Federation of Spixworth Schools Computing Skills Progression				
		Reception ELG	**KS1**	
Curriculum		**Communication and Language - Listening , Attention and Understanding** • Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions; • Make comments about what they have heard and ask questions to clarify their understanding; **Expressive Art and Design - Creating with Materials** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; • Share their creations, explaining the process they have used; Although technology no longer has its own individual aspect, it is still expected that children are given opportunities to explore a range of technologies from within different area of learning. This might be using programmable toys in mathematics, tablets to access audio books in literacy or using cameras to record things they find in nature in understanding the world.	• 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.	
Coverage		**A Reception Computer Scientist can:**	**A Year 1 Computer Scientist can:**	**A Year 2 Computer Scientist can:**
Digital Literacy	E-Safety	Know there are rules for computer and internet use Know who can help if they are unsure of what they see online	Agree sensible e-safety rules for the classroom Keep passwords private Tell an adult Be kind and polite in real life and on the internet Use technology safely	Apply consistently classroom e-safety rules Keep passwords and private information safe Know what to do – report Know the right to choose what information is shared Know who sees your work online
	Technology in our Lives	Complete offline and online puzzles Use devices to play games Share information on Tapestry	Complete offline and online puzzles Use devices to play games Share information on Tapestry Recognise different forms of electronic communication (e.g. email, twitter etc)	Search for information Save and receive data Talk about the validity of online information Communicate safely and accurately (e.g. composing email)

Computer science	Programming	Understand forward and backward Floor robots – Explore functions Apps – recognise appropriate icons to complete an action	Understand left and right Floor robots – algorithms Apps – Beebots, moving	Understand whole, half and quarter turns Floor robots – debugging Apps – Beebots, drawing shapes
Information Technology	Multimedia	Explore and interact with their environment using a range of equipment Use keyboard commands inc spacebar, letter and numeral keys, backspace Create pictures electronically	Use cameras to record images Add text to work Create original content Use keyboard commands inc enter and space bar to create spaces between words Recognise painting tools and how to use them	Input images to text Create moving animation Create a news report using video Create and edit text inc italics, bold, font size and colour Create pictures independently using a range of tools
	Handling Data	Know that technology can collect information and begin to use it for this purpose	Collect information on a topic Sort information (Venn/pictograms)	Use branching database Present information

Federation of Spixworth Schools
Computing Skills Progression

		KS2			
Curriculum		• 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.		
Coverage		**A Year 3 Computer Scientist can:**	**A Year 4 Computer Scientist can:**	**A Year 5 Computer Scientist can:**	**A Year 6 Computer Scientist can:**
Digital Literacy	E-Safety	Choose a secure password for age-appropriate websites Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time	Understand the importance of having a secure password and not sharing this with anyone else Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time	Discuss their own personal use of the Internet and choices they make Discuss how to protect devices from virus threats Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns Explore using the safe and responsible use of online communication tools e.g.	Demonstrate the safe and respectful use of a range of different technologies and online services by being a good online citizen and friend Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns

		Use a class blog to share information and talk about who can see it, and how to communicate safely and respectfully	Use a class blog to share information and talk about who can see it, and how to communicate safely and respectfully Comment and provide positive feedback on the work of classmates in school or online, or the work of others online	blogs, messaging	Explore using the safe and responsible use of online communication tools e.g. blogs, messaging Recognise the value in preserving their privacy when online for their own and other people's safety.
	Key Vocabulary	*safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public.*		*spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal*	
	Technology in our lives	Save work on the school network, on the Internet and on individual devices Talk about world wide web as the part of the internet that contains websites; Use appropriate tools to collaborate and communicate on-line Use simple search tools and find appropriate websites Talk about the owner of information online	Talk about the school network & the different resources they can access, including the Internet Understand the function, features and layout of a search engine. Check who the owner is before copying photos, clipart or text Consider reliability of information & ways it may influence you	Identify different parts of computing devices. Identify different parts of the Internet Choose appropriate tools for communication and collaboration and use them responsibly Use effective strategies to search with appropriate search engines Talk about the different elements on web pages Find out who the information presented on a webpage belongs to.	Describe different services provided by the Internet & how information moves around the Internet Describe different parts of a computing device & how it connects to the Internet Connect a computing device to a keyboard, mouse or printer Identify appropriate forms of online communication for different audiences. Use search engines as part of an effective research strategy Describe how search results are selected & ranked Acknowledge who resources belong to that they have found on the internet
	Key vocabulary	*filter, G* *oogle, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media*		*world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.*	
Computer science	Programming	Turn a real life situation into an algorithm for a program by deconstructing it into manageable parts Create designs for their programs to show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures.	Write a program, putting commands into a sequence to achieve a specific outcome; Give a set of instructions to follow and predict what will happen; Keep testing a program and recognise when it needs to be debugged;	Explore procedures using repeat to achieve solutions to problems with Logo & a floor robot Talk about procedures as parts of a program Refine procedures to improve efficiency Use a variable to replace number of sides in a regular shape	Record in some detail the steps (the algorithm) that are required to achieve an outcome & refer to this when programming Predict the outputs for the steps in an algorithm Increase confidence in the process to plan, program, test & review a program

