Computing Progression Document

Digital Literacy (E – SAFTY, web research, searches)				
This details internet safety, as well as how technology can be used safely and responsibly.				
Reception	Year 1	Year 2	Year 3 and Year 4	Year 5 and Year 6
Talk about good & bad choices in real life e.g. taking turns, saying kind things, helping others, telling an adult if something upsets you	Understand they need to follow certain rules to remain safe when visiting places online	Stay safe online by choosing websites that are good for them to visit & not inappropriate sites	Agree sensible e-safety rules for the classroom	Agree sensible e-safety rules for the classroom
Play appropriate games on the Internet	Begin to understand that if you creative something you own it	Explore what cyber-bullying means & what to do when they encounter it	Choose a secure password for age-appropriate websites	Discuss their own personal use of the Internet and choices they make Discuss how to protect devices from virus threats
Talk about good and bad choices when using websites – being kind, telling a grown up if something upsets us & keeping ourselves safe by keeping information private	Learn that many websites ask for information that is private & discuss how to responsibly handle such requests	Know that if they put information online it leaves a digital footprint or "trail" & they need to manage it so it's not hurtful	Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button	Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns
Recognise purposes for using technology in school and at home	Explore how email can be used to communicate with real people within their schools, families & communities	Understand that keyword searching is an effective way to locate online information & how to select keywords to produce the best search results	Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time	Explore using the safe and responsible use of online communication tools e.g. blogs, messaging

Understand that things they create belong to them and can be shared with others using technology	Learn that directory sites with alphabetical listings offer one way to find things on the Internet	Discuss criteria for rating informational websites a site.	Use a class blog to share information and talk about who can see it, and how to communicate safely and respectfully	Identify different parts of computing devices.
Recognise that they can use the Internet to play and learn	Recognise uses of technology in their homes and in their community	Realise that not all websites are equally good sources of information	Comment and provide positive feedback on the work of classmates in school or online, or the work of others online	Describe different services provided by the Internet & how information moves around the Internet
	Understand that there are online tools that can help them create and communicate	Begin to understand there are a variety of sources of information and begin to recognise the differences	Talk about the school network & the different resources they can access, including the Internet	
		Save work on the Begin to understand what the Internet is and the purposes that it is used for school network, on the Internet and on individual devices		

Computer Science
This will focus on algorithms and debugging in a child friendly and practical way. This will also look at the uses of the internet and how networks are important in the world we live in today.

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Help adults operate equipment around the school, independently operating simple equipment	Physically follow & give each other instructions to move around	Physically follow and give each other forward, backward & turn (right-angle) instructions	Plan & enter a sequence of instructions on a robot specifying distance & turn to achieve specific outcomes, debug the sequence where necessary	Create & edit procedures typing logo commands including pen up, pen down & changing the trail of the turtle	Explore procedures using repeat to achieve solutions to problems with Logo & a floor robot	Record in some detail the steps (the algorithm) that are required to achieve an outcome & refer to this when programming
Use simple software to make things happen	Explore outcomes when buttons are pressed in sequences on a robot	Articulate an algorithm to achieve a purpose	Test & improve / debug programmed sequences.	Use sensors to 'trigger' an action such as turning the lights on using Probot if it 'goes through a tunnel', or reversing if it touches something	Talk about procedures as parts of a program	Predict the outputs for the steps in an algorithm
Press buttons on a floor robot and talk about the movements	Begin to use software to create movement & patterns on a screen	Plan and enter a sequence of instructions to achieve an algorithm, with a robot specifying distance & turn and drawing a trail	Begin to type logo commands to achieve outcomes.	Solve open-ended problems with a floor robot, Logo & other software using efficient procedures to create shapes & letters	Refine procedures to improve efficiency	Increase confidence in the process to plan, program, test & review a program
Explore options and make choices with toys, software and websites	Begin to identify an algorithm to achieve a specific purpose	Explore outcomes when giving instructions in a simple Logo program	Explore outcomes when giving sequences of instructions in Logo software	Experience a variety of resources to extend knowledge & understanding of programming.	Use a variable to replace number of sides in a regular shape	Write a program which follows an algorithm to solve a problem for a floor robot or other model

