Computing systems and networks							
Concept	EYFS	YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR	YEAR FIVE	YEAR SIX
Content (NC with local adaptations)	**Introduction to Technology**	**Technology around us** Recognising technology in school and using it responsibly.	**IT around us** Identifying IT and how its responsible use improves our world in school and beyond.	**Connecting computers** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks	**The Internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	**Systems and Searching** Understanding computer systems and how information is transferred between systems and devices.	**Communication and collaboration** To explore how data is transferred over the internet.
Substantive Knowledge		- Explain how technology help us in day to day life - Identify examples of technology in the classroom - name the main parts of a computer		-I can explain that digital devices accept inputs - I can explain that digital devices produce outputs			

		- Switch on and log into a computer - Use a mouse to click and drag -Click and drag to make objects on a screen move - Use a mouse to create a picture - Use a mouse to open a program - Save work to a file - Explain what a keyboard is for - Type my name on a computer - Delete letters - Open a file - Use the arrow keys to move the cursor - Give examples of rules for using technology responsibly - Identify rules to keep us safe and healthy when we are using technology in and beyond the home		- I can follow a process -I can classify input and output devices - I can describe a simple process - I can design a digital device -I can explain how I use digital devices for different activities - I can recognise similarities between using digital devices and non-digital tools - I can suggest differences between using digital devices and non-digital tools -I can discuss why we need a network switch - I can explain how messages are passed			

				through multiple connections - I can recognise different connections -I can demonstrate how information can be passed between devices - I can explain the role of a switch, server, and wireless access point in a network - Recognise that a computer network is made up of a number of devices -Identify how devices in a network are connected together - Identify networked devices around me - Identify the benefits of			

				computer networks			
Disciplinary Knowledge							
Why here?/ Why now?		To teach children that there is lots of useful technology. in the world they grow up in.	It builds on the knowledge and uses of technology in the wider world started in EYFS and Year 1.	To learn more about computers building on prior understanding of KS1 curriculum by learning about other devices that can be used for inputs and outputs.	To begin to understand how the WWW is a network before progressing to UKS2 where they learn more about collaborative working via the internet.	To further build on pupils understanding of inputs and outputs and to take part in a collaborative project online	Extends Yr5 unit on collaborative working and further extends understanding of the internet by learning about data packets.
Vocabulary		Technology, help, support, desk, computer mouse/trackpad, keyboard, screen, click, drag, double click, input, device, shift, space bar, capital letter, full stop, safely,	Information technology (IT), computer, barcode, scanner/scan.		Internet, network, router, network security, network switch, server, WAP wire access point, Website, web page, web address, router,	Collaboration input, output, real-world system, physical and electronic connections, search engine, result, refine, specific, web	System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide,

		responsibly, computer, technology.			routing, route tracing, browser, World Wide, , content, links, files, content, download, sharing, ownership, permission,	crawler, ranking, limitations	
			Creating Media		Information,		
					accurate, honest, adverts		

LONG TERM CURRICULUM PLAN – Computing

Creating Media							
Concept	EYFS	YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR	YEAR FIVE	YEAR SIX
Content (NC with local adaptations)	Ipads-using the camera to take own pictures of work or things that we have an interest in.	**Digital Painting** Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally	**Digital photography** Capturing and changing digital photographs for different purposes.	**Stop-Frame Animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story.	**Audio Production** Capturing and editing audio to produce a podcast, ensuring that copyright is considered	**Video Production** Planning, capturing, and editing video to produce a short film.	**Web Page Creation** Introduces learners to the creation of websites for a chosen purpose.
Substantive Knowledge		-Draw lines on a screen and explain which tools I used - Make marks on a screen and					

		explain which tools I used -Use the shape and line tool to recreate the work of an artist -Create a picture in the style of an artist -Use dots to create a picture in the style of an artist -Explain that pictures can be made in different ways -Explain preferences between painting on a computer or paper					
Disciplinary Knowledge		- Use the paint tools to draw a picture -Make marks with the square and line tool -Change the colour and brush sizes					

