

# COMPUTING PROGRESSION MAP



## Learning in EYFS: Computing

This part of the document demonstrates which statements from the 2020 Development Matters are prerequisite skills for computing within the national curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for computing.

EYFS Computing			
<b>Non-statutory guidance</b> Three and Four-Year-Olds	Personal, Social and Emotional Development	<ul style="list-style-type: none"> <li>Remember rules without needing an adult to remind them.</li> </ul>	<ul style="list-style-type: none"> <li>Ask why things happen and how they work</li> <li>Use ICT to support learning- create self –portrait on IWB</li> <li>To record experiences with camera and video recording</li> <li>Use ICT hardware to interact with age- appropriate software</li> <li>To learn about how to stay safe on the internet- Cyber Bullying</li> <li>Responding to images and sounds on a screen. Understand that changes on the screen can be a result of their actions, clicking the mouse or pressing a key.</li> <li>'Beebot' activities.</li> <li>Use remote control toys.</li> <li>Responding to images and sounds on a screen. Understand that changes on the screen can be a result of their actions, clicking the mouse or pressing a key.</li> <li>Use Beebot bees- give instructions for movement to get to the beehive- 5 steps forward etc.</li> <li>Beebot races- who comes first, second, third? How to operate technological toys using buttons and switches</li> </ul>
	Physical Development	<ul style="list-style-type: none"> <li>Match their developing physical skills to tasks and activities in the setting.</li> </ul>	
	Understanding the World	<ul style="list-style-type: none"> <li>Explore how things work.</li> </ul>	
<b>Non-statutory guidance</b> Reception	Personal, Social and Emotional Development	<ul style="list-style-type: none"> <li>Show resilience and perseverance in the face of a challenge.</li> <li>Know and talk about the different factors that support their overall health and wellbeing:</li> <li>- sensible amounts of 'screen time'.</li> </ul>	<ul style="list-style-type: none"> <li>Digital photography. Use a camera or device with a camera to take self-portrait, record growing plant, record experiences</li> <li>Use programmable toys such as Beebot and Codapillar to create routes – how can we record this?</li> <li>Use walkie-talkie headsets to communicate with each other</li> <li>Use paint programme to create pictures of flowers, leaves, aliens, dinosaurs etc.</li> <li>Use ICT hardware to interact with age- appropriate software</li> <li>Log on to computer in ICT suite</li> <li>How can we use the internet safely? Online safety &amp; cyberbullying</li> <li>Safer Internet Day</li> <li>Use the internet to find out information</li> </ul>
	Physical Development	<ul style="list-style-type: none"> <li>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</li> </ul>	
	Understanding the World	<ul style="list-style-type: none"> <li>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> </ul>	



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Year Group	National Curriculum	Sticky Knowledge & Skills/ End Points	Golden Thread	Vocabulary
Statutory framework ELG	Personal, Social and Emotional Development	Managing Self	<ul style="list-style-type: none"> <li>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.</li> <li>Explain the reasons for rules, know right from wrong and try to behave accordingly.</li> </ul>	
	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> </ul>	
Y1	<ul style="list-style-type: none"> <li>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>Recognise common uses of information technology beyond school</li> </ul>	Year 1		
		<ul style="list-style-type: none"> <li>Identify which button on a device represents which action e.g. Bee Bot</li> <li>Explain how to program a robot to follow simple sequence of instructions (1- 2 turns)</li> <li>Make a simple sequence of instructions / algorithm</li> <li>Be able to make simple predications about an algorithm and a program. The Bee Bot will go....</li> <li>Be able to change (debug) the program to improve the route</li> </ul>	Computer Science	Turn, left, right, sequence, forward, backward, clockwise, anticlockwise, bee bot, algorithm, debug, program
		<ul style="list-style-type: none"> <li>Be able to log onto a computer Or use a QR code to evidence work on a tablet</li> <li>Be able to navigate around the screen with a mouse or touchpad</li> <li>Demonstrate how to type text using space bar for separate words to create something meaningful</li> <li>Be able to independently find and use an app on a tablet for instance to take and view a video or photograph</li> </ul>	Information Technology	Keyboard, Mouse, Internet, App, Screen, Computer, Save, Print, Click, Website, Font, Cursor, Device, camera, photograph, capture, image, digital, Landscape, portrait, field of view, narrow, wide, format, Natural lighting, artificial lighting, flash, focus, background, foreground

