

Elsenham C. of E. Primary School Progression of Skills – Computing				
	E-Safety	Coding and Programming (computer science)	Understanding Information Technology and multimedia	Digital Literacy & Data Handling
Year 1	-Demonstrate the importance of online safety, using their own private usernames and passwords for Purple Mash. -Understand the reasons for keeping their password private including talking about the meaning of 'private information'. -Take ownership of their work and will be able to save their work, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later. -To contribute their ideas about communicating appropriately and relate online and off-line appropriate behaviour.	-Understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand. -Work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm. -Know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code.	-Understand what is meant by technology and identify a variety of examples both in and out of school. Make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.	-Sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.
Year 2	-Know the implications of inappropriate online searches. -Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. -Develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult. -Give reasons for keeping their password safe that include protecting their personal information.	-Explain that an algorithm is a set of instructions to complete a task. -When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be converted into code successfully. -Create a simple program that achieves a specific purpose and also identify and correct some errors, e.g. their program designs display a growing awareness of the need for logical, programmable steps. -Identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	-Organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. -Edit more complex digital data such as music compositions within 2Sequence. -Use a range of media in their digital content including photos, text and sound. -Make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.	-Effectively retrieve relevant, purposeful digital content using a search engine. -Apply their learning of effective searching beyond the classroom and share this knowledge, e.g. use 2Publish to present the information.
Year 3	-Demonstrate the importance of having a secure password and not sharing this with	-Turn a simple real-life situation into an algorithm for a program by deconstructing it into	-List a range of ways that the Internet can be used to provide	-Collect, analyse, evaluate and present data and information

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	anyone else. Explain the negative implications of failure to keep passwords safe and secure. -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 way to report unacceptable content and contact.	manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. -Identify an error within their program that prevents it following the desired algorithm and then fix it. -Begin to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. -Designs for their programs show they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this.	different methods of communication. -Use some methods of communication, e.g. being able to open, respond to and attach files to emails using 2Email. -Describe appropriate email conventions when communicating in this way. -Carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine such as Purple Mash search or internet-wide search engines.	using a selection of software, e.g. using a branching database (2Question), using software such as 2Graph. -Consider what software is most appropriate for a given task.
Year 4	-Help others to understand the importance of online safety. -Know a range of ways of reporting inappropriate content and contact and apply their knowledge through creation of online safety resources. -Explain what can be learnt by looking at the padlock details for a website. -Reflect upon positive and negative aspects of a digital footprint and can give examples of the care they would take when sharing online in relation to their and others' digital footprint.	-Designs for algorithms show that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. -Make more intuitive attempts to debug their own programs. -Understand 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. -Make use of user inputs and outputs such as 'print to screen'. e.g. 2Code. -Designs for their programs show the structure of a program in logical, achievable steps, absorbing some new knowledge of coding structures. For example, 'IF' statements, repetition and variables.	-Recognise the main component parts of hardware which allow computers to join and form a network. -Understand the function, features and layout of a search engine. -Appraise selected webpages for credibility and information at a basic level.	-Explore key concepts relating to online safety using concept mapping such as 2Connect. -Make informed software choices when presenting information and data. -Create linked content using a range of software such as 2Connect and 2Publish+.
Year 5	-A secure knowledge of common online safety rules and apply this by demonstrating the safe and respectful use of a few different technologies and online services. -Implicitly relate appropriate online behaviour to their right to personal privacy	-Attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. -Test and debug programs as they go and use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.	-Understand the value of computer networks but are also aware of the main dangers. -Select the most appropriate form of online communications contingent on audience and	-Search with greater complexity for digital content when using a search engine. -Explain in some detail how credible a webpage is and the information it contains.

	and mental wellbeing of themselves and others. -Understand the SMART rules and how they should be applied to using technology safely and respectfully. -Demonstrate that they are developing critical thinking skills in their online experience and know what sorts of inappropriate content should be reported.	-Translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code. -Consider their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables.	digital content, e.g. 2Blog, 2Email, Display Boards.	-Make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution.
Year 6	-Demonstrate the safe and respectful use of a range of different technologies and online services. -Recognise the value in preserving their privacy when online for their own and other people's safety. -Knowledge of the benefits and risks to working collaboratively. -Feel confident in having strategies to help them promote a positive online image of themselves in their digital footprint. -Identify the padlock and https as aids to their online safety. -Clear understanding of terms such as: Computer virus, location sharing, phishing scams, spam email, malware and identity theft. -Balance the positive impact of technology with the reasons for limiting screen time that include the effect on physical and mental health.	-Turn more complex programming tasks into algorithms by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures. -Test and debug programs as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code. -Translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code. -Coding displays an improving understanding of variables in coding, including inputs and outputs.	-Explain in some depth the difference between the internet and the World Wide Web. -Know what a WAN and LAN are and can describe how they access the school internet. -Design and create their own blogs to become a content creator on the Internet, e.g. 2Blog. -Use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements. -Explore the basics of artificial intelligence (AI), understanding how computers can be trained to recognise patterns, make decisions, and support humans in solving problems, while also considering the benefits and challenges of using AI in everyday life	-Explain in detail how credible a webpage is and the information it contains. -Compare a range of digital content sources and are able to rate them in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication.