



Computing

Progression Planning Document



	Computer Programming			Networks		Digital Literacy		E-Safety		Data	
By the end of	Algorithms	Computational Thinking	Problem Solving	Knowledge and Understanding	using and Applying	Knowledge and Understanding	Using and applying	Personal Knowledge and Understanding	Responsibilities	Knowledge and Understanding	Using and Applying
Foundation Stage	<p>Make connections between control devices and information on the screen.</p>	<p>Use web or mobile applications to manipulate something on the screen.</p> <p>Respond to simple instructions to control a device.</p>	<p>Begin to choose equipment and application for a familiar activity.</p>	<p>Recognise that a range of technology is used in homes and in schools.</p>	<p>Use computing to interact with other pupils and adults.</p> <p>Gather information from different sources.</p> <p>Find similar information in different formats (such as in photographs, books, websites or television programmes).</p> <p>Use a simple application on a computer or mobile device.</p> <p>Use computing devices to interact with age-appropriate applications.</p>	<p>Communicate about the uses of computing.</p>				<p>Show an understanding that information can be stored on a computer.</p>	<p>Create simple representation of events, people and objects.</p>
Key Stage one	<p>Understand what algorithms are; how they are implemented as programs on digital devices</p> <p>programs execute by following precise and unambiguous instructions</p>	<p>create and debug simple programs</p> <p>use logical reasoning to predict the behaviour of simple programs</p>		<p>recognise common uses of information technology beyond school</p>	<p>Use a range of applications and devices in order to communicate ideas, work and messages.</p> <p>use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>			<p>Understand online risks and the age rules for sites.</p>	<p>use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies</p>		<p>Use simple databases to record information in areas across the curriculum.</p>



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Lower Key Stage Two	<p>Use logical reasoning to explain how a simple algorithm works</p> <p>Detect and correct errors in algorithms and programs (debug)</p>	<p>Use a sequence, selection and repetition in programs.</p> <p>Test programs using models and simulations.</p> <p>Design and write programs that accomplish specific goals, working with variables for input and output.</p>	<p>Analyse and tackle problems by decomposing into smaller parts.</p> <p>Use logical reasoning to detect problems, make changes and find out what happens as a result.</p>	<p>Demonstrate a knowledge of computer systems and hardware by describing input and output devices used in everyday life</p> <p>Demonstrate knowledge and understanding of computer hardware, including input, output and storage devices</p>	<p>Use software or search engines effectively</p> <p>Create programs to control physical systems.</p> <p>Discuss opportunities for online communication and collaboration</p> <p>Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.</p>	<p>Become discerning in evaluating digital content</p> <p>Evaluate the quality and success of their solutions. Check for plausibility and usefulness of information they find</p>	<p>Identify and select appropriate information using straightforward lines of enquiry.</p> <p>Use different approaches to search and retrieve digital information, including the browser address bar and shortcuts</p> <p>Use and combine a variety of software and internet services on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p>	<p>Identify ways to keep safe when using ICT. Think before sending and suggest consequences of sending/posting</p> <p>Recognise social networking sites and social networking features built into other things, such as online games and handheld games consoles. Make judgements in order to stay safe whilst communicating with others online</p> <p>Give example of the risks posed by online communications.</p> <p>Understand how online services work.</p>	<p>Recognise online behaviours that would be unfair. Show respect for individuals and intellectual property</p> <p>Know who to tell if anything worries them online. Identify potential risks when presented with scenarios including social networking profiles. Use ICT responsibly, safely and securely</p>	<p>Understand how to select information to put into a data table. Recognise which information is suitable for their topic</p> <p>Describe how to sort and organise information to use in a database.</p>	<p>Design a questionnaire to collect information.</p> <p>Create a branching database from information which they have collected and sorted.</p>



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Upper Key Stage Two	<p>With support, begin to produce algorithms by logical and appropriate structures to organise data, and create precise and accurate sequences of instructions</p> <p>Produce algorithms independently using logical and appropriate structures to organise and record data</p>	<p>Use flowcharts and other diagrams to follow how a process or model works</p> <p>Create flowcharts and other diagrams to explain how a process or model works</p>	<p>Use logical reasoning to solve problems and model situations and processes. Predict what will happen when variables and rules within a model are changed</p> <p>Independently problem solve and model situations and processes, by understanding and explaining the impact of changing variables and rules within a model</p>	<p>Demonstrate knowledge and understanding of computer systems and hardware by identifying and defining the functions of the processor, memory, backing storage and peripherals in a typical desktop computer</p> <p>Demonstrate knowledge and understanding of how networks work by describing the types of service offered (e.g. through email, www, ftp and video conferencing)</p>	<p>Select, use and combine a variety of software, including internet services on a range of digital devices, explaining how email and online discussion area are used for communication and collaboration</p> <p>Design and create/use a range of programs to accomplish given goals</p>	<p>Understand the need for accuracy when searching for and selecting information. Use different sources to double check information found</p> <p>Take account of accuracy and potential bias when searching for and selecting information</p>	<p>Prepare and present information in a range of forms, using ICT safely and responsibly</p> <p>Evaluate and improve presentations in the light of discussion, marking and audience response</p>	<p>Judge what sort of privacy settings might be relevant for reducing different risks. Judge when to answer a question online and when not to</p> <p>Find, report and flag buttons in commonly used sites and name sources of help (e.g. Childline and Cybermentors) Find a Click-CEOP button and explain to parents what it is for</p>	<p>Be a good online citizen and friend. Articulate what constitutes good behaviour online. Find and cite the web address for any information or resource found online</p> <p>Discuss scenarios involving online risk. State the source of information found online. Act as a role model for younger children</p> <p>Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.</p>	<p>Describe how to check for and spot inaccurate data. Know which formulas to use to change a spread sheet model.</p> <p>Explain that changing the numerical data affects a calculation</p>	<p>Create data collection forms and enter data from these accurately. Make graphs from the calculations on their own spread sheet</p> <p>Create data collection forms and enter data from these accurately. Make graphs from the calculations on their spread sheet.</p>