Primary Computing Progression Map

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum *Pupils should be taught:*	***Children at the expected level of development will:*** • Describe and demonstrate knowledge of keeping themselves safe, and knowing who to ask for help in a range of different circumstances.	• 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.		• 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.			
	By the end of the year, children should be able to…						
	Data and word processing (Autumn term)						
Skills	-To use the interactive whiteboard to trace and write numbers and letters. -To use the interactive whiteboard to trace and create shapes and patterns. -To use the interactive whiteboard to identify colours. -To use recordable technology to record my speech.	- To open, save and close a word processing document. - To use a keyboard to type. - To safely search for images online. - To format text.	- To open, save and close a PowerPoint document. - To use a search engine for research. - To create a presentation.	-To become familiar with spreadsheets. - To use a spreadsheet to work out calculations. - To use SUM to calculate a total. - To use a spreadsheet to generate a graph.	- To become familiar with spreadsheets. - To use a spreadsheet to perform calculations. - To use a spreadsheet to generate a graph. -To use the skills taught to solve a problem.	- To use a search engine for research. - To select a digital brochure document. - To create a digital brochure.	- To use a search engine for research. - I can familiarise myself with the PowerPoint layout. - To create a PowerPoint presentation.

	-To use recordable technology to record a nursery rhyme.						
Knowledge	-Form letters correctly. -Form numbers correctly. -Draw known shapes. -Create a repeating pattern. -Begin to recognise some shapes. -Identify different colours. -Identify objects with those colours. -Repeat the name of the colours. -Practice spoken sentences. -Speak clearly. -Practice nursery rhymes.	-Use the left sided of the mouse pad to click. -Type their name. -Know how to find saved work. -Find needed letters on a keyboard. -Use the space bar accurately. -Use capital letters and full stops when typing. -Open a web browser. -Select and use Safe Search filters. -Type keywords to find images online. -Save images on a computer. -Know to speak to a trusted adult if something seen or heard online is upsetting or causes worry. -Use a keyboard to type.	-Use the left sided of the mouse pad to click. -Type their name. -Know how to find saved work. -Research online safely. -Use keywords to search. -Make notes on research. -Use a range of media such as text, image and video. -Consider how the presentation looks. -Include transitions and animations.	-Know boxes are called cells. -Can refer to cell references. -Enter data onto a spreadsheet. -Select multiple cells and copy them. -Explain what a formula is. -Know a formula starts with =. -Use the formula to calculate something. -Input data into a spreadsheet. -Write a formula to calculate totals. -Use the quick 'autosum' function to calculate totals quicker. -Select the data intended to be used for a graph. -Select the most appropriate graph to represent data. -Label axis and create a title for the graph.	-Know boxes are called cells. -Enter data onto a spreadsheet. -Format cells. -Move cells. -Explain what a formula is. -Know a formula starts with =. -Use the formula to calculate something. -Enter a formula for a specific purpose. -Copy formulas. -Insert a bar or column graph. -Resize columns and rows. -Choose the correct formula to use. -Follow instructions to solve a problem.	-Search for information on the internet. -Use keywords to search. -Make notes on what has been learnt. -Select a template for a brochure. -Save the work. -Create a title for the brochure. -Choose relevant information to include. -Use subheadings. -Add eye-catching images.	-Search for information on a chosen topic. -Use keywords to search. -Make notes on what is researched. -Add new slides. -Add textboxes. -Insert images. -Choose relevant information to include. -Include animations and transitions. -Add eye-catching images.

