Computing Progression

	Year 1/2					
	Computer Science			**Information Technology**	**Digital Literacy**	
Statement	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	Create and debug simple programs	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
Outcome	Children understand and explain 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. 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 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. Children can create a simple program that achieves a specific purpose and display a growing awareness of the need for logical, programmable steps	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.	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, Children are able to edit more complex digital data such as music compositions within 2Sequence. Children use a range of media in their digital content including photos, text and sound	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair. Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge,	Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space. 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 and know ways of reporting inappropriate behaviours and content to a trusted adult.

Year 3/4

	Computer Science				Information Technology		Digital Literacy
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, analyzing 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.
Outcome	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'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. e.g. 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. 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 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 recognise the main component parts of hardware which allow computers to join and form a network.	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. 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 can collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database (2Question), using software such as 2Graph. Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g. 2Respond Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data	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. They know more than one way to report unacceptable content and contact

Year 5/6

	Computer Science				Information Technology		Digital Literacy
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
Outcome	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 utilizing 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	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, e.g. 2Blog. They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.	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. 2Respond activities. They recognise the value in preserving their privacy when online for their own and other people's safety.

Online Safety progression

Year 1/2	Year 3/4	Year 5/6
To log in safely. · To start to understand the idea of 'ownership' of their creative work To learn how to find saved work in the Online Work area and find teacher comments. · To learn how to search Purple Mash to find resources To understand the importance of logging out when they have finished	To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.	To know how to maintain secure passwords.
To know how to share work electronically using the display boards. · To use digital technology to share work on Purple Mash to communicate and connect with others locally. · To have some knowledge and understanding about sharing more globally on the Internet	· To understand how the Internet can be used to help us to communicate effectively. · To understand how a blog can be used to help us communicate with a wider audience. For pupils to consider if what they read on websites is true?	To gain a greater understanding of the impact that sharing digital content can have. · To review sources of support when using technology. · To review pupils' responsibility to one another in their online behaviour · To understand the advantages, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this. · To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online To learn about how to reference sources in their work
To know how to refine searches using the Search tool. To gain a better understanding of searching the Internet	· To look at a 'spoof' website. · To create a 'spoof' webpage. · To think about why these sites might exist and how to check that the information is accurate To assess whether an information source is true and reliable.	To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information. Ensuring reliability through using different methods of communication Identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g. apps accessing location. · Identify secure sites by looking for privacy seals of approval, e.g. https, padlock icon. · Identify the benefits and risks of giving personal information and device access to different software.
· To introduce Email as a communication tool using 2Respond simulations. · To understand how we talk to others when they are not there in front of us. · To open and send simple online communications in the form of email	To learn how to use email safely.	To understand how to contribute to an existing blog. · To understand how and why blog posts are approved by the teacher To understand the importance of commenting on blogs. · To peer-assess blogs against the agreed success criteri
To understand that information put online leaves a digital	· Understand that information put online leaves a digital	To review the meaning of a digital footprint and

footprint or trail. · To begin to think critically about the information they leave online.	footprint or trail and that this can aid identity theft. · To identify appropriate behaviour when participating or contributing to collaborative online projects for learning	understand how and why people use their information and online presence to create a virtual image of themselves as a user. · To begin to understand how information online can persist and give away details of those who share or modify it
· To identify the steps that can be taken to keep personal data and hardware secure	To understand how pupils can protect themselves from online identity theft. To Identify the risks and benefits of installing software including apps.	· To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour.
	To identify the positive and negative influences of technology on health and the environment. · To understand the importance of balancing game and screen time with other parts of their lives	To understand the importance of balancing game and screen time with other parts of their lives, e.g. explore the reasons why they may be empted to spend more time playing games or find it difficult to stop playing and the effect this has on their health. · To identify the positive and negative influences of technology on health and the environment.
	To learn about the meaning of age restrictions symbols on digital media and devices. · To discuss why PEGI restrictions exist. · To know where to turn for help if they see inappropriate content or have inappropriate contact from others. To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.	