Computing Pathway

	Nursery	Reception	Year1	Year 2	Expectation
	*The technology strand has been removed from the revised EYFS framework. However, we aim to provide opportunities to effectively prepare children for studying the computing curriculum. Computing skills have been loosely classified into the three streams.				
Computer Science	Robots To make a floor robot (beebot) move forwards and backwards To follow positional language command instructions in small world role-play (forwards, backwards, stop, start)	Robots To be able to describe a route that is in progress and a route taken by another person while it is being enacted. To be able to follow a route taken by another person after it has been enacted. To plan routes for toy vehicles and follow plans for toy vehicles. To use the buttons on a floor robot to make it	Grouping & Sorting To sort items using a range of criteria. To understand how to use software for grouping items such as tools within Purple mash. Lego Builders To know how to compare the effects of adhering strictly to instructions when completing tasks without complete instructions.	Coding To know what an algorithm is and can explain that it is a set of instructions and that algorithms follow a sequence. To know how to create a computer program using an algorithm. To know how to create a computer program from a given design. To know that collision detection is an event type in coding.	Pupils should be taught to: 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 and use logical

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		move developing to using buttons with greater purpose e.g., program several buttons to make it move. To be able to interpret simple instructions to predict an outcome. To be able to plan and input instructions for a floor robot building up to several steps	To know how to follow and create simple instructions on the computer. To knows that the order of instructions affects the end result for a given instructional task. <u>Maze Explorers</u> To know the functionality of the direction keys in 2GO. To know how to create and debug a set of simple instructions (algorithm). To know how to use the additional direction keys within 2Go as part of an algorithm. To know how to change and extend the algorithm list in 2Go.	To know how to design an algorithm that follows a timed sequence. To know that different objects within the coding environment have different properties. To know that there are different events in coding and knows what some of these events are. To know the function of buttons in the coding environment. To know how to interpret and debug simple programs.	reasoning to predict the behaviour of simple programs

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			Coding		
			To know what instructions are and can predict what might happen when they are followed. To know how to plan and make a simple computer program e.g. fish moves right, crab moves up. To know what objects, actions and backgrounds are within a coding environment. To know what an event is and knows how to use an event to control an object. To begin to know how code executes when a program is run.		

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Vocabulary	Forwards, backwards, stop, start	forwards, backwards, turn, left, right, stop, start, under, over, in-between, position, directions, route, input, steps, instructions, output, when clicked	Instruction, algorithm, computer, program, debug, action, background, code, command, debugging, direction, challenge, event, arrow, execute, input, object, properties, output, run, scale, sound, scene, when clicked, undo rewind	action, algorithm, background, button, design mode, collision detection, event, command, debug/debugging, execute, interval, object, run, test, predict, scale, text, properties, scene, timer, sequence, when clicked, when swiped, sound, nesting	
Information Technology	**Drawing Skills** To be able to select colours. To be able to mark make purposefully on a screen. To be able to draw using a touch screen.	**Drawing Skills** To be able to select colours. To be able to mark make purposefully on a screen. To be able to control the pencil width. To be able to control tools to experiment with.	**Pictograms** To know that data can be represented in a picture format e.g. pictogram. To know how to contribute to a class pictogram. To know how to use a software such as 2Count to record results of an experiment into a pictogram format.	**Spreadsheets** Secures knowledge from prior year when spreadsheets were introduced (See unit 1.8 Spreadsheets). To know how to use prior learning to perform composite task of creating a counting machine using software such as 2Calculate (image, lock move cell, speak and count tools).	Pupils should be taught to: Use technology purposefully to create, organise, store, manipulate and retrieve digital content

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	Sounds To explore sounds on a device. Photography To understand that things can be recorded e.g. with cameras or tablets	To be able to use the undo function. To be able to erase parts of pictures. To be able to draw using a touch screen. Sounds To experiment in the music area of Mini Mash to combine sounds. To use the built-in sound effects in Purple Mash. To be able to record spoken words and play these back. Photography	Animal Story Books To know what e-books are. To know of software such as 2Create a Story that allows users to create interactive stories. To know how to add animation to an interactive story. To know how to add sound, including voice recordings and music to a story they have created using software. To begin to know how to work on more complex digital stories, including adding backgrounds, copying and pasted pages. To know how to share digital stories with others such as using Digital Display Boards.	To know how to copy, cut and paste in spreadsheet software such as 2Calculate. To know what totalling tools are and how to use them. To know how to use a spreadsheet to perform calculations for purpose. For example, adding and totalling money. To know how to use some tools within a spreadsheet to support calculations. For example, using the equals tool in 2Calculate to check calculations. To know how to create a manual block graph within a spreadsheet from data. Questioning	

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	To use a digital device to take a photograph.	To be able to look at photos and identify features. To be able to take photos using a device. To be able to use the webcam in Mini Mash. To be able to open photos in Purple Mash. To be able to use own photos in work on a digital device Quizzes To know what a quiz is. To be able to participate in a multiple-choice quiz using pictures.	Spreadsheets To know what a spreadsheet program environment looks like including cells, rows and columns. To know basically what a spreadsheet program can help do. To know how to enter data into spreadsheet cells. To know how to add images to cells. To know how to use some tools within spreadsheets e.g. with 2Calulate can use lock cell, move cell, speak and count.	To know that pictograms provide limited information. To know that there are other data handling tools that can give more information than pictograms. To know how to use yes/no questions to separate information. To know how to construct a binary tree to identify items. To know how to use a binary tree database (such as 2Question), to answer questions. To know how to use a database to answer more complex search questions. To know how to use a search feature at a basic	