		-Change the way writing looks. -Use Word Art.					
Vocabulary	Up, down, around, trace, follow, numbers, letters, circle, square, rectangle, triangle, pattern, red, orange, yellow, green, blue, purple, pink, colours, microphone, record, voice, song, rhyme	Device, symbol, data, delete, program, content, file, folder, window, password, user, username, enter, offline, online, letters, capital, lowercase, keyboard, space bar, shift key, Search, type, safe, filter, Google, Kiddle, search engine, image, keyboard, Word art	Open, save, document, PowerPoint, research, Google, search engine, browser, Chrome, Safari, Kiddle, text, image, video, transition, animation	Table, data, information, cells, cell reference, sheet, row, column, calculate, formula, total, autoSUM, sum, graph, label, axis, title, represent	Table, data, information, cells, cell reference, sheet, row, column, calculate, total, formula, sum, graph, label, axis, title, represent	Research, Google, search engine, browser, Chrome, Safari, Kiddle, layout, brochure, template, title, relevant, subheading, eye-catching	Research, Google, search engine, browser, Chrome, Safari, Kiddle, layout, tools, textbox, transitions, animations, insert, font, slides, design, relevant, eye-catching
Coding and algorithms (Spring term)							
Skills	-To show skills in making toys work by pressing parts to achieve effects such as sounds or movements.	- To understand that instructions can control how and where things move. - To create an algorithm. - To use sequence in an algorithm. - To create an algorithm using sequence and conditions.	- To create basic instructions to move a sprite. - To write a code to move a sprite. - To write a code to move and turn a sprite with a recorded path. - To write a code to draw shapes.	- To use the pen function to draw 2D shapes. - To use repeat blocks to draw shapes efficiently. - To use repeat blocks to draw multiple shapes. - To write a program which uses repeat commands.	- To write and debug a program. - To write and debug a program which uses sequences and repetitions. -To work with variables.	- To create an algorithm for a game. - To use variables in a game. - To add levels to a game. - To add graphics to a game.	- To create appropriate animations. - To structure and control the timing of events. - To control when sprites are visible. - To plan a sequence of events to create a story narrative.
Knowledge	-Use positional language. -Follow directions. -Respond to simple instructions	-Follow instructions to move around a large space.	-Use movement language. -Move the sprite forwards and backwards.	-Program a sprite to pick up and put down a pen. -Program a sprite to move with the pen.	-Write a program using Scratch. -Identify errors and debug a	-Program a sprite to appear and disappear. -Program a sprite to move.	-Select the appropriate sprites to fit within a scene.

		-Give partners instructions to move around a large space. -Predict where a set of instructions will take someone. -Decide where they want Beebots to go. -Decide what instructions are needed to get the Beebot there. -Give instructions to move the Beebot. -Decide how the Beebot will get from a to b. -Think of the steps it will need to take. -Sequence the steps in order. -Understand why an algorithm needs to be in the correct sequence. -Give instructions one step at a time. -Watch the Beebot to check it goes where wanted. -Change instructions if needed.	-Turn the sprite using direction and degrees. -Move the sprite by varying amounts. -Use the pen tool to record the sprite's path. -Use knowledge of shapes to enter correct amounts and rotation. -Debug errors that form in the coding. -Use the pen tool to record the shape.	-Experiment with different size and colour pens. -Program a sprite to draw one side of a shape. -Use a repeat block to set the number of times the side needs to be drawn. -Experiment with different size and colour pens. -Program a sprite to draw shapes using repeat blocks. -Tell a sprite how many times to draw the shape. -Write a program which draws shapes. -Use repeat loops to make patterns. -Use colours and speech to improve the way the patterns look.	program using Scratch. -Decompose a problem into smaller parts. -Write a program using visual programming blocks. -Create a sequence of instructions using Scratch. -Write and debug programs using Scratch. -Use repetition to create an effect. -Program a variable for a sprite in Scratch. -Add features to a sprite in Scratch. -Add to an existing sequence of commands. -Use variables to change the backdrop in a quiz. -Select when to change the variable in the program sequence.	-Program the sprite to disappear once it has been clicked. -Create a score and timer variable. -Program the game to increase the score when a sprite is clicked. -Program the game to count down the time. -Create a level 1 and a level 2 background. -Program the stage to send out a broadcast. -Program the background, timer and sprites to change once they receive the broadcast. -Create background with a message e.g. 'Game over'. -Send out a broadcast when I want the message to be shown. -Tell the game what to do when it receives the broadcast.	-Use costume changes for a motion effect. -Use a repeat command to create gradual movement. -Use a succession of glide commands. -Use the broadcast message block. -Use the receive broadcast block. -Combine broadcasts in the code to sequence actions. -Locate and insert the show and hide blocks into an algorithm. -Locate the correct place for a sprite to appear visible. -Make a sprite invisible when it is not active in a code. -Plan an animated story by selecting appropriate sprites and backdrops. -Plan the sequence of an animated story using timings. -Plan an algorithm to make sprites and backdrops

