then structure and algorithms and programmes that utilise this concept	Flat file databases-how a flat file database can be used to organise data in records, using tools within a database to order and answer questions, creating graphs and charts	Introduction to vector graphics-beginning to create vector drawings, how to use different drawing tools to help them create images, recognising the images are created using shapes and lines and each individual element is called an object	Selection in quizzes-developing a knowledge is selection by revisiting how conditions can be used and then how the if then else structure can be used to select different outcomes depending on whether a condition is true or false learning how to write programmes ask questions and use election to control the outcomes based on the answer given
	Why here, why now	Progresses children's knowledge and understanding of computing systems, from that developed in the Internet unit from year 4. Leads into year 6 unit where they continue to develop their knowledge and understanding of the Internet	Progresses children's knowledge and understanding of creating media by guiding them through the process, built on the year 4 photo editing unit and the year 3 stop frame animation unit	Builds on private experiences of programming using a block-based language and understanding the concept to sequence and repetition, leading to further programming units	Progresses children's knowledge and understanding of why and how information might be stored in a database, moves on to demonstrate how database can help us digitally display data, builds on previous data information handling units	Progresses children's knowledge and understanding of digital painting with links to year 3 creating media desktop publishing unit,	Builds on prior experience of programming using block base construction and having some experience of using selection
	Key Vocabulary	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, export, evaluate, share	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, circuit, power, cell, buzzer	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

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		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 6		**Computing Systems And Networks**	**Creating Media A**	**Programming A**	**Data And Information**	**Creating Media B**	**Programming B**
	Content	Communication and collaboration-how data is transferred over the Internet, addressing, makeup and structure of data packets, how the Internet facilitates online communication and collaboration, communicating responsibly	Web page creation-introduction to creating websites for chosen purpose, what makes a good web page, designing and evaluating their own website including attention to copyright and fair use of media	Variables in games-exploring the concept of variables in programming through games in scratch, what variables are unrelated to real world examples using variables to create a simulation of a scoreboard, use modify create model,	Introduction to spreadsheets-organising data into columns and rows, importance of formatting data to support calculations, introduction to formulas and how they can be used to produce calculated data,	3D modelling-using the computer to produce 3D models, working in 3D space, moving resizing and duplicating objects, creating hollow objects using placeholders and combining multiple objects to create a model, benefits of grouping and ungrouping 3D objects	Sensing movement-brings together elements of all four programming constructs, sequence, repetition, selection, and very bulls utilising the micro bit, building and testing within the new programming environment and transferring to the micro bit
	Why here, why now	Progress his children's knowledge and understanding of computer systems and networks building on year 5-unit systems and searching	Progresses children's knowledge and understanding for a variety of lessons across different strands of digital writing, digital painting, desktop publishing, photo editing and vector drawing	Builds on all previous prior experience of programming using block-based construction, repetition and selection	Progresses children's knowledge and understanding of data I'm build on experience of data in tables and charts in year 4 data logging and Year 5 branching database	Progresses student knowledge and understanding of creating 3D graphics using a computer, builds on earlier work on 2D graphics	Builds on pupils' confidence in their understanding of sequence, repetition and selection
	Key Vocabulary	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, one way, 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.