		To be able to participate in a sequencing quiz using pictures. To be able to answer quiz questions by typing. To be able to participate in a cloze quiz. To be able to participate in a sorting and sequencing quiz. To be able to complete a quiz with mixed questions. To be able to play a quiz game.		level when trying to locate data within a database such as 2Investigate. Creating pictures To know the purpose and benefits of painting software tools such as 2Paint a Picture. To know how to recreate Impressionism, surrealism and Pointillism using features within 2Paint a Picture. To know how to reproduce the style of William Morris by using repeating patterns, manipulating patterns and adding multiple effects in painting software such as 2Paint a picture. Making Music To know how to make forms of	

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				music (digitally) using age-appropriate software such as 2Sequence. To know how to edit and combine sounds using 2Sequence. To know how to refine composed music. To know how to upload/import and record sounds beyond the software environment. <u>Presenting ideas</u> To know that digital content can be presented in many different forms e.g. stories. To know how to use presentational or interactive software such as a quiz, making	

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				improvements to it based on people feedback. To know that data can be structured in tables to make it useful for an audience. To know how to add images such as clipart and photos to Presentational software. To know how to collect, organise and present data and information in digital format.	
Vocabulary	Computer, device, digital, touch screen, record, photographs, camera	click, action, scroll, laptop, touchpad, touch screen, erase, undo, arrow key, sound effects, photos, device, webcam, digital, quiz, multiple choice, type, sort, sequence, music tools, microphone, compose, record, device,	Pictorgram, data, collate, animation, ebook, font, file, sound effect, display, board, count tool, spreadsheet, lock tool, speak tool, arrow keys, backspace key, cells, cursor, columns, Clipart,	Backspace, copy, paste, columns, cells, count tool, lock tool, equal tool, image toolbox, move cell tool, rows, speak tool, spreadsheet, Pictogram, question, data, collate, binary tree, avatar, database, drag, Impressionism, palette,	

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		photographs, upload, images, camera,	count tool, delete key, image toolbox, rows	pointillism, share, surrealism, template, Bpm, composition, digitally, instrument, sound effects, sound track, tempo, volume, concept map, quiz, presentation, node, animated, non-fiction, narrative, audience	
Digital Literacy	Technology around us To know the technology used in the home and school. Hardware To be able to take appropriate actions before using technology.	Technology around us To know the technology used in the home. To be able to identify how technology is used outdoors. To be able to identify technology used in the wider world. Hardware	Online Safety and Exploring Purple Mash To know how to log in safely. To know how to navigate to a document area where saved work by child can be found. To know how to use search to locate applications or resources on a platform such as Purple Mash.	Online Safety To know how searches can be refined when searching digitally and therefore attempts refining when searching. To know that digitally created work can be shared with others e.g. Purple Mash Display Boards. To have knowledge and understanding about	Pupils should be taught to: use technology purposefully to create, organise, store, manipulate and retrieve digital content.

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| | To be able to understand why food should be kept away from devices.

To be able to identify electrical safety as important.

To know safe ways to transport portable devices.

To be able to relate being gentle and sharing to the use of devices.

Safety and Privacy

To begin to understand what private means | To be able to take appropriate actions before using technology.

To be able to understand why food should be kept away from devices.

To be able to identify electrical safety as important.

To know safe ways to transport portable devices.

To be able to relate being gentle and sharing to the use of devices.

To be able to understand what technology is.

To be able to identify the main parts of a computer.

Safety and Privacy | To know how to enhance work by adding multimodal items such as text and images.

To know how to open, save and print work.

To know the importance of logging out of an account.

Technology Outside School

To find and understand where technology is used in the local community | sharing more globally on the Internet.

To know that email is a type of communication tool.

To know how to open and send simple online communications in the form of email e.g. 2Email (virtual email client).

To know that there is an appropriate way to communicate with others in an online situation.

To know that information put online leaves a digital footprint.

To know some steps that can be taken to keep personal data and hardware secure.

Effective searching | |

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	when using technology. To begin to be aware of the impact of a lot of screen time.	To be able to explain what it means to own digital content. To be able to explain what 'private' means when using technology. To be able to express how it feels to be uncomfortable with something. To be able to name 5 people who can help with negative feelings. To be able to think about how to show kindness to others. To be aware of the impact of a lot of screen time.		To know the meaning of key Internet and searching terms. To know the basic parts of a web search engine page. To know how to navigate a web search results page. To know how to search the Internet to some degree for answers to a quiz. To know the premise of what effective Internet searching is.	

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		Using Purple Mash with an individual Login To navigate to PM login page. Using login shortcuts. Login in picture password. Login in numbers. Login in words. My work area. 2Dos.			
Vocabulary	electrical safety, private, portable device, screen time	Technology, electrical safety, portable device, computer, private, digital, login, password, 2Do's, work area	Technology Log in, username, password, log out, my work, avatar, notification, topics, tools, save	Search, display board, internet, sharing, email, digital footprint, internet search, search engine	