

Computing Skills Progression

Computing – E-Safety						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Nursery: Discuss permission Reception Talk about good & bad choices in real life e.g. taking turns, saying kind things, helping others, telling an adult if something upsets you. Play appropriate games on the Internet. 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.</p>	<p>Understand they need to follow certain rules to remain safe when visiting places online. Begin to understand that if you create something you own it. Learn that many websites ask for information that is private & discuss how to responsibly handle such requests. Explore how email can be used to communicate with real people within their schools, families & communities. Learn that directory sites with alphabetical listings offer one way to find things on the Internet.</p>	<p>Stay safe online by choosing websites that are good for them to visit & not inappropriate sites. Explore what cyber-bullying means & what to do when they encounter it. Know that if they put information online it leaves a digital footprint or “trail” & they need to manage it so it’s not hurtful. Understand that keyword searching is an effective way to locate online information & how to select keywords to produce the best search results. Discuss criteria for rating informational websites a site. Realise that not all websites are equally good sources of information</p>	<p>With some guidance, agree sensible e-safety rules for the classroom. With some support, choose a secure password for age-appropriate websites. Begin to 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 with developing confidence and what good choices are when playing games e.g. content, screen time. With support 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.</p>	<p>Independently agree sensible e-safety rules for the classroom. Choose a secure password for age-appropriate websites. Confidently 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. With increasing independence, 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.</p>	<p>Confidently agree sensible e-safety rules for the classroom. With some guidance discuss their own personal use of the Internet and choices they make Begin to discuss how to protect devices from virus threats. With some support, 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.</p>	<p>Confidently agree sensible e-safety rules for the classroom and discuss the importance of them. Discuss their own personal use of the Internet and choices they make Confidently 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. Independently explore using the safe and responsible use of online communication tools e.g. blogs, messaging. Discuss the importance of this.</p>
SEND Provision:	<p>Actions with school slogan to support pupils to remember this Visuals to support good and bad choices online Word bank to support with technical vocabulary Photo prompts to support when creating own e-safety rules</p>					

Computing Skills Progression

Computing - Programming						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Nursery: Explore operating equipment Understand simple directions Reception: Help adults operate equipment around the school, independently operating simple equipment Use simple software to make things happen Press buttons on a floor robot and talk about the movements Explore options and make choices with toys, software and websites</p>	<p>Physically follow & give each other instructions to move around Explore outcomes when buttons are pressed in sequences on a robot Begin to use software to create movement & patterns on a screen Begin to identify an algorithm to achieve a specific purpose Execute a program on a floor robot to achieve an algorithm Use the word debug to correct any mistakes when programming a floor robot Begin to predict what will happen for a short sequence of instructions in a program</p>	<p>Physically follow and give each other forward, backward & 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 & turn and drawing a trail Begin to debug a programme with support. Predict what will happen & test results</p>	<p>Programme to achieve specific outcomes, debug the sequence where necessary. Use coding vocabulary independently Test & improve / debug programmed sequences. Begin to type commands to achieve outcomes. Explore outcomes when giving sequences of instructions in different software. Use repeat to achieve solutions to tasks. Create an algorithm for a purpose. Sequence pre-written lines of programming into order Talk about algorithms planned by others & identify any problems & the expected outcome.</p>	<p>Create & edit procedures typing a range of commands. 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 & other software using efficient procedures to create shapes & letters. Experience a variety of resources to extend knowledge & understanding of programming. Create an algorithm & a program that will use a simple selection command for a game. Begin to correct errors (debug) as they program devices & actions on screen, & identify bugs in programs written by others. Use an algorithm to sequence more complex programming into order Link the use of algorithms to solve problems to work in Maths, Science & DT.</p>	<p>Explore procedures using repeat to achieve solutions to problems across a range of programmes Talk about procedures as parts of a program Refine procedures to improve efficiency Explore instructions to control software or hardware with an input & using if... then... else... 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.</p>	<p>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 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</p>
<p>SEND Provision:</p>	<p>Introduce early key skills for coding through instruction giving tasks such as cooking and using machines. Give pupils to opportunity to explore software and how it works. Photo prompts to support with sequencing Word banks to support with technical vocabulary.</p>					

Computing Skills Progression

Symbols to support with programming
Videos to support understanding of algorithms

