Computing Progression Grid

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
E-Safety	To talk about ICT apparatus, what it does, what they can do with it and how to use it safety	Discuss and ask questions about how technology works and how to use it safety in order to develop digital literacy skills Know the they need to stay safe when using technology I know what to do if upset at school/at home.	To safely search for images online To understand how to communicate safely online To explain how to be SMART online To sort personal information into safe and not safe to share	To understand how to safely search using search engines To recognise whether a website is appropriate for children To keep personal information private To be able to identify kind and unkind behaviour online	Know that anyone can publish anything on the internet, so when using search engines there is a risk of accidentally finding content that can concern you To know what cyberbullying is and how to address it To create strong passwords and explain why strong passwords are important To identify online communities I am a part of To identify forms of online communication	Knows about unacceptable comments include deliberately mean/upsetting comments sent to get a reaction ('trolling') and spam comments which offer sales or link sales to your post. To identify the information that I shouldn't share online To create a safe online profile To explain how to be a responsible digital citizen	Use technology safely, respectfully and responsibly Recognise acceptable/ unacceptable behaviour Know a range of ways to report concerns and inappropriate behaviour To identify spam emails and what to do with them To explain how false photographs can make people feel bad about themselves To demonstrate ways to build positive and healthy online relationships and friendships	Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact To identify secure websites by identifying privacy seals of approval To identify information that I should never share online To choose appropriate actions to stay safe online To identify different types of online scams, including phishing
Vocab	Computer, safety,	Technology, safety, digital	Internet, Safe, Unsafe, Safe adults, Stranger, Choices, Website, App, Rules, Online, Private information, Email, Appropriate/inappropriate	Internet, Safe, Unsafe, Safe adults, Stranger, Choices, Website, App, Rules, Online, Private information, Email, Appropriate/inappropriate sites, Cyberbullying,	Website, Private, Public, Contact, Acceptable, Unacceptable, E-safety rules, Secure passwords Report abuse button, online communication	Website, Private, Public, Contact, Acceptable, Unacceptable, E-safety rules, Secure passwords, Report abuse button, trolling, spam,	Consequence, Report, Social media, Concerns, Responsible online communication, Informed choices, Virus threats, Messaging, spam,	Consequence, Report, Social media, Concerns, Responsible online communication, Informed choices, Virus threats, Messaging, privacy, scams, phishing
Computer	To push buttons or screens, turn	To show interest in cause and effect	An algorithm is a set of step-by-step instructions to solve a	An algorithm is a sequence of instructions to complete a task. Sets	Can read a programming sequence using	Know and understand the definitions of the key vocabulary, and	To program buttons to set or change the speed	Make programs using more complex algorithms, selecting when to use sequences, selection,

Science	knobs, lift flaps, using remote controls	equipment by : pushing buttons/ screens, turning knobs, lifting flaps, using remote controls To program toys by giving them a set of instructions Programme a Bee-bot or similar, one instruction at a time and clear it at the end	problem or complete a task. A computer program is a sequence of instructions that can be followed by a computer To combine start events and click events to make a simple game To understand that when you run a program, the computer executes code To program an object to hide when it is clicked on To program an object to stop when it is clicked on To program a Bee-Bot to follow an algorithm Debugging means finding and correcting mistakes in a computer program algorithm To practise debugging code	of directions or movements are an example of an algorithm. Programs are sequences of code - precise instructions (or a set of rules) that can be understood and followed by a computer To program objects to move by pressing and releasing either the mouse button or a key on the keyboard To create a loop (repeating set of instructions) To practise debugging code Implement algorithms as programs using block-based programming (Scratch). To use a repeat instruction to make a sequence of instructions run more than once To create programs that play a recorded sound	algorithms (instructions) Make predictions about algorithms Computers can be programmed to run the same code repeatedly. This is called repetition. Using repetition makes programs quicker to write To know that computers need to receive information to work To code a sequence of commands To use a timer event to control a sequence To create an animated scene To program a set of traffic lights To identify input and output devices To use a conditional event to program more than one object at a time (selection) To debug code	in particular: background, code, bug, debug, sprite, and algorithm To use variables to create a counter that responds to conditional events To use variables to create a more complex scoring system, including negative values To create a scoring game To program a shop till Understand how computers use repetition and loops to do things over and over again To use a variable to create a timer Understand that code can be made to execute in a particular order called a sequence Debug programs	of an object To use positive and negative values To use keyboard inputs to change the speed and direction of an object To set values and use coordinates to control the movement of an object To test and debug programs To generate random numbers to control an object's speed To program an object to move in random directions and appear in random places To use different ranges of numbers to program objects to have different speeds and movements To create a virtual pinball game	repetition and a range of inputs and outputs To use variables to affect the difficulty of a game To combine variables with conditional events To use variables to perform calculations To use Boolean expressions To decompose problems and plan, write and test their algorithms and programs, detecting and correcting errors as needed Can give a well-thought-through explanation of any errors they identify in program code. The child can suggest how this can be debugged / fixed To use random numbers, variables and conditional events to affect an object's properties To detect properties of objects and apply these to other objects To detect the speed and direction of the mouse and pass these onto objects
Vocab	Push, press, buttons,		Device, Outcome, Instruction,	Predict, Effect, Precise, loop, Forward, Backward,	Code, Sequence instructions, Sequence	background, code, bug, debug, sprite,,	Control, Explore procedures, Refine	Design, Build, Evaluate, Modify, Purpose, Predict outputs, Plan, program, test

