Progression of Computing & ICT Skills

SKILL	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer science	- physically follow and give each other instructions to move around - explore outcomes when buttons are pressed in sequences on a robot - begin to identify an algorithm to achieve a specific purpose - execute a program on a floor robot to achieve an algorithm - begin to predict what will happen for a short sequence of instructions in a program - begin to use software to create movement and patterns on a screen - use the word debug to correct any mistakes when programming a floor robot	- physically follow and give each other forward, backward and turn (right-angle) instructions - articulate an algorithm to achieve a purpose - plan and enter a sequence of instructions to achieve an algorithm, with a robot specifying distance and turn - predict what will happen and test results, - explore outcomes when giving instructions in a simple Logo program - watch a Logo program execute using 'allow programming' in 2Go, debug any problems - talk about similarities and differences between floor robots and logo on screen	- plan and enter a sequence of instructions on a robot specifying distance and turn to achieve specific outcomes, debug the sequence where necessary - test and improve/debug programmed sequences - begin to type logo commands to achieve outcomes - explore outcomes when giving sequences of instructions in Logo software - use repeat to achieve solutions to tasks - solve open-ended problems with a floor robot and Logo including creating simple regular polygons, making sounds and planning movements such as a dance - create an algorithm to tell a joke or a simple story using Scratch or Tynker - sequence pre-written lines of programming into order - talk about algorithms planned by others and identify any problems and the expected outcome	- create and edit procedures typing logo commands including pen up, pen down and changing the trail of the turtle - 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 - solve open-ended problems with a floor robot, Logo and other software using efficient procedures to create shapes and letters - experience a variety of resources to extend understanding and knowledge of programming - create an algorithm and a program that will use a simple selection command for a game - begin to correct errors (debug) as they program devices and actions on screen - use an algorithm to sequence more complex programming into order - link the use of algorithms to solve problems to work in Mathematics, Science and DT - identify bugs in programs	- explore procedures using repeat to achieve solutions to problems with Logo and a floor robot - talk about procedures as parts of a program - refine procedures to improve efficiency - use a variable to replace the length of side and the angle of a regular shape - explore instructions to control software or hardware with an input and using if... then... commands - explore a computer model to control a physical system - change inputs on a model to achieve different outputs - refine and extend a program - identify difficulties and articulate a solution for errors in a program - write down the steps required (an algorithm) to achieve the outcome that is wanted and refer to this when programming	- record in some detail the steps (the algorithm) required to achieve an outcome and refer to this when programming - predict the outputs for the steps in an algorithm - increase confidence in the process to plan, program, test and review a program - 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 - group commands as a procedure to achieve a specific outcome within a program - control on screen mimics and physical devices using one or more input and predict the outputs - understand how sensors can be used to measure input in order to activate a procedure or sequence and talk about applications in society - create variables to provide a score or trigger an action in a game - link errors in a program to problems in the original algorithm

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Information Technology	- Contribute to and interpret a pictogram. - Take photographs, video and record sound to record learning experiences. - Look at how data is representing digitally. - Use paint programs to create pictures. - Add text and images to a template document using an image and word bank. - Record their own voices and play back to an audience. - Use a video or stills camera to record an activity. - Create sounds and simple music phrases using ICT tools. - Use index fingers (left and right hand) on a keyboard to build words and sentences. - Know when and how to use the SPACE BAR (thumbs) to make spaces between words. - Explore simple information sources including age appropriate websites.	- Ask questions and consider how they will collect information. - Collect data, generate graphs and charts to find answers. - Save and retrieve the data to show to others. - Create paper/object decision trees and explore a branching database. - Take and save photographs, video and record sound to capture learning. Use microscopes or other devices to capture and save magnified images. - Investigate different types of digital data e.g. online encyclopedias. Use an increasing variety of tools and effects in paint programs and talk about their choices. - Create own documents, adding text and images. - Use templates to make electronic books individually and in pairs. - Explore the effects of sound and music in animation and video. - Use keyboard to enter text - Know when and how to use the RETURN/ENTER key. - Use SHIFT and CAPS LOCK to enter capital letters.	- 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 - Explore and begin to evaluate the use of multimedia (photos, video and sound) to enhance communication - Create and begin to edit text and presentation documents, experimenting with fonts, size, colour, alignment for emphasis and effect. - Use a range of effects in art programs including brush sizes, repeats, reflections - Explore the use of video, animation, and greenscreening. - Use ICT tools to create musical phrases. - Amend text and save changes. - Use individual fingers to input text and use SHIFT key to type characters. - Amend text by highlighting and using	- 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 - Explore how multimedia (photos, video and sound) can create atmosphere and appeal to different audiences - Be confident in creating and modifying text and presentation documents to achieve a specific purpose - Use art programs and online tools to modify photos for a specific purpose using a range of effects - Explore the use of video, animation, and greenscreening 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 and effects such as bullet points appropriately.	- 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 - 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.	- 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 - 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

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		- Use DELETE and BACKSPACE buttons to correct text. - Create sentences, SAVE and edit them later. - Find information from a technology based resource such as the Internet, DVD or files on the public drive and talk about the differences and who the information belongs to. - Talk about whether information is true or not	SELECT/DELETE and COPY/PASTE. - Look at own work and consider how it can be improved for effectiveness. - Save work on the school network, on the Internet and on individual devices - Talk about the parts of a computer. - Use simple search tools and find appropriate websites.	- Know how to use a spellcheck. - Look at their own, and a friend's work and provide feedback that is constructive and specific. - Frame questions and identify key words to search for information on the Internet. - Consider reliability of information and ways it may influence you.	- Identify different parts of computing devices. - Use effective strategies to search with appropriate search engines.	work and the work of others. - Describe different parts of a computing device and how it connects to the Internet. Connect a computing device to a keyboard, mouse or printer. - Use search engines as part of an effective research strategy. - Describe how search results are selected and ranked.

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Digital literacy - e-safety	- Agree sensible e-safety rules for the classroom. - Use a selection of websites and consider who can see the information online. - Play appropriate games on the internet, including games against real people. - Talk about how adults can help us, including when we see something we don't like or something makes us feel uncomfortable. - Play games that reinforce the idea of personal information, including password privacy. - Identify the purposes for using technology in the classroom, at home and in the world around.		- Agree sensible e-safety rules for the classroom. - 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. - 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.		- Agree sensible e-safety rules for the classroom. - Discuss their own personal use of the Internet and choices they make including excessive use, personal information and password security, - 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. blogs, messaging.	
Digital literacy - technology in our lives	- Identify uses of technology in the classroom, at home and in the local area. - Talk about using the Internet and using resources on the local device.	- Identify the purposes for using technology in the classroom, at home and in the world around.	- Save work on the school network, on the Internet and on individual devices - Talk about the parts of a computer. - Use appropriate tools to collaborate on-line. - Use appropriate tools to communicate on-line. - Talk about the owner of information online.	- Talk about the school network and the different resources they can access, including the Internet. - Check who the owner is before copying photos, clipart or text.	- Identify different parts of the Internet. - Choose appropriate tools for communication and collaboration and use them responsibly. - Talk about the different elements on webpages. - Find out who the information presented on a webpage belongs to.	- Describe different services provided by the Internet and how information moves around the Internet. - Identify appropriate forms of online communication for different audiences. - Acknowledge who resources belong to that have been found on the internet.