Computing - Multimedia						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Nursery: Explore a range of technology</p> <p>Reception: Use a mouse to rearrange objects and pictures on a screen. Recognise text, images and sound when using ICT. Use a camera or sound recorder to collect photos or sound Use paint programs to create pictures. Begin to use a keyboard see programming Develop an interest in ICT by using age appropriate websites or programs.</p>	<p>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. Add text and images to a template document using an image & word bank Use index fingers (left and right hand) on a keyboard to build words & sentences. Know when & how to use the SPACE BAR (thumbs) to make spaces between words Open a saved document.</p>	<p>Use templates to make electronic books individually and in pairs. Explore the effects of sound and music in animation and video. Create own documents, adding text and images. Use keyboard to enter text (index fingers left & right hand). 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. Respond to an email.</p>	<p>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. Explore the use of video, animation & green screening. 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. Create a website page on a specific topic.</p>	<p>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. 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. Look at their own, and a friend's work & provide feedback that is constructive & specific.</p>	<p>Select an appropriate ICT or online tool to create and share ideas. Explore the effects of multimedia (photos, video, and sound) in a presentation or video and show how they can be modified. Develop skills using transitions and hyperlinks to enhance the structure 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 presentation. Develop touch typing skills independently.</p>	<p>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. Use spreadsheets for a purpose in different situations. 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.</p>
SEND Provision:	<p>Use technology to support access to learning e.g. switches where appropriate. Coloured keyboard covers to support pupils where appropriate Photo prompts to support with understanding the different keys. Visual reminders and prompts to support with using different medias. Word bank to support with technical vocabulary</p>					

Computing Skills Progression

Computing – Technology In Our Lives						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Nursery: Pupils identify technology they use at home</p> <p>Reception: Children can recognise that a range of technology is used in places such as homes and schools. They select and use technology for purposes. Recognise purposes for using technology in school and at home.</p>	<p>Recognise uses of technology in their homes and in their community. Understand that there are online tools that can help them create and communicate.</p>	<p>Begin to understand there are a variety of sources of information and begin to recognise the differences.</p> <p>Begin to understand what the Internet is and the purposes that it is used for.</p> <p>Understand the different types of content on websites and that some things may not be true or accurate.</p>	<p>Save work on the school network, on the Internet and on individual devices</p> <p>Talk about the parts of a computer.</p> <p>Use appropriate tools to collaborate on-line.</p> <p>Use appropriate tools to communicate on-line.</p> <p>Use simple search tools and find appropriate websites.</p> <p>Talk about the owner of information online.</p>	<p>Talk about the school network & the different resources they can access, including the Internet.</p> <p>Frame questions & identify key words to search for information on the Internet.</p> <p>Consider reliability of information & ways it may influence you.</p> <p>Check who the owner is before copying photos, clipart or text.</p>	<p>Identify different parts of computing devices. Identify different parts of the Internet.</p> <p>Choose appropriate tools for communication and collaboration and use them responsibly.</p> <p>Use effective strategies to search with appropriate search engines.</p> <p>Talk about the different elements on web pages.</p> <p>Find out who the information presented on a webpage belongs to.</p>	<p>Describe different services provided by the Internet & how information moves around the Internet.</p> <p>Describe different parts of a computing device & how it connects to the Internet.</p> <p>Connect a computing device to a keyboard, mouse or printer.</p> <p>Identify appropriate forms of online communication for different audiences.</p> <p>Use search engines as part of an effective research strategy.</p> <p>Describe how search results are selected & ranked.</p> <p>Acknowledge who resources belong to that they have found on the internet.</p>
SEND Provision:	<p>Photo prompts to support with understanding technology in our lives</p> <p>Visuals to support with understanding the school system and how saving documents works.</p> <p>Sentence scaffolds to support descriptions of different devices and services.</p> <p>Word bank to support with technical vocabulary.</p>					

Computing – Data Handling						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Reception Collect information as photos or sound files.</p> <p>Use a simple pictogram or set of photos to count and organise information.</p>	<p>Take photographs, video and record sound to record learning experiences.</p> <p>Look at how data is representing digitally.</p> <p>Contribute to and interpret a pictogram.</p>	<p>Take and save photographs, video & record sound to capture learning.</p> <p>Use microscopes or other devices to capture and save magnified images.</p> <p>Ask questions and consider how they will collect information.</p> <p>Save & retrieve the data to show to others.</p>	<p>Find out information from a pre-prepared database, asking straightforward questions.</p> <p>Contribute towards a database.</p> <p>Construct and use a branching database.</p> <p>Record data in a variety of ways.</p> <p>Present data for others.</p> <p>Use a data logger to monitor changes and talk</p>	<p>Plan and create a database to answer questions.</p> <p>Identify different types of data.</p> <p>Ask questions carrying out simple searches on a database.</p> <p>Identify inaccurate data.</p> <p>Present data in appropriate format for an audience.</p>	<p>Collect and record information using spreadsheets and databases</p> <p>Carry out complex searches (e.g. using and/or; \leq / \geq)</p> <p>Solve problems and present answers using data tools.</p> <p>Analyse information and question data.</p> <p>Identify poor quality data.</p>	<p>Use the whole data process – generate, process, interpret, store, and present information – realising the need for accuracy and checking plausibility.</p> <p>Select appropriate data tool.</p> <p>Identify and present results.</p> <p>Interrogate a database, refining searches to</p>

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		Create paper/ object decision trees & explore a branching database. Investigate different types of digital data e.g. online encyclopaedias	about the outcomes seen.	Use a data logger to record and compare individual readings.	Select appropriate use of a data logger for an investigation and interpret the findings.	provide answers to questions. Plan investigations using the outcomes from a data logger to show findings
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