	remote control, devices		Equipment, Buttons, Movement, Instructions, Robots, Patterns, Program	Right-angle turn, Algorithm, Sequence, Debug	debugging, commands, input and output devices, repetition, program	algorithm, Software, Refine, Command, Error, repetition and loops, variables, sequences	procedures, Variable, Hardware, software control, inputs, outputs, solutions, values, debug	& review a program, Program writing, Control mimics + devices, Sensors, Measure input, Create variables, Link errors
Digital Literacy		Use a keyboard and mouse with developing control Access and use simple activities using touch technology with increasing control. Know how to log off the computer	To understand that MS Word can be used to type text and save documents Can create a document using different font styles, sizes and colours and format text (underline, bold, italics) To create a digital fact file To save and retrieve digital content To identify information technology in jobs	To understand that MS PowerPoint can be used to create digital presentations To insert and format the layout of slides To insert images by copying and pasting To add animations to images and text boxes To add transitions to slides To save and retrieve digital content Can create a presentation including slides, text, images, transitions and animation	To understand that MS Word can be used to type and compose text and use this effectively to create documents To use <ctrl> keyboard shortcuts To align text To use bullet points To insert images by using text wrapping To create a plan for a digital quiz To insert and format text boxes Recognise common uses of information technology beyond school To understand that MS PowerPoint can be used to create digital branching quizzes	Is familiar with blogs as a medium and a genre of writing. Understands that information they put online leaves a trail, or what is called a digital footprint Create a sequence of blog posts on a theme. Comment on the blog posts of others, showing an understanding of how to do so safely and responsibly Incorporate additional media into a blog post, such as images, audio or video. Use search technologies to find relevant and appropriately licensed media for a blog post. Develop a critical reflective view of a	Know that the Internet and the World Wide Web are different and understands how / what they are. Knows that a podcast is a downloadable recording and how it is broadcast To know what features make good quality audio content	Understand that there are different kinds of responsibilities and rights, and that they can sometimes conflict with one another Understand why and how rules and laws are made and enforced, and why different rules are needed in different situations Think critically, behave safely and participate responsibly in the digital world Have an awareness of online rights and responsibilities among younger people Know what to do if someone violates their rights Know the rights of social media companies using terms and conditions and why we need to be aware of them. Know that we need to develop resilience online and how can terms and

