

**Great Kingshill CE Combined School
Computing Progression and Knowledge**

Skills:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
E-Safety	<p>Understand they need to follow certain rules to remain safe when visiting places online.</p> <p>Begin to understand that if you create something you own it.</p> <p>Learn that many websites ask for information that is private & discuss how to responsibly handle such requests.</p> <p>Explore how email can be used to communicate with real people within their schools, families & communities.</p> <p>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.</p> <p>Know that if they put information online it leaves a digital footprint or "trail" & they need to manage it so it's not hurtful.</p> <p>Understand that keyword searching is an effective way to locate online information & how to select keywords to produce the best search results.</p> <p>Discuss criteria for rating informational websites a site. Realise that not all websites are equally good sources of information.</p>	<p>Agree sensible e-safety rules for the classroom.</p> <p>Choose a secure password for age-appropriate websites.</p> <p>Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button.</p> <p>Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time.</p> <p>Use a class blog to share information and talk about who can see it, and how to communicate safely and respectfully</p> <p>Comment and provide positive feedback on the work of classmates in school or online, or the work of others online.</p>	<p>Agree sensible e-safety rules for the classroom.</p> <p>Discuss their own personal use of the Internet and choices they make</p> <p>Discuss how to protect devices from virus threats.</p> <p>Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns.</p> <p>Explore using the safe and responsible use of online communication tools e.g. blogs, messaging.</p>	<p>Agree sensible e-safety rules for the classroom.</p> <p>Discuss their own personal use of the Internet and choices they make</p> <p>Discuss how to protect devices from virus threats.</p> <p>Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns.</p> <p>Explore using the safe and responsible use of online communication tools e.g. blogs, messaging.</p>	<p>Agree sensible e-safety rules for the classroom.</p> <p>Discuss their own personal use of the Internet and choices they make</p> <p>Discuss how to protect devices from virus threats.</p> <p>Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns.</p> <p>Explore using the safe and responsible use of online communication tools e.g. blogs, messaging.</p>
Programming	<p>Physically follow & give each other instructions to move around</p> <p>Explore outcomes when buttons are pressed in sequences on a robot</p> <p>Begin to use software to create movement & patterns on a screen</p> <p>Begin to identify an algorithm to achieve a specific purpose</p> <p>Execute a program on a floor robot to achieve an algorithm</p>	<p>Physically follow and give each other forward, backward & turn (right-angle) instructions</p> <p>Articulate an algorithm to achieve a purpose</p> <p>Plan and enter a sequence of instructions to achieve an algorithm, with a robot specifying distance & turn and drawing a trail</p> <p>Explore outcomes when giving instructions in a simple Logo program</p> <p>Watch a Logo program execute & debug any problems</p>	<p>Plan & enter a sequence of instructions on a robot specifying distance & turn to achieve specific outcomes, debug the sequence where necessary.</p> <p>Test & improve / debug programmed sequences.</p> <p>Begin to type logo commands to achieve outcomes.</p> <p>Explore outcomes when giving sequences of instructions in Logo software.</p> <p>Use repeat to achieve solutions to tasks.</p>	<p>Create & edit procedures typing logo commands including pen up, pen down & changing the trail of the turtle.</p> <p>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.</p> <p>Solve open-ended problems with a floor robot, Logo & other software using efficient procedures to create shapes & letters.</p> <p>Experience a variety of resources to extend knowledge & understanding of programming.</p>	<p>Explore procedures using repeat to achieve solutions to problems with Logo & a floor robot</p> <p>Talk about procedures as parts of a program</p> <p>Refine procedures to improve efficiency</p> <p>Use a variable to replace number of sides in a regular shape</p> <p>Explore instructions to control software or hardware with an input & using if... then... commands</p>	<p>Record in some detail the steps (the algorithm) that are required to achieve an outcome & refer to this when programming</p> <p>Predict the outputs for the steps in an algorithm</p> <p>Increase confidence in the process to plan, program, test & review a program</p> <p>Write a program which follows an algorithm to solve a problem for a floor robot or other model</p> <p>Write a program which follows an algorithm to achieve a planned outcome for appropriate programming software</p>

