



Misterton Primary and Nursery School - Progression In Computing

Computer Science

	Reception	Year 1/2	Year 3	Year 4	Year 5	Year 6
	Know that buttons cause effects. Know how to physically follow instructions. Know how to give others instructions to move around. Know electronic devices can move by inputting instructions. Know how to input a simple set of instructions into a beebot to achieve a given outcome.	Know that an algorithm written for a computer is called a program. Know that an algorithm is a set of instructions used to solve a problem or achieve an objective and these need to be in the correct order. Know to read code one line at a time. Know what might happen in a simple program. Know how to create an algorithm/program for a specific purpose using event, object and action blocks. Know when designing code they need to be precise with the algorithms so that it can be successfully converted into code. Know how to identify and correct errors and explain what has been done e.g. Debug , Bubbles activity, The Wrong Sandwich Challenges: Chimp. Know designs need to be in logical, programmable steps. Know the parts of a program that respond to specific events and	Know timers can be used to achieve repetition effects in programs. Know loops repeat/forever to achieve solutions to tasks. Know how to design and code a program that follows a simple sequence using repeat and timers to accomplish specific goals. Know how to test and improve/debug programmed sequences e.g. traffic light algorithm. Know there are different ways to solve a problem. Know code can be read and followed to make a prediction. Know how specific algorithms work	Know selection (if else) blocks give different outcomes. Know how to design and use an algorithm to sequence and order more complex programming with 'if'. Know what a variable is and use variables in a program Know more complex code can be read and explain what is happening. Know errors in code can be identified by going through each step and make logical attempts to correct this. e.g. traffic light algorithm in 2Code. Know how to program a loop and shapes in logo. Know how to use co-ordinates and repeat command in logo.	Know simplified code can be used to make their programming more efficient. Know how to create a simple playable game. Know use their plan to program the simulation to work. Know a task can be broke down into smaller achievable steps. Know the need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task. Know a program can be created to represent a physical system. Know functions can be created and used in code to make	Know a program can include a timer and a score. Know a program can be created that uses multiple functions with the code arranged in tabs. Know how their code executes when their program is run. Know flowcharts can be followed to create and debug code. Know that code can be used creatively to generate novel visual effects. Know that programs can be coded that take text input from the user and use this in the program.



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		initiate specific actions e.g. they can write a cause and effect sentence of what will happen in a program.	(reading flowcharts), and predict outcomes.		programming more efficient. Know what strings are, create and use these in their programming. Know strings can be used to produce a range of outputs in their program. Know variable values can be set/changed. Know text variables can be used in coding.	Children can attribute variables to user input. Know the need to code for all possibilities when using user input. Know how to create and design their own text-based adventure game based on one they have played. Know what binary is. Know numbers can be converted to binary.
Information Technology	Know how to use a simple online paint tool to create digital art. Know what a keyboard is and begin to locate letters. Know what a mouse is and use it to move and click.	Know how to control the mouse by dragging, clicking and resizing. Know basic keys on a keyboard including simple punctuation keys and type text. Know text can be altered. Know how to create, name, save and retrieve work. Know images can be added, resized and moved.	Know text and images can be copied and pasted. Know words can be replaced (spell check/thesaurus). Know bullet points can be used in lists. Know 3D models can be created on a computer.	Know animations can be created by adding music, sounds and text with transitions e.g. stop motion. Know more complex 3D models can be created on a computer. Know videos can be edited by adding music, sounds and text	Know what a database is, how to search a database and create own databases. Know formulas can be used in spreadsheets. Know word processing documents can be used for different purposes and manipulated and edited accordingly.	Know websites can be created. Know photos/screenshot s can be edited. Know how technology has changed, the impacts it has had and how it continues to change.



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		Know images and text can be used together. Know that folders are used to organise files on a computer. Know different tools make different effects in art programs. Know software can be used to create story animations. Know physical data can be collected, organized on an online database, retrieved and interpreted. Know music can be made on a computer using patterns. Know information can be presented digitally in different ways. Know how to take photographs.	Know and use a branching database. Know what an infographic is and why they are used. Know more complex music can be created. Know digital devices can be used to record. Know and Explore simulations. Know a range of media can be used together in digital content including photos, text and sound. Know images and text can be used together to create a storyboards and comics digitally.	with transitions e.g. imovie and exported. Know what an ebook is and how to create one. Know, create and use a digital spreadsheet and create graphs using these. Know digital music can be changed using rhythm, pitch and melody.	Know more intricate/complex ebooks can be created. Know music can be layered with sounds and effects. Know apps are created.	Know how to create digital quizzes. Know what a blog is. Know digital spreadsheets can be used to problem solve in the 'real world'. Know graphics can be created digitally.
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Digital Literacy

	Know that technology is used in a range of places.	Know what personal information is and why we keep personal information private. Know what makes a computer a computer. Know computers store and follow instructions. Know the types of technology in school. Know how different technology helps us. Know the dangers of sharing photos online. Know people online are not always who they say they are. Know not all information online is true. Know when and where to go for help when concerned. Know the importance of being responsible when online. Know a web-page displays information in different ways; text, images, videos and interactive elements.	Know what to do if something upsets you online. Know why and how people can be nasty online. Know the term 'sharing online' and why we need to get permission to share photos and videos of other people. Know why people pretend to be someone else online. Know why we only talk to people we know in the real world, when online. Know why we should not always trust what we read online and how to check. Know the importance of being kind in the real world and also online.	Know how to use search technologies to find specific pieces of information. Know the features of an Internet Browser. Know that when information is taken from the internet the source should be referenced (plagiarism). Know that digital content needs to be evaluated. Know that information on the internet needs cross-referencing. Know that memory is measured in bytes and gigabytes. Know that search filters can be used on websites to find suitable information.	Know what computer networks, Internet and the Cloud are and how they help us. Know how to use email safely. Know and why we collaborate online (including blogging). Know the SMART rules. Know the importance of what we share online and how this can be manipulated. Know the advantages and disadvantages of different forms of online communication. Know that key words can be used to increase search reliability. Know how to report something they have seen online including via the platform.	Know what they share, impacts upon themselves and upon others in the long-term. Know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour when they experience it or witness it as a bystander. Know reasons for limiting screen time. Know the positives and negative aspects of technology and balance these opposing views. Know the difference between the world wide web and the internet.
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		Know the internet can be used to find answers to questions. Know what a digital footprint is.	Know the importance of using avatars and how to make them. Know what makes a good password. Know the ways the internet helps us to communicate. Know the importance of playing age appropriate games. Know what an email is.	Know what 'phishing' means. Know what 'malware' and 'viruses' are and what they do. Know the importance of having a balance between digital and active activities. Know the different parts and functions of a computer.		
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