



# Computing Progression

## N.C. Statements KS1 Year 1

Statement	Outcome
<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that 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>
Digital Literacy	
<p>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.</p>	<p>Recognise common uses of information technology beyond school.</p> <p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>



# Computing Progression

## N.C. Statements KS1 Year 2

Statement	Outcome	Digital Literacy
Information Technology	Computer Science	
<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that 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>Children can 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.</p> <p>Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children's program designs display a growing awareness of the need for logical, programmable steps.</p> <p>Children can 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 successfully converted into code.</p> <p>Children 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. They develop an understanding of using email safely by using <b>2Respond</b> activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.</p>



# Computing Progression

## N.C. Statements KS2 Year 3

Statement	Outcome	Digital Literacy
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	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.
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.	Children demonstrate the importance of having a secure password and not 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 <b>2Email</b> in Purple Mash. They know more than one way to report unacceptable content and contact.
Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, repetition and use of timers. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately.	Children can list a range of ways that the Internet can be used to provide different methods 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.	Children can collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database ( <b>2Question</b> ), using software such as <b>2Graph</b> . Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g. <b>2Respond</b> .
Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it.	Children demonstrate the ability to design and code a program that 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 can 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.



# Computing Progression

## N.C. Statements KS2 Year 4

Statement	Outcome	Digital Literacy
Information Technology	Information Technology	Information Technology
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.	Children can explore key concepts relating to online safety using concept mapping such as <b>2Connect</b> . They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact.  <b>Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data. They create linked content using a range of software such as <b>2Connect</b> and <b>2Publish+</b>. Children share digital content within their community, i.e. using <b>Virtual Display Boards</b>.</b>



# Computing Progression

## N.C. Statements KS2 Year 5

Statement	Digital Literacy	Information Technology
Computer Science		
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.	<p>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.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>
	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.
		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 technologies and online services. Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.
		Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently 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, i.e. 2Blog, Display Boards and 2Email.



# Computing Progression

## N.C. Statements KS2 Year 6

Statement	Outcome
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	<p>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 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 <b>problem</b>.</p>
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	<p>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 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 <b>value of functions</b>.</p>
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	<p>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 <b>program as a whole</b>.</p>
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.	<p>Children understand and can explain in some depth the difference between the internet and the World Wide Web. Children know what a WAN and LAN are and can describe how they access the <b>Internet in school</b>.</p>
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	<p>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 in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication.</p>
Use sequence, selection and repetition in 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.	<p>Children make clear connections to the audience when designing and creating digital content. The children design and create their own blogs to become a content creator on the Internet, e.g. <b>2Blog</b>. They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.</p>
Understand the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking, e.g. <b>2Respond</b> activities. They recognise the value in preserving their privacy when online for their own and other people's safety.	<p>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, e.g. <b>2Respond</b> activities. They recognise the value in preserving their privacy when online for their own and other people's safety.</p>
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</p>