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							work in a sequence.
Vocabulary	Forwards, backwards, left, right, clear, pause, buttons, stop, wolf, pigs, house, straw, sticks, brick, chimney	Instructions, move, control, algorithm, command, backward, forward, turn, Beebot, sequence	Movement, motion, program, sprite, script, code, command, run, script, debug, algorithm, import, sequence, extension, block, wait, angle, rotate	Sprite, commands, repeat, script, program, loop	Quiz, paper, online, pros, cons, decompose, decomposing, logical, sequence, flowchart, sprite, block, command, key press, answer, algorithm, correct, errors, program, variables, colour, words, effects, costume, size, background, backdrop, sounds, record, play, broadcast	Program, algorithm, sprite, sequence, repetition, score, timer, points, variable, selection, conditional, level, broadcast, sound, background, graphics, graphic screens	Algorithm, animate, animation, coding, control, debug, iteration, looks, motion, project, repeat, sound, broadcast, receive, remix, sequence, deconstruct, hide, invisible, show, visible, backdrops, event, transition, wait
				Stem, Art and DT (Summer term)			
Skills	-To know how to look after technology. -To recognise different technology devices at home and in school.	-To plan an e-book story. -To begin writing the story. -To add images linked to the story. -To move the images to flow throughout the story and writing.	-To begin to create music using selected instruments. -To create a short music piece based on an emotion.	-To write a story. -To take, find and add photos linked with the story. -To create and add sounds linked with the story. -To complete the book and present it.	-To plan and write a script for a virtual tour video. -To record content. -To create a virtual tour video. -To edit my video.	-To plan a stop-motion animation short story. -To photograph the story characters. -To piece the photographs together into a stop-motion animation.	-To explore Sphero robots. -To program a Sphero robot to roll. -To program Sphero robots to move in different directions. -To program Sphero robots using loops.
Knowledge	-Play an interactive game sensibly and safely. -Navigate the interface.	-Create and select a document to type the ideas. -Use phonic sounds when typing their story.	-Select different instruments. -Create a beat with an instrument. -Add a second instrument and layer it over the first instrument.	-Plan what a story will be about. -Add text boxes. -Adjust the size of the box. -Adjust the font and size of the writing.	-Plan what will be recorded. -Plan what people in the video will say.	-Plan what my short story is about. -Plan what characters will need.	-Write a program to get a robot to move. -Create a block program on an app.