	Execute a program on a floor robot to achieve an algorithm	Watch a Logo program execute & debug any problems	Use repeat to achieve solutions to tasks	Create an algorithm & a program that will use a simple selection command for a game	Explore instructions to control software or hardware with an input & using if... then... commands	Write a program which follows an algorithm to achieve a planned outcome for appropriate programming software
	Use the word debug to correct any mistakes when programming a floor robot	Predict what will happen & test results	Solve open-ended problems with a floor robot & Logo including creating simple regular polygons, making sounds & planning movements such as a dance	Begin to correct errors (debug) as they program devices & actions on screen, & identify bugs in programs written by others	Explore a computer model to control a physical system	Control on screen mimics & physical devices using one or more input & predict the outputs
	Begin to predict what will happen for a short sequence of instructions in a program	Talk about similarities & differences between floor robots and logo on screen	Create an algorithm to tell a joke or a simple story	Use an algorithm to sequence more complex programming into order	Change inputs on a model to achieve different outputs	Understand how sensors can be used to measure input in order to activate a procedure or sequence & talk about applications in society
			Sequence pre-written lines of programming into order	Link the use of algorithms to solve problems to work in Maths, Science & DT.	Refine & extend a program	Create variables to provide a score/trigger an action in a game

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Talk about algorithms planned by others & identify any problems & the expected outcome		Identify difficulties & articulate a solution for errors in a program	Link errors in a program to problems in the original algorithm
					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.	

Information Technology						
This details the use of computers to create and alter media and information. Here they will create videos, comic strips, music spreadsheets and posters						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Use a mouse to rearrange objects and pictures on a screen	Record their own voices and play back to an audience	Use an increasing variety of tools and effects in paint programs and talk about their choices	Explore & begin to evaluate the use of multimedia to enhance communication	Explore how multimedia can create atmosphere & appeal to different audiences	Select an appropriate ICT or online tool to create and share ideas.	Identify the purpose for selecting an appropriate online tool

Recognise text, images and sound when using ICT	Use a video or stills camera to record an activity	Use templates to make electronic books individually and in pairs	Create & begin to edit presentation documents & text, experimenting with fonts, size, colour, alignment for emphasis & effect	Be confident in creating & modifying text & presentation documents to achieve a specific purpose	Explore the effects of multimedia (photos, video, sound) in a presentation or video and show how they can be modified	Discuss audience, atmosphere and structure of a presentation or video
Use a camera or sound recorder to collect photos or sound	Create sounds and simple music phrases using ICT tools	Explore the effects of sound and music in animation and video	Use a range of effects in art programs including brush sizes, repeats, reflections	Use art programs & online tools to modify photos for a specific purpose using a range of effects	Develop skills using transitions and hyperlinks to enhance the stricture of presentations	Collect information and media from a range of sources (considering copyright issues) into a presentation for a specific audience
Use paint programs to create pictures	Add text and images to a template document using an image & word bank	Create own documents, adding text and images	Explore the use of video, animation & green screening	Explore the use of video, animation, & green screening for a specific audience	Use a wide range of effects in art programs and online tools, discussing the choices made and their effectiveness	Use sound, images, text, transitions, hyperlinks and HTML code effectively in presentations
Begin to use a keyboard see programming	Use index fingers (left and right hand) on a keyboard to build words &sentences	Use keyboard to enter text (index fingers left & right hand)	Use ICT tools to create musical phrases	Use ICT tools to create music phrases for a specific purpose	Know how to use text and video editing tools in programs to refine their work	Store presentations and videos online where they can be accessed by themselves and shared with others

