



Computing Progression of Skills Map EYFS, Key Stage 1 to Key Stage 2

Year	Online Safety & Digital Literacy	Information Technology	Computing Science
EYFS	<p>Fine Motor Skills ELG: Use a range of small tools, including scissors, paint brushes and cutlery;</p> <p>Numerical Patterns ELG: Children at the expected level of development will: • Verbally count beyond 20, recognising the pattern of the counting system; • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</p> <p>The Natural World ELG: Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</p>		
1	<ul style="list-style-type: none"> • Know that the internet is accessed all over the World and know which devices are connected to the internet. • Know that they should always ask a responsible adult if they want to use a device. 	<ul style="list-style-type: none"> • Children are able to 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. 	<ul style="list-style-type: none"> • Children 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. • Children can work out what is wrong with a simple algorithm when the steps are out of order, and can write their own simple algorithm. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code. • When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.
2	<ul style="list-style-type: none"> • Know devices that enable direct communication between people through images and text. • Know what personal information is and that they should never share this with anyone they don't know. • Know that they should tell a trusted adult if they are upset or worried about anything on a device. 	<ul style="list-style-type: none"> • Children demonstrate an ability to organise data using and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound. 	<ul style="list-style-type: none"> • 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. • Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors. Children's program designs display a growing awareness of the need for logical, programmable steps. • 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
3	<ul style="list-style-type: none"> • Know that some people are the internet should not be trusted • Know that concerns about what they see on-line should be reported to a trusted adult • Use a simple password • Use a Search engine to find information given key words • Know which websites are useful 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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

	<ul style="list-style-type: none"> • Know how to log in and out of websites used at school 	<ul style="list-style-type: none"> • Children can collect, analyse, evaluate and present data and information using a selection of software. 	<p>creating repetition effects. Children understand how variables can be used to store information while a program is executing.</p> <ul style="list-style-type: none"> • 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, ‘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. 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. They can describe appropriate email conventions when communicating in this way.
4	<ul style="list-style-type: none"> • Know that pictures and text share on-line can end up with strangers • Reliably know what to do if they are exposed to unpleasant materials on any device • Reliably uses a more complex password to access resources. • Know what the key words are to enter into a Search engine to find information they want. • Can select useful websites from the results of a search. 	<ul style="list-style-type: none"> • Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level. • 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. Children share digital content within their community. 	<ul style="list-style-type: none"> • 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 accomplish this in code using coding structures for selection and repetition. Children make more intuitive attempts to debug their own programs. • Children’s use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. They 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’. • 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, ‘if’ statements, repetition and variables. They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. In programs such as Logo, they can ‘read’ programs with several steps and predict the outcome accurately • Children recognise the main component parts of hardware which allow computers to join and form a network. Their ability to understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.
5	<ul style="list-style-type: none"> • Know the risks posed to them by using Social Media, including understanding that people may not be who they 	<ul style="list-style-type: none"> • Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a 	<ul style="list-style-type: none"> • Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are able to test and debug their programs as they go and can use

	<p>say they are.</p> <ul style="list-style-type: none"> • Know that it is irresponsible to share images of friends on-line without their permission. • Know how to report concerns on-line. • Effectively use a search engine to find multiple criteria using AND/OR to refine searches • Know how to compare information from different websites and know that some sites may show bias 	<p>webpage is and the information it contains.</p> <ul style="list-style-type: none"> • Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. They objectively review solutions from others. Children are able to collaboratively create content and solutions using digital features within software. 	<p>logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.</p> <ul style="list-style-type: none"> • Children can 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 utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design. • 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 of tabs to organise code and the naming of variables. • Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal information is and can explain how this can be kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content.
6	<ul style="list-style-type: none"> • Know how to reduce the risks posed by using Social Media by managing their friends lists and privacy settings. • Know that it is illegal to post or view 'rude' images of children. • Know that hacking or misusing someone else's account is illegal. • Know that search results can be manipulated by sponsorship and advertising. • Know how to validate information found through searches by checking more than one source. • Know that some news is 'fake.' 	<ul style="list-style-type: none"> • 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. • 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. They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements. 	<ul style="list-style-type: none"> • 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 problem. • 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 value of functions. • 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 know what a WAN and LAN are and can describe how they access the internet in school.