	-Identify ways to look after technology. -Identify different technologies. -Identify their uses and functions. -Identify what devices they have at home. -Identify what devices there are at school.	-Use the keypad on the iPad to use capital letter and full stops. -Create and select a document to begin the story. -Open a saved document. -Draw a related image for the story. -Insert a related picture from online for the story. -Take a related photo and insert it into the story. -Select the images and move them in the right place for the story. -Link the writing with the images so the story flows.	-Use instruments linked with a happy/sad/angry emotion. -Create a beat linked with happiness/sadness/anger. -Layer the instruments to create a short piece of music.	-Use the keypad on the iPad to use capital letters and full stops. -Safely use the internet to search for images related to the story. -Save images wanted for the story. -Take photos or draw images linked with the story. -Insert them into the book. -Create sounds linked with the story. -Insert appropriate and linked sounds to the story. -Select the sounds and move them to a relevant part of the story. -Insert a background. -Check the work using the 'Read to me' option when play is selected. -Present the story clearly to others.	-Plan the order the video will be recorded in. -Record all videos in the landscape orientation. -Record steady videos without too much camera shake. -Include important information in the videos. -Upload the recorded videos. -Select the videos wanted to be included. -Order the videos. -Add a soundtrack. -Add effects and transitions. -Add text.	-Plan the background that will be needed. -Move the characters by small amounts. -Capture focused photographs. -Photograph from the same amount. -Select the photographs in the correct order. -Change the transition time between each photograph. -Add a soundtrack.	-Send the program via Bluetooth to a robot and run the program. -Write a program to get the robot to roll. -Construct a Sphero City. -Create a program in the block canvas. Execute the program using Sphero. -Refractor code. -Define and use loops. -Create and execute a Blocks program.
Vocabulary	Touch, tap, scroll, safely, sensibly, careful, iPad, tablet, laptop, computer, camera, headphones, hard drive, USB, printer, microphone, iPod, mouse, memory card, alarm clock,	Document, keyboard, letters, shift key, typing, draw, photo, insert, camera, related, image, move, link	Instrument, select, beat, tempo, pitch, dynamics, layer, emotion, upbeat, strings, drums.	Document, book, keyboard, letters, shift key, typing, adjust, font, size, text box, e-book, draw, photo, insert, camera, image, related, search, internet, save, safe, record, sound, appropriate, relevant,	Plan, virtual tour, script, record, content, landscape, orientation, camera shake, upload, select, recorded, order, edit, soundtrack,	Plan, stop-motion, animation, characters, background, photograph, focus, capture, edit, transition, soundtrack	Program, algorithm, code, Bluetooth, tail light, sensor, LEDs, repeat, delay, refractor, execute, loop

				background, present, adjust	effects, transitions, text		
	smartwatch, phone, console, router						

Online Safety							
Skills	-To understand ways to stay safe online. -To know how to be safe online and when to have screen breaks.	-To consider how people use devices and the internet. -To understand what personal information needs to be kept safe. -To understand how to communicate safely online. -To apply online safety knowledge to help others make good choices.	-To recognise whether a website is appropriate for children. -To understand that the information put online leaves a digital footprint. -To be able to identify the kind and unkind behaviour online. -To explain why personal information is kept private.	-To understand that age restrictions apply on platforms to protect children. -To explore different ways children can communicate online. -To know what cyberbullying is and how to address it. -To create strong passwords and understand privacy settings.	-To know how to be safe online. -To identify how a message can hurt someone's feelings. -To create a safe online profile. -To explain how to be a responsible digital citizen.	-To be alert to risks on the internet. -To understand the benefits and pitfalls of online relationships. -To apply online safety rules to real-life scenarios. -To create strong passwords.	-To understand the benefits and pitfalls of online relationships. -To identify how the media play a powerful role in shaping ideas about girls and boys. -To understand what cyberbullying is. -To apply my online safety knowledge to my online activities.
Knowledge	-Know what the internet is. -Know who can be talked to if something seen is upsetting or frightening, -Know what personal information is. -Know not to share personal information. -Use digital technology sensibly. -Stay safe, happy and healthy online.	-Tell how people can access the internet. -Tell what people use the internet for. -Consider how long should be spent on the internet. -Talk about own personal information. -Recognise what personal information can affect personal information.	-Think about how to identify possible dangers or things which might make someone uncomfortable online. -Identify websites that are suitable for the age. -Identify when to ask an adult for advice about accessing a website. -Know what to do if a website makes someone feel uncomfortable. -Explain what 'digital footprint' means. -Explain how people might use the information put online.	-Understand that age restrictions are in place for a reason. -Know what to do if a website or platform makes someone feel uncomfortable. -Know what trusted adults can be spoken to if worried. -Identify online communities that children are part of. --Identify different forms of online communication. -Discuss the positive and negative aspects	-Identify when to ask an adult for advice about accessing a website. -Know what to do if a website makes the viewer uncomfortable. -Identify who are trusted adults. -Know how to respond to a hurtful message or comment online. -Edit own messages and comments to make	-Understand that there are some people who use the internet irresponsibly. -Understand how to report upsetting content. -Understand why safety rules are in place. -Identify information that should never be shared. -Identify personal information. -Explain why someone might	-Explain why someone might have an online friendship. -Explain what to do if someone is asked or told something online that makes them uncomfortable. -Explain some of the dangers of revealing personal information. -Know what a stereotype is. -Understand how a stereotype can be harmful.

