



Coleshill C of E Primary School



Inspiring our children to flourish and enjoy 'Life in all its fullness' (John 10:10)

Computing skills progression Years 1-6

	Computer Science			IT	Digital Literacy	
NC Statements	Create and debug simple programs.	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	Use logical reasoning to predict the behaviour of simple programs.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Recognise common uses of information technology beyond school.	Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
Year 1	<u>Children can work out what is wrong with a simple algorithm when the steps are out of order. Children know that an unexpected outcome is due to the code they have created. They know what debugging means.</u>	Children <u>understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that an algorithm written for a computer is called a program.</u>	When looking at a program, <u>children can read code one line at a time and make some attempts to envision the bigger picture.</u>	<u>Children are able to save their 2Dos, hand them in and reload work</u> from their work folder.	<u>Children can begin to explain what technology is and can identify a variety of examples</u> both in and out of school.	<u>Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this.</u>

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Year 2	Children can create a simple program that achieves a specific purpose . They can also identify and begin to debug them .	Children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code.	Children can identify the parts of a program that respond to specific events and initiate specific actions by writing a cause and effect sentence of what will happen in a program.	Children are confident when creating, naming, saving and retrieving content Children are able to edit more complex digital data such as music compositions. Children use a range of multimedia in their digital content .	Children can start to retrieve relevant, purposeful digital content using a search engine. Children make links between technology they see around them and the work they do in school.	Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically and the advantages and disadvantages of this. They are starting to develop an understanding of using email safely and know to tell an adult if they see inappropriate material.	
	Computer Science KS2			It ks2		Digital Literacy KS2	
	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	Select, use and combine a variety of software (including internet services) on a range of devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact
Y3	Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into	Children experiment with timers to achieve repetition effects in their programs.	Children's designs for their programs show that they are starting to think of the structure of a	Children can list a range of ways that the internet can be used to provide different methods of	Children can carry out simple searches to retrieve digital content in Purple Mash . They understand	Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails.	Children understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. They know more than one

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	manageable parts. Children can <u>identify an error within their program that prevents it following the desired algorithm and then debug it.</u>	<u>Children understand how variables can be used</u> to store information while a program is executing.	<u>program in logical steps</u> They <u>make good attempts to 'step through' more complex code in order to identify errors in algorithms</u> and can correct this.	<u>communication.</u> They can use some of these <u>methods of communications (email)</u>	that to do this, they are connecting to the internet and using a search engine.		<u>way to report unacceptable content and contact.</u>
Y4	When turning a real-life situation into an algorithm, <u>the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition.</u> Children make more intuitive attempts to debug their own programs.	<u>Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs.</u> They <u>understand 'if statements'</u> for selection and attempt to combine these with other coding structures. <u>Children can make use of user inputs and outputs such as 'print to screen'.</u>	They can <u>trace code and use step-through methods to identify errors in code and make logical attempts to correct this.</u> In programs such as Logo, <u>they can 'read' programs with several steps and predict the outcome accurately.</u>	Children <u>recognise the main component parts of hardware which allow computers to join and form a network.</u>	Children <u>understand the function, features and layout of a search engine. They understand the importance of using more than one search engine. They also understand that results are ranked and that the top result may not always be the most appropriate.</u>	Children are able to <u>make improvements to digital solutions based on feedback</u> (Logo Unit of work). <u>Children make informed software choices when presenting information and data.</u>	<u>Children can help others to understand the importance of online safety.</u>
Year 5	Children may <u>attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts.</u> Children are able to <u>test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug</u> but may need some support identifying the specific line of code.	Children can <u>translate algorithms that include sequence, selection and repetition into code with increasing ease</u> and <u>their own designs show that they are thinking of how to accomplish the set task in code utilising such structures.</u>	When coding, children can <u>compartmentalise their code into sensible headings and tabs</u> which will help them with decoding any errors at the evaluation stage.	<u>Children understand the value of computer networks but are also aware of the main dangers.</u>	Children <u>search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a webpage is</u> and the information it contains.	<u>Children make changes to their work in response to feedback given and can confidently comment on the success of the solution. Children are able to collaboratively create content and solutions using digital features within software.</u>	Children have a <u>secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online services.</u> Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.
Year 6	Children are able to <u>turn a more complex programming task into</u>	<u>Coding displays a sound understanding of variables in coding,</u>	Children are able to interpret a program in parts and can <u>make</u>	Children <u>understand and can explain with clarity the difference</u>	Children <u>readily apply filters when searching for</u>	<u>Children make clear connections to the audience when designing</u>	Children demonstrate the <u>safe and respectful use of a range of different technologies and online services. They identify more</u>

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	<p><u>an algorithm through abstraction.</u> They can <u>debug their program demonstrating a systematic approach</u> to try to identify a particular line of code causing a problem.</p>	<p><u>outputs</u> such as sound and movement, inputs from the user of the program such as button clicks and the value of functions.</p>	<p><u>logical attempts decompose a complex algorithm to explain the program as a whole.</u></p>	<p><u>between the internet and the World Wide Web.</u> Children <u>know what WAN and LAN are and can describe how they access the internet in school.</u></p>	<p><u>digital content.</u> They are able to <u>explain in detail how credible a webpage is</u> and the information it contains. <u>Children use their critical thinking skills in everyday use of online communication.</u></p>	<p><u>and creating digital content.</u> <u>The children design and create their own blogs to become a content creator on the internet.</u> <u>They also use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.</u></p>	<p><u>discreet inappropriate behaviours through developing critical thinking.</u> <u>They recognise the value in preserving their privacy when online for their own and other people's safety.</u></p>
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