Develop an interest in ICT by using age appropriate websites or programs	Know when & how to use the SPACE BAR (thumbs) to make spaces between words	Know when and how to use the RETURN/ ENTER key. Use SHIFT & CAPS LOCK to enter capital letters. Use DELETE & BACKSPACE buttons to correct text. Create sentences, SAVE & edit later	Amend text & save changes.	Use a keyboard effectively, including the use of keyboard shortcuts	Use online tools to create and share presentations and films	Evaluate the effectiveness of their own work and the work of others
Collect information as photos or sound files	Take photographs, video and record sound to record learning experiences	Take and save photographs, video & record sound to capture learning	Use individual fingers to input text & use SHIFT key to type characters	Use font sizes & effects such as bullet points appropriately	Collect and record information using spreadsheets and databases	Use the whole data process – generate, process, interpret, store, and present information – realising the need for accuracy and checking plausibility
Use a simple pictogram or set of photos to count and organise information	Look at how data is representing digitally	Use microscopes or other devices to capture and save magnified images	Amend text by highlighting & using SELECT/ DELETE & COPY/ PASTE	Know how to use a spell check	Carry out complex searches (e.g. using and/or; ≤ / ≥)	Select appropriate data tool
	Contribute to and interpret a pictogram	Ask questions and consider how they will collect information	Find out information from a pre-prepared database, asking	Look at their own, and a friend's work & provide feedback that is constructive & specific	Solve problems and present answers using data tools	

			straightforward questions		
		Collect data, generate graphs and charts to find answers	Contribute towards a database	Plan and create a database to answer questions	Analyse information and question data	Identify and present results
		Save & retrieve the data to show to others	Construct and use a branching database	Identify different types of data	Identify poor quality data.	Interrogate a database, refining searches to provide answers to questions
		Create paper/ object decision trees & explore a branching database	Record data in a variety of ways	Ask questions carrying out simple searches on a database	Select appropriate use of a data logger for an investigation and interpret the findings	Plan investigations using the outcomes from a data logger to show findings
		Investigate different types of digital data e.g. online encyclopaedias	Present data for others	Identify inaccurate data Present data in appropriate format for an audience		

Computing Vocabulary Progression Reception – Yr6

Computing is split into 3 different categories: **Computer Science**, **Digital Literacy** and **Information Technology**.

Below is the vocabulary progression from Reception until they leave us in Year 6.

Computer Science						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Equipment Buttons Movement	Instructions Buttons Robots Patterns Program	Forward Backward Right-angle turn Algorithm Sequence Debug Predict	Sequence instructions Sequence debugging Test + improve Logo commands Sequence programming	Type + edit logo commands Sensors Open-ended problems Bugs in programs Complex programming	Explore procedures Refine procedures Variable Hardware + software control Change inputs Different outputs Articulate solutions Commands	Predicting outputs Plan, program, test & review a program Program writing Control mimics + devices Sensors Measure input Create variables Link errors

Digital Literacy						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Technology Share Create Internet Screen Mouse Images Keyboard Paint Choices Internet Website	Purpose Online tools Communicate Videos Camera stills Sounds Image bank Word bank Space bar Rules Online Private information Email	Information sources Communication Purposes Website content Paint effects Templates Animation Documents Index finger typing Enter/return Caps lock Backspace Appropriate/inappropriate sites Cyber-bullying Digital footprint Keyword searching	School network Devices Computer parts Collaborate Appropriate online communication Search tools Appropriate websites Owner Multimedia Presentations Alignment Brush size Repeats Reflections Green screening Amend Copy Paste E-safety rules Secure passwords Report abuse button Gaming Blogs	Different networks Information collection Reliability Owners Creating + modifying Specific purpose Photo modifying Keyboard shortcuts Bullet points Spell check Constructive feedback E-safety rules Secure passwords Report abuse button Gaming Blogs	Computing devices Internet parts Collaboration Responsibility Searching strategies Webpages Online sharing Multimedia effects Multimedia modification Transitions Hyperlinks Editing tools Refining Online sharing Responsible online communication Informed choices Virus threats Blogs Messaging	Information movement Connecting devices Different audiences Research strategies Search result rankings Acknowledge resources Appropriate online tools Audience Atmosphere Structure Copyright Information collection HTML code Storing Responsible online communication Informed choices Virus threats Blogs

| | | | | | | Messaging |

Information Technology

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Collect Set of photos Count Organise	Photographs Video Sound Data Pictogram Digitally	Capturing moments Magnified images Questions Data collection Graphs Charts Save Retrieve	Questioning Database Construct Contribute Recording data Data logger Present data	Database creation Database searches Inaccurate data	Spreadsheets Complex searches (and/or: </>) Problem solving Present answers Analyse information Question data Interpret	Generate Process Interpret Store Present information Plausibility Appropriate data tool Interrogate Investigations

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PRIMARY SCHOOL