		-Make dots on the page					
Why here?/ Why now?	To introduce using the iPads for a purpose, making sure they get the object in the picture.	To build upon knowledge learned in EYFS about technology having different uses. Build on knowledge learned in EYFS	It builds the understanding that we can use photography in different ways to capture objects started in EYFS.	Develops children's understanding of photography from Yr 1 and 2 and extends this to creating animations using stop-frame on tablets/ iPads and incorporating text and music	Expands on Digital music and recording skills learned in Yr 2 and 3. Pupils extend their knowledge of input and output devices and learn about ownership of digital audio and copyright.	To expand on previous knowledge of photography and podcasts and develop the skills of capturing, editing, and manipulating video, extending subject specific vocabulary.	This unit extends pupil's knowledge of copyright, building on this to explore fair use of media, the aesthetics of the site, and navigation paths.
Vocabulary	Image, object, button, see, frame	paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, shape tool, fill tool, Wassily Kandinsky, tools,	Device, camera, photograph, capture, image, digital, Landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject	Animation, flip book, stop-frame animation, frame, sequence, image, photograph, setting, character, events, stop frame animation, onion skinning, consistency,	Audio, record, playback, microphone, speaker, headphones, input, output, audio, sound, record, playback, start, pause, stop, podcast, save, file, selection, open,	Video, audio, recording, storyboard, script, soundtrack, dialogue, recording, capture, zoom, storage, digital, tape, AV (audio-visual), save, videographer	Revies, explore, HTML, fair use, copyright, copyright-free images, preview, own web page/home page, navigation path, hyperlinks,

		feelings, colour, brush style, Georges Seurat, Pointillism, brush size, p, painting, computers.	matter, compose, natural lighting, artificial lighting, flash, focus, background, editing, tools, colour, filter,	delete, frame, evaluating, media, import, transition.	save, mixing, time shift, export, MP3, audio, editing, evaluate, feedback.	Video techniques: Zoom, pan, tilt, angle, Video, lighting, setting, YouTuber, content, light, audio/sound, camera angle, colour, export, computer,	

Programming A							
Concept	EYFS	YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR	YEAR FIVE	YEAR SIX
Content (NC with local adaptations)	Make an animal costume for Beebot – explore how to use a Beebot.	**Moving a robot** Writing short algorithms and programs for floor robots, and predicting program outcomes.	**Robot algorithms** Creating and debugging programs, and using logical reasoning to make predictions.	**Sequencing Sounds** Creating sequences in a block-based programming language to make music.	**Repetition in shapes** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	**Selection in physical computing** Exploring conditions and selection using programmable microcontroller.	**Variables in games** Introduction of 'variables' in Scratch
Substantive Knowledge		-Run a command on a device -Predict the outcome of a command -Predict the outcome of a sequence					

		-Create a sequence using forwards and backwards -Turn a robot -Make predictions about a turn -Plan a simple program					
Disciplinary Knowledge		-Match a command to an outcome -Give directions -Follow instructions					
Why here?/ Why now?	Introducing that things only move if they are given instructions in a program.	To begin learning about algorithms and programming objects building on understanding of Beebots introduced in EYFS.	To develop learners' understanding of instructions in sequences, logical reasoning and debugging.	Continuing the use of computers to make media and introduces can link their programming skills to create this.	To extend pupils understanding of programming by learning about repetition and loops.	To combine the elements previously taught and progress to add more age appropriate content.	Pupils continue to develop programming skills by experimenting with variables in an existing project, then modifying them, before they create their own projects.
Vocabulary	Image, object, button, see, beebot, move,	Scratch Jr, Bee-Bot, command, sprite, compare, programming,	Instruction, sequence, clear, unambiguous,	Scratch, programming, blocks,	Code snippet, program, turtle , commands,	Microcontroller, Crumble controller,	Project, modify, variable, define, letter-string,

	forward, backward, on, off	programming area, Block, joining, command, start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, Instructions, appropriate, design.	algorithm, program, order, commands, artwork, design, route, mat, debugging.	commands, code, sprite, costume, stage, backdrop, programming blocks, motion, turn, point in direction, go to, glide, sequence, event, task, design, code, run the code, sequence, order, note, chord, algorithm, bug, debug.	algorithm, design, logo, debug, Pattern, repeat, repetition, count controlled loop, algorithm, value, repeat, repetition, count-controlled loop, trace, value, repeat, count controlled loop, decompose, procedure,	components, LED, sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, count controlled loop, condition, true, false, input, output devices, selection, condition, action, Task, design,	algorithm, artwork, role, code, task, design

