

## 3M Computing Progression Document 2020-21

	E Safety	Information Technology	Digital Literacy	Computer Science
<b>R</b>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Develop mouse control</li> <li>• Use a paint program to make marks, using simple tools to communicate ideas</li> <li>• Use different forms of electronic communication in free play</li> <li>• Begin to use a keyboard to produce text on screen and develop familiarity with letters, numbers, backspace, arrow keys and space bar</li> <li>• Use multimedia equipment e.g. digital cameras, video, webcams, visualisers, tablets to capture still and moving images</li> <li>• Explore ways of making and listening to sounds using simple programs and devices</li> </ul>	<ul style="list-style-type: none"> <li>• Use a shortcut to navigate to a specific website.</li> <li>• Use appropriate buttons, menus and hyperlinks to navigate a teacher selected website or stored information.</li> </ul>	<ul style="list-style-type: none"> <li>• To use a variety of electronic toys in play (beebots, dance mats, remote control toys)</li> <li>• Explore toys that simulate control devices e.g. traffic lights, scanner, microwave, cash tills</li> <li>• Be aware of everyday devices that sense data e.g. bar codes, sounds recorders, automatic doors</li> <li>• Play with adventure program or simulation and begin to compare reality with the virtual world.</li> </ul>
<b>Y1</b>	<ul style="list-style-type: none"> <li>• Know what private information is and that shouldn't share it online.</li> <li>• Know to follow rules to keep safe online.</li> </ul>	<ul style="list-style-type: none"> <li>• Use letters, basic punctuation, spacebar, and enter key to type words and sentence quickly.</li> <li>• Can use backspace to make corrections.</li> <li>• Can use shift key for punctuation.</li> <li>• Can paint with different colours undo or eraser to correct mistakes.</li> <li>• Can use different tool such as brush, pen, line and shape and fill.</li> <li>• Can use a digital camera to take a picture and video.</li> <li>• Can record and playback a recording.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Explore a website using buttons, menus and hyperlinks.</li> <li>• Can use the back button.</li> <li>• Read words, look at pictures and watch videos on a website to find information.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Move a programmable toy in different directions, by giving and following instructions.</li> <li>• Combine commands to follow a route.</li> <li>• Explore outcome when an instruction is given in different orders.</li> <li>• Explain what an algorithm is.</li> <li>• Describe and write algorithms to complete simple tasks.</li> </ul>
<b>Y2</b>	<ul style="list-style-type: none"> <li>• Know what to do if someone finds something inappropriate online and</li> </ul>	<ul style="list-style-type: none"> <li>• Edit and improve my work by changing, adding or</li> </ul>	<ul style="list-style-type: none"> <li>• Navigate to a website via favourites and typing in an</li> </ul>	<ul style="list-style-type: none"> <li>• Plan out and enter a sequence of commands to carry out a specific task.</li> <li>• Reorder a sequence of instructions and</li> </ul>

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	<p>where to go for help.</p> <ul style="list-style-type: none"> <li>• Know that messages or images I put online leaves a trail.</li> <li>• Know how to behave safely and respectfully online.</li> </ul>	<p>removing words.</p> <ul style="list-style-type: none"> <li>• Change the font size, colour and style to change my work.</li> <li>• Discuss the quality of images and make decisions e.g. deleting blurred image.</li> <li>• Use an image within a document.</li> <li>• Combine a set of images to tell a story.</li> <li>• Capture video and understand the need to frame the image and move carefully.</li> <li>• Undertake editing.</li> </ul>	<p>address.</p> <ul style="list-style-type: none"> <li>• Use a search engine to find facts using key word search and navigating websites.</li> <li>• Know not all the information found on the internet will be accurate or useful.</li> <li>•</li> </ul>	<p>correct errors in programs (debug).</p> <ul style="list-style-type: none"> <li>• Explain what a program is.</li> <li>• Predict the outcome of a program.</li> </ul>
Y3	<ul style="list-style-type: none"> <li>• Know that some people are the internet should not be trusted</li> <li>• Use a simplepassword</li> <li>• I can explain how something online might make someone feel worried or sad.</li> <li>• I can identify up to four adults in my life who can help me if I have a problem online.</li> <li>• I can explain what might happen if we share a picture.</li> <li>• To be able to identify the effect of people's actions online and consider ways of keeping myself and others safe.</li> <li>• I recognise that I can be an 'upstander' by choosing not to join in.</li> </ul>	<ul style="list-style-type: none"> <li>• To identify computer systems in our lives including the inputs and outputs, explain how they work and their benefits to our lives</li> <li>• To understand that programs are needed for computer systems to work and this is known as software.</li> <li>• Develop a basic understanding of how email works.</li> <li>• Gain skills in using email.</li> <li>• Search for and evaluate online images.</li> <li>• Develop understanding of how the internet, the web and search engines work.</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to log in to computer system as themselves and can find their documents (personal drive)</li> <li>• Know how to open shared documents and pictures and to save work in own folder</li> <li>• To be able to print own work</li> <li>• Use software to create a simple brochure or poster.</li> <li>• To present data in a form appropriate for a given audience</li> </ul>	<ul style="list-style-type: none"> <li>• Use scratch program to design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts.</li> <li>• Use sequence and repetition in programs; work with variables and various forms of input and output.</li> <li>• Use logical reasoning to detect and correct bugs in algorithms and programs.</li> <li>• Select, use and combine a variety of software ... to design and create ... content that accomplish a specific purpose</li> </ul>