	-Know that too much time should not be spent using digital technology.	-Know who to tell if someone asks for personal information. -Explain what each letter of SMART stands for. -Spot when something online might not be safe. -Explain what to do if something online is not safe or upsetting. -Make links between the offline and online world. -Recall some online safety skills learnt. -Recognise potential dangers online. -Use online safety knowledge to decide what to do in different situations. -Guide others to make safe choices online.	-Explain how a digital footprint contains information about a person. -Identify unkind online behaviour. -Know what to do if it is believed someone is being unkind online. -Know who to report to if something worrying or upsetting is seen online. -Understand what personal information is. -Explain how to keep personal information private online. -Discuss why it is important to do this.	of online communities. -Discuss differences between communication in real life and online. -Recognise cyberbullying. -Identify a safe person to tell if cyberbullying is encountered. -Know that cyberbullying can happen via a range of devices. -Create a string password. -Explain why a strong password is important. -Explain what privacy settings are.	sure they are not being unkind. -Say how people should respond to hurtful messages online. -Explain why other people may be hurt by messages or comments. -Identify the information that shouldn't be shared online. -Know why it is dangerous to share certain information. -Understand why some websites ask for registration information. -Explain what digital citizenship is. -Explain how to be a good citizen in real life and online.	have an online friendship. -Explain what to do if someone is asked or told something online which makes someone feel uncomfortable. -Explain some of the dangers of revealing personal information to an online friend. -Explain how to stay safe online. -Give an example of unsafe online behaviour and the possible consequences. -Explain how to apply online safety rules to a given scenario. -Explain the rules for creating a strong password. -Create a strong password using a set of rules. -Explain why having a strong password is important.	-Compare gender stereotypes. -Identify a gender stereotype in a media message. -Find similarities and differences between bullying and cyberbullying. -Identify good strategies to deal with cyberbullying. -Say what bullying and cyberbullying are. -Suggest ways in which people can deal with cyberbullying. -Know why cyberbullying can be as harmful as in-person bullying. -Identify a situation people should be careful of online. -Choose an appropriate action online to stay safe. -Know what the SMART acronym means.
Vocabulary	Screen, screen time, mobile phone, tablet, laptop, computer, games console, television, TV, films, TV shows,	Safe, interests, hobbies, time, online, access, screen time, meet, accept, reliable, tell, trusted, adult, digital, internet,	Safe, online, access, dangers, suitable, uncomfortable, internet, website, secure, cyberbullying, personal information, internet, private, name, surname,	Safe, online, access, suitable, uncomfortable, trusted, restrictions, age appropriate, platform, cyberbullying/bullying,	Safe, online, access, trusted, suitable, uncomfortable, actions, e-safety, profiles, social media, account,	Safe, report, network, content, concern, trusted, online, spam, email, scam, virus, citation, plagiarism, copyright,	Private, personal, instant messaging, safe, dangers, benefits, pitfalls, cyberbullying, reporting, anonymous, victim,

computer games, health, safe, online, digital, technology	danger, SMART, meet, danger, email	address, school, birthday, password	digital, device, email, social media, posts, comments, website, internet, password, secure, privacy, settings, protect	register, private, public, digital citizenship, responsibility	passwords, personal information, photographs, editing, social medial, comic, secure, account, private	SMART, attachments, email, website, secure, acronym.