		Make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this 'Read' programs with several steps and predict the outcome accurately. Test & improve / debug programmed sequences. Begin to type logo commands to achieve outcomes. Explore outcomes when giving sequences of instructions in Logo software Create an algorithm to tell a joke or a simple story	Design their programs to show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. Can trace a code and use step-through methods to identify errors in code and make logical attempts to correct this Link the use of algorithms to solve problems to work in Maths, Science & DT.	Explore instructions to control software or hardware with an input & using if... then... commands Explore a computer model to control a physical system Change inputs on a model to achieve different outputs Refine & extend a program Identify difficulties & articulate a solution for errors in a program Group commands as a procedure to achieve a specific outcome within a program Write down the steps required (an algorithm) to achieve the outcome that is wanted and refer to this when programming.	Write a program which follows an algorithm to solve a problem for a floor robot or other model Write a program which follows an algorithm to achieve a planned outcome for appropriate programming software Control on screen mimics & physical devices using one or more input & predict the outputs Understand how sensors can be used to measure input in order to activate a procedure or sequence & talk about applications in society Create variables to provide a score/trigger an action in a game Link errors in a program to problems in the original algorithm
	Key Vocabulary	*decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.*		*flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise.*	
Information Technology	Multimedia Sound and motion	Explore & begin to evaluate the use of multimedia to enhance communication Create & begin to edit presentation documents & text, experimenting with fonts, size, colour, alignment for emphasis & effect Use a range of effects in art programs including brush sizes, repeats, reflections Explore the use of video, animation & green screening Use ICT tools to create musical phrases Amend text & save changes. Use individual fingers to input text & use SHIFT key to type characters Amend text by highlighting & using SELECT/ DELETE & COPY/ PASTE Look at own work & consider how it can be improved for effectiveness	Explore how multimedia can create atmosphere & appeal to different audiences Be confident in creating & modifying text & presentation documents to achieve a specific purpose Use art programs & online tools to modify photos for a specific purpose using a range of effects Explore the use of video, animation, & green screening for a specific audience Use ICT tools to create music phrases for a specific purpose Use a keyboard effectively, including the use of keyboard shortcuts Use font sizes & effects such as bullet points appropriately Know how to use a spell check	Select an appropriate ICT or online tool to create and share ideas. Explore the effects of multimedia (photos, video, sound) in a presentation or video and show how they can be modified Develop skills using transitions and hyperlinks to enhance the stricture of presentations Use a wide range of effects in art programs and online tools, discussing the choices made and their effectiveness Know how to use text and video editing tools in programs to refine their work Use online tools to create and share presentations and films	Identify the purpose for selecting an appropriate online tool Discuss audience, atmosphere and structure of a presentation or video Collect information and media from a range of sources (considering copyright issues) into a presentation for a specific audience Use sound, images, text, transitions, hyperlinks and HTML code effectively in presentations Store presentations and videos online where they can be accessed by themselves and shared with others Evaluate the effectiveness of their own work and the work of others

			Look at their own, and a friend's work & provide feedback that is constructive & specific		
	Key Vocabulary	*audio, sound, video, movie, embed, link, file format, animate, animation, still image, flip book, frame, loop, frame rate, record, stop, play, stop motion, stop frame.*		*window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement, guide.*	
	Handling Data	Find out information from a pre-prepared database, asking straightforward questions Contribute towards a database Construct and use a branching database Record data in a variety of ways Present data for others Use a data logger to monitor changes and talk about the outcomes seen	Plan and create a database to answer questions Identify different types of data Ask questions carrying out simple searches on a database Identify inaccurate data Present data in appropriate format for an audience Use a data logger to record and compare individual readings.	Collect and record information using spreadsheets and databases Carry out complex searches (e.g. using and/or; ≤ / ≥) Solve problems and present answers using data tools Analyse information and question data Identify poor quality data. Select appropriate use of a data logger for an investigation and interpret the findings	Use the whole data process – generate, process, interpret, store, and present information – realising the need for accuracy and checking plausibility Select appropriate data tool Identify and present results Interrogate a database, refining searches to provide answers to questions Plan investigations using the outcomes from a data logger to show findings
	Key Vocabulary	*Google Docs, insert, table spreadsheet, cell, row, column, formula/formulas, calculate, format, edit*		*Google Docs, insert, table, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending*	