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<b>Y4</b>	<ul style="list-style-type: none"> <li>• Reliably know what to do if they are exposed to unpleasant materials on any device</li> <li>• Reliably uses a more complex password to access resources.</li> <li>• Understand some of the risks in using the web.</li> <li>• I can identify what personal information is and the importance of not sharing this.</li> </ul>	<ul style="list-style-type: none"> <li>• Know what the key words are to enter into a Search engine to find information they want.</li> <li>• Can select useful websites from the results of a search.</li> <li>• Understand some technical aspects of how the internet makes the web possible.</li> <li>• Use HTML tags for elementary mark up.</li> <li>• Use hyperlinks to connect ideas and sources.</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to organise their personal folder effectively</li> <li>• To change font size and style; include shapes and backgrounds and to use the Spellcheck function</li> <li>• Create a meaningful document that contains both pictures and text</li> <li>• Use sequence to create an effective presentation</li> <li>• Know how to deliver a simple presentation to their peers</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a number of strategies for finding errors in programs. Build up resilience and strategies for problem solving.</li> <li>• Recognise a number of common types of bug in software</li> <li>• Design and make an on-screen prototype of a computer-controlled toy.</li> <li>• Understand different forms of input and output (such as sensors, switches, motors, lights and speakers).</li> <li>• Design, write and debug the control and monitoring program for their toy.</li> <li>• Develop an educational computer game using selection and repetition.</li> <li>• Understand and use variables.</li> <li>• Create and develop a musical composition, refining their ideas through reflection <b>and</b></li> </ul>

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<b>Y5</b>	<ul style="list-style-type: none"> <li>• Know the risks posed to them by using Social Media, including understanding that people may not be who they say they are.</li> <li>• Know that it is irresponsible to share images of friends on-line without their permission.</li> <li>• Know how to report concerns on-line.</li> <li>• Develop their understanding of online safety and responsible use of technology.</li> <li>• Know how to reduce the risks posed by using Social Media by managing their friend's lists and privacy settings.</li> </ul>	<ul style="list-style-type: none"> <li>• Understand some elements of how search engines select and rank results.</li> <li>• know that some sites may show bias</li> <li>• Know that search results can be manipulated by sponsorship and advertising.</li> <li>• Question the plausibility and quality of information.</li> <li>• Develop and refine their ideas and text collaboratively.</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the work of architects, designers and engineers working in 3D.</li> <li>• Develop familiarity with a simple CAD (computer aided design) tool.</li> <li>• Develop spatial awareness by exploring and experimenting with a 3D virtual environment.</li> <li>• Develop greater aesthetic awareness</li> <li>• Select, use and combine a variety of software (including internet services) on a range of digital devices to collect, analyse, evaluate and present data and information.</li> <li>• Know how to create a simple formula in a spreadsheet to work out given mathematical tasks such as adding a set of numbers.</li> </ul>	<ul style="list-style-type: none"> <li>• Become familiar with the tools and techniques of a vector graphics package.</li> <li>• Experiment with the tools available, refining and developing their work as they apply their own criteria to evaluate it and receive feedback from their peers.</li> <li>• Develop some awareness of computer generated art.</li> <li>• Create original artwork and sound for a game.</li> <li>• Design and create a computer program for a computer game, which uses sequence, selection, repetition and variables.</li> <li>• Detect and correct bugs in their computer game.</li> <li>• Use iterative development techniques (making and testing a series of small changes) to improve their game.</li> </ul>
<b>Y6</b>	<ul style="list-style-type: none"> <li>• Know that it is illegal to post or view 'rude' images of children.</li> <li>• Know that hacking or misusing someone else's account is illegal.</li> <li>• Know that some news is 'fake.'</li> <li>• To explore privacy and sharing of information.</li> <li>• Think about how to behave when using the internet.</li> <li>• Learn about the impact on other people about cyberbullying</li> <li>• To formulate ideas of</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to validate information found through searches by checking more than one source</li> <li>• . Appreciate that computer networks transmit and receive information digitally.</li> <li>• Understand the basic hardware needed for computer networks to work.</li> <li>• Understand key features of internet communication protocols.</li> <li>• Develop a basic understanding of how</li> </ul>	<ul style="list-style-type: none"> <li>• To create and sequence a video, add sound effects, transitions and title/subtitles.</li> <li>• Think critically about how video is used to promote a cause. Storyboard an effective advert for a cause.</li> <li>• Work collaboratively to shoot suitable original footage and source additional content, acknowledging intellectual property rights.</li> <li>• Work collaboratively to edit the</li> </ul>	<ul style="list-style-type: none"> <li>• Use commands to display text on screen, accept typed user input, store and retrieve data using variables and select from a list.</li> <li>• Plan a text-based adventure with multiple 'rooms' and user interaction.</li> <li>• Thoroughly debug the program.</li> </ul>

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	<p>what is needed to be a safe, secure and moral digital citizen</p>	<p>domain names are converted to numerical IP addresses.</p>	<p>assembled content to make an effective advert.</p> <ul style="list-style-type: none"><li>• To make an online safety story</li></ul>	
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