	<p>Use the word debug to correct any mistakes when programming a floor robot</p> <p>Begin to predict what will happen for a short sequence of instructions in a program</p>	<p>Predict what will happen & test results</p> <p>Talk about similarities & differences between floor robots and logo on screen</p>	<p>Solve open-ended problems with a floor robot & Logo including creating simple regular polygons, making sounds & planning movements such as a dance.</p> <p>Create an algorithm to tell a joke or a simple story.</p> <p>Sequence pre-written lines of programming into order</p> <p>Talk about algorithms planned by others & identify any problems & the expected outcome.</p>	<p>Create an algorithm & a program that will use a simple selection command for a game.</p> <p>Begin to correct errors (debug) as they program devices & actions on screen, & identify bugs in programs written by others.</p> <p>Use an algorithm to sequence more complex programming into order</p> <p>Link the use of algorithms to solve problems to work in Maths, Science & DT.</p>	<p>Explore a computer model to control a physical system</p> <p>Change inputs on a model to achieve different outputs</p> <p>Refine & extend a program</p> <p>Identify difficulties & articulate a solution for errors in a program</p> <p>Group commands as a procedure to achieve a specific outcome within a program</p> <p>Write down the steps required (an algorithm) to achieve the outcome that is wanted and refer to this when programming.</p>	<p>Control on screen mimics & physical devices using one or more input & predict the outputs</p> <p>Understand how sensors can be used to measure input in order to activate a procedure or sequence & talk about applications in society</p> <p>Create variables to provide a score/trigger an action in a game</p> <p>Link errors in a program to problems in the original algorithm</p>
Multi- Media	<p>Record their own voices and play back to an audience.</p> <p>Use a video or stills camera to record an activity.</p> <p>Create sounds and simple music phrases using ICT tools.</p> <p>Add text and images to a template document using an image & word bank</p> <p>Use index fingers (left and right hand) on a keyboard to build words & sentences.</p> <p>Know when & how to use the SPACE BAR (thumbs) to make spaces between words</p>	<p>Use an increasing variety of tools and effects in paint programs and talk about their choices.</p> <p>Use templates to make electronic books individually and in pairs.</p> <p>Explore the effects of sound and music in animation and video.</p> <p>Create own documents, adding text and images.</p> <p>Use keyboard to enter text (index fingers left & right hand).</p> <p>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.</p>	<p>Explore & begin to evaluate the use of multimedia to enhance communication.</p> <p>Create & begin to edit presentation documents & text, experimenting with fonts, size, colour, alignment for emphasis & effect.</p> <p>Use a range of effects in art programs including brush sizes, repeats, reflections</p> <p>Explore the use of video, animation & green screening.</p> <p>Use ICT tools to create musical phrases.</p> <p>Amend text & save changes.</p> <p>Use individual fingers to input text & use SHIFT key to type characters.</p> <p>Amend text by highlighting & using SELECT/ DELETE & COPY/ PASTE.</p> <p>Look at own work & consider how it can be improved for effectiveness.</p>	<p>Explore how multimedia can create atmosphere & appeal to different audiences</p> <p>Be confident in creating & modifying text & presentation documents to achieve a specific purpose.</p> <p>Use art programs & online tools to modify photos for a specific purpose using a range of effects.</p> <p>Explore the use of video, animation, & green screening for a specific audience.</p> <p>Use ICT tools to create music phrases for a specific purpose</p> <p>Use a keyboard effectively, including the use of keyboard shortcuts.</p> <p>Use font sizes & effects such as bullet points appropriately.</p> <p>Know how to use a spell check.</p> <p>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.</p> <p>Explore the effects of multimedia (photos, video, sound) in a presentation or video and show how they can be modified.</p> <p>Develop skills using transitions and hyperlinks to enhance the structure of presentations.</p> <p>Use a wide range of effects in art programs and online tools, discussing the choices made and their effectiveness.</p> <p>Know how to use text and video editing tools in programs to refine their work.</p> <p>Use online tools to create and share presentations and films.</p>	<p>Identify the purpose for selecting an appropriate online tool.</p> <p>Discuss audience, atmosphere and structure of a presentation or video.</p> <p>Collect information and media from a range of sources (considering copyright issues) into a presentation for a specific audience.</p> <p>Use sound, images, text, transitions, hyperlinks and HTML code effectively in presentations.</p> <p>Store presentations and videos online where they can be accessed by themselves and shared with others.</p> <p>Evaluate the effectiveness of their own work and the work of others.</p>

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Technology in our lives	<p>Recognise uses of technology in their homes and in their community.</p> <p>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.</p> <p>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. 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>
Data Handling	<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>Collect data, generate graphs and charts to find answers.</p> <p>Save & retrieve the data to show to others.</p> <p>Create paper/ object decision trees & explore a branching database.</p> <p>Investigate different types of digital data e.g. online encyclopaedias</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 about the outcomes seen.</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>Use a data logger to record and compare individual readings.</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>Select appropriate use of a data logger for an investigation and interpret the findings.</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 provide answers to questions.</p> <p>Plan investigations using the outcomes from a data logger to show findings</p>



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Breadth of study						