Programming B							
Concept	EYFS	YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR	YEAR FIVE	YEAR SIX
Content (NC with local adaptations)	Beebot APP	**Introduction to animation** Designing and programming the movement of a character on screen to tell stories.	**Introduction to quizzes** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.	**Events and actions** Writing algorithms and programs that use a range of events to trigger sequences of actions.	**Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	**Selection in quizzes** Exploring selection in programming to design and code an interactive quiz.	**Sensing movement** Introduction to Micro:bits.
Substantive Knowledge							
Disciplinary Knowledge							

Why here?/ Why now?		To start to understand that we can program things to move objects such as Sprites.	Continues to develop on the Year 1 Scratch Junior unit 'Programming B - Programming animations'. To begin to understand sequences of commands have outcomes and make better predictions.	To continuing to develop their programming skills and become familiar with the technical vocabulary used on Scratch.	This unit extends pupil's understanding of sequences and repetition	This unit combines the elements previously taught and progresses to develop pupil's knowledge of selection by revisiting how conditions can be used in programs and then learning how the If… Then… Else structure can be used to select different outcomes depending on whether a condition is true or false.	This is the final unit of programming where pupils will revisit and and bring together elements of all the four programming constructs: sequence from Year 3, repetition from Year 4, selection from Year 5, and variables (introduced in Year 6 – 'Programming A') to overlearn and help keep these in their long term memory.
Vocabulary		Forwards, backwards, turn, clear, go, commands,	Sequence, command, program, run, program, start,	Motion, event, sprite, algorithm, logic, resize, algorithm, move,	Scratch, programming, sprite, blocks, code, loop,	Selection, condition, true, false, count controlled loop,	Sensing, Micro:bit, step counter, transfer, environment,

		Instructions, directions, Left, right, turn, plan, algorithm, program, route.	outcome, predict, blocks, sprite, algorithm, blocks, design, sequence, actions, sprite, blocks, design, modify, change, match, compare, design, debug, program, features, evaluate.	extension block, pen up, set up, event, action, debugging, errors, setup, design, code, set up, test, debug.	repeat, value, block, repeat, forever, infinite loop, countcontrolled loop, costume, repetition, animate, costume, event block, duplicate, block, modify, design, sprite, algorithm, debug, refine, evaluate	outcomes, conditional statement algorithm, program, debug, input, program, implement, design, test, run, program, setup, selection, share, evaluate, constructive.	selection, determine, sense, controllable device, algorithm, bug, emulator, USB, interactive, project, conditions.

Data and information							
Concept	EYFS	YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR	YEAR FIVE	YEAR SIX
Content (NC with local adaptations)		**Grouping Data** Exploring object labels, then using them to sort and group objects by properties.	**Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer.	**Branching databases** Building and using branching databases to group objects using yes/no questions.	**Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	**Flat file databases** Using a database to order data and create charts to answer questions.	**Introduction to Spreadsheets** Using Spreadsheets to organise data.
Substantive Knowledge							
Disciplinary Knowledge							

Why here?/ Why now?		To build on knowledge learned in EYFS to understand what data is and how it can be represented in many forms.	To begin to understand how we collect and analyse data. Linking to their previous maths activities such as voting for books and the daily register.	It allows pupils to develop their understanding of what a branching database is and create one. They will use yes/no questions to gain an understanding of attributes databases.	To grow on pupils understanding of data and extend this to consider how and why data is collected over time. To collect data using input devices called sensors.	Progression from earlier year group content using different types of data and learning more about fields.	Progresses on pupil's knowledge and understanding of data from Yr4 and 5 and teaches them how to organise and modify data within spreadsheets. Introduces spreadsheets in readiness for KS3 curriculum
Vocabulary		Object, label, group, search, image, property, colour, size, shape, data set, value, more, less, most, fewest, the same.	More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, more, less, most, least, more common, least common,	Attribute, value, questions, table, objects, branching database, database, attribute, value, questions, objects, equal, even, separate, compare, organise, order, j2data, selecting,	Data, table (layout), input device, sensor, data logger, logging, data point, interval, data set, import, export, analyse, logged, collection, review, conclusion.	Database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.	Data, format, rows, column, formula, charts, evaluate, duplicate, cell, structure, spreadsheet, cell-reference, operation, multiple cells, calculate, tool, application, table

			attribute, group, same, different, most popular, least popular, conclusion,	pictogram, decision tree.			