KS2

Computer Science					Information Technology		Digital Literacy
National Curriculum Statement	**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 digital 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**
Year 3	Children demonstrate the ability to design and code a program that	Children demonstrate the ability to design and code a program that	Children's designs for their programs show that they are thinking of the structure of a	Children can list a range of ways that the internet can be used to provide different methods	Children can carry out simple searches to retrieve digital content. They	Children can collect, analyse, evaluate, and present data and information using	Children demonstrate the importance of having a secure password and not

	follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Children understand how variables can be used to store information while a program is executing.	follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Children understand how variables can be used to store information while a program is executing.	program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition, and variables. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g., traffic light algorithm in 2Code. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately.	of communication. They can use some of these methods of communication, e.g., being able to open, respond to and attach files to emails using 2Email. They can describe appropriate email conventions when communicating in this way.	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.	a selection of software, e.g., using a branching database (2Question). Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g., 2Respond.	sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They 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.
Year 4	When turning a real-life situation into an algorithm, the children's design shows that they are thinking of the required task and how to	Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. They	Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing	Children recognise the main component parts of hardware which allow computers to join and form a network. Their ability to	Children understand the function, features and layout of a search engine. They can appraise selected webpages for	Children are able to make improvements to digital solutions based on feedback. Children make informed software	Children can explore key concepts relating to online safety. They can help others to understand the importance of

	accomplish this in code using coding structures for selection and repetition. Children 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. As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. Children can make use of user inputs and outputs such as 'print to screen'. e.g., 2Code.	some new knowledge of coding structures. For example, 'if' statements, repetition, and variables. They can trace code and use stepthrough methods to identify errors in code and make logical attempts to correct this. e.g., traffic light algorithm in 2Code. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately.	understand the online safety implications associated with the ways the internet can be used to provide different methods of communication are improving.	credibility and information at a basic level.	choices when presenting information and data.	online safety. Children know a range of ways of reporting inappropriate content and contact.
Year 5	Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are	Children can translate algorithms that include sequence, selection, and repetition into code with increasing ease and their own	When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later, e.g., the use	Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal information is and	Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how	Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently	Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different

	able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.	designs show that they are thinking of how to accomplish the set task in code utilising such structures. They are combining sequence, selection, and repetition with other coding structures to achieve their algorithm design	of tabs to organise code and the naming of variables.	can explain how this can be kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content.	credible a webpage is and the information it contains.	comment on the success of the solution. e.g., creating their own program to meet a design brief using 2Code. They objectively review solutions from others. Children are able to collaboratively create content and solutions using digital features within software such as collaborative mode. They are able to use several ways of sharing digital content.	technologies and online services. 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 turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding	Children 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 utilising such structures, including nesting	Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole.	Children understand and can explain in some depth the difference between the internet and the World Wide Web	Children readily apply filters when searching for digital content. They are able to explain in detail how credible a webpage is and the information it contains. They compare a range of digital content sources and are able to rate them	Children make clear connections to the audience when designing and creating digital content. The children design and create their own quizzes to become a content creator on the internet. They are able to use criteria to	Children demonstrate the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking. They

	structures and applying skills from previous programs. Children test and debug their program 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 causing a problem.	structures within each other. Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions			in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication.	evaluate the quality of digital solutions and are able to identify improvements, making some refinements.	recognise the value in preserving their privacy when online for their own and other people's safety