						range of media, including text		conditions help to empower us Know our rights as young people using social media and why we need to be aware of them. Know what are terms and conditions and why do we read them carefully
Vocab		Computer, mouse, keyboard, tablet, log on, log off	Software, document, keyboard, monitor, type, font, style, underline, bold, italics, save, retrieve	Digital presentations, insert, format, layout, animations, images, text boxes, slides, transitions, text, save, retrieve,	Text ,keyboard, shortcuts, align text, insert images, text boxes, text wrapping,	Blog, digital footprint, images, audio, microphone, video, Reliability, Recording	Internet, world wide web, Connected, networks, Computing devices, Internet parts, Searching strategies, Webpages, podcast, recording, audio	Google, search engines, credibility, reliability, violations, rights, terms and conditions, responsibilities, laws, enforced, digital world
Multimedia		To complete a simple program on electronic devices (digital games, painting, etc.) To use ICT hardware to interact with age-appropriate computer software Use technology for a particular purpose (use IWB to play interactive games, use Ipad /cameras for	Analogue media is real-world traditional media like paint and paper, and digital media is media on a computer (stored as numbers). Bitmap digital images are images made up of lots of dots called pixels. Saving your image means storing it (as numbers) in the devices memory. To paint with different colours, different brushes, create shapes and fill	To understand that MS Paint can be used create digital art Saving your image means storing it (as numbers) in the computer / device To change the colour and size of dots, draw lines and fill spaces with colour, rotate, resize and colour shapes, produce lighter and darker shades of a colour, duplicate and alter colours of an image Can program buttons to control other objects and add and name new buttons on the design	Digital cameras and digital devices that take photographs are a common use of information technology beyond school. A pixel is a picture element - one of the small, square dots that make up a digital image. Can edit and enhance photographs, including cropping and straightening	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 To understand how simple animation techniques work Create a stop-motion	Plan own podcast Record own podcast using tablets Construct a simple interview and record it Insert appropriate sound effects Suggest improvements to audio content	Can create documents and presentations with a common design theme; consistency of font and style, alignment of text left, right and centre to improve the presentation of text Can use text, photo, sound and video editing tools to refine their media/content Can insert a graph in a document / presentation to share findings with others. To plan additional elements for film-making such as locations and props To evaluate whether

		taking photos/ videos	areas, add text to a painting To save and retrieve digital content To create a digital poster	screen To save and retrieve digital content		animation To explain how computer software has improved animation techniques To peer assess using an online tool		information is reliable or not To speak clearly into the camera when being recorded To frame an appropriate filming shot when interviewing To arrange video files to form a complete film using video software
Vocab			Digital media, pixels, images, memory, save, retrieve,	digital art, images, rotate, shades, duplicate, screen, save, retrieve	Digital camera, photos, pixels, digital image, cropping, straightening,	Animation, techniques, photographs, focus, position,	Collaboration, Responsibility, Searching strategies, Webpages, podcast, recording, audio	Presentation, documents, photographs, illustrations, diagrams, text, font, alignment, style, editing, e book,
Data Handling				To use a simple pictogram or painting program to develop simple graphical awareness, as a class		To insert data into a spreadsheet To identify data attributes and data values To use the Sort & Filter tool To use a formula to calculate data	To collect, analyse, evaluate and present data and information To understand and demonstrate the need for accuracy when creating databases. To relate and discuss the use of spreadsheets to situations in the wider world To enter data and formulas into a spreadsheet To present data based on calculations by inserting a graph	

						To use formulas to calculate totals and averages To sort data by different criteria To create a formula to solve a specific problem (using figures and cell references) To replicate formulas over several cells To plan and calculate a spending budget	
Vocab			Pictogram, Graph, Data, Collect, Count, Organise survey		Data, Data loggers, software, programs, collecting, analysing, evaluating, presenting, technology, database	Data, spreadsheet,, software, programs, collecting, analysing, formulas, evaluating, presenting, graphs, criteria, cells	
Computer Networks and the Internet		To safely search for images online	To use search engines and websites appropriate for children	To use a child appropriate search engine to research a specific topic To identify how word order affects search results To evaluate digital content (websites)	To choose a relevant website to link my document to A URL is the location of a resource, such as a web page or image, on the internet. Hyperlinks are texts or images that link (open or move to) other content when clicked	To name devices on a computer network To explain the purpose of certain devices on a computer network To simulate how the internet provides access to the WWW To create a search index To simulate how search engines rank results To evaluate webpages	Know that Google (and other search engines) select results based on the keywords typed in. Understand that search engines also select results based on the number and quality of inbound links. Use search technologies to find information on a topic
Vocab			Information sources, website, search engine,	Information sources, website, search engine,	HTML (Hyper Text Mark-up Language,	Search, Search engine, Accuracy, Connected,	Search, Search engine, Accuracy, Connected,

			search, Website content	search, Website content, content,	ULR – universal resource locator Hyperlinks, websites	networks, Computing devices, Internet parts, Collaboration, Responsibility, Searching strategies, Webpages	networks, Computing devices, Internet parts, Collaboration, Responsibility, Searching strategies, Webpages