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	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Explain that the internet is accessed all over the World and know some devices are connected to the internet.</li> <li>Say that they should always ask a responsible adult if they want to use a device and ask for help if they see anything that worries them.</li> <li>With support from an adult be able to find information on the internet.</li> </ul>	Online Safety & Digital Literacy	Keyboard, Mouse, Internet, App, Screen, Computer, Click, Website, search, safe, filter, swiggle, search engine, image
Y2	<ul style="list-style-type: none"> <li>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>Recognise common uses of information technology beyond school</li> <li>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.</li> </ul>	Year 2		
		<ul style="list-style-type: none"> <li>Demonstrate how to program a robot to achieve set goal (sequence of 6-7 instructions: maze, point collecting)</li> <li>Begin to use block programming e.g. <a href="#">Scratch Junior (Alex, Daisy Dino)</a> to complete a simple program.</li> <li>Be able to debug more complex problems e.g. a route on a <a href="#">Bee Bot / Blue Bot / Alex / Logo etc...</a> maze.</li> </ul>	Computer Science	Algorithm, sequence, debug, programme, code, Bee-bot, route, left, right, forwards, turn, clockwise, anti-clockwise, Sequence, maze
		<ul style="list-style-type: none"> <li>Be able to save, retrieve and print work <a href="#">PC or Tablet</a></li> <li>Demonstrate how to type and format text including basic punctuation and capital letters <a href="#">Any suitable software</a></li> <li>Be able to confidently use pointing device <a href="#">Mouse, Touchpad</a></li> <li>Be able to add and create simple images</li> <li>Be able to combine simple text and graphics, for instance create a poster for a purpose <a href="#">Any suitable software</a></li> </ul>	Information Technology	Open, edit, mouse, keyboard, monitor, screen, space bar, enter, type, point, font, Word, Publisher, Powerpoint, image, document, copy, paste, save, retrieve, text, brush tools, fill tool, undo, redo, Paint 3D
		<ul style="list-style-type: none"> <li>Name devices that enable direct communication between people through images and text.</li> <li>Explain what personal information is and that they should never share this with anyone they don't know.</li> <li>Explain that they should tell a trusted adult if they are upset or worried about anything on a device.</li> <li>With support be able to use a safe search engine e.g. <a href="#">Swiggle/YouTube Kids</a></li> </ul>	Online Safety & Digital Literacy	Trusted adult, communicate, information, personal, internet, app, screen, computer, device, tablet, website, search, safe, filter, search engine, image, Swiggle

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Y3		Year 3		
<ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>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</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>Be able to use a block program (<a href="#">Scratch Jun</a>, <a href="#">Scratch</a>, <a href="#">Microbit Blocks</a>) to make a simple programme using sequencing and timing.</li> <li>Inputs sets of instructions according to programming language and environment (<a href="#">Logo</a>, <a href="#">Scratch Jnr</a>, <a href="#">Microbit etc.</a>)</li> <li>Use repeat loops for instance to create a program to draw regular 2D shapes (<a href="#">Logo</a>, <a href="#">Scratch</a>)</li> <li>Independently be able to debug basic mistake</li> <li>Begin to use conditionals – If I click here then this happens...<a href="#">Scratch Junior</a>, <a href="#">Scratch</a>, <a href="#">Microbit</a></li> </ul>	Computer Science	Sequence, bock, algorithm, instruction, block, code, forward, backwards, left, right, command, input, output, blocks, costume, backdrop, debug, pen up, pen down, sprite, Loop, Repetition, Prediction	
	<ul style="list-style-type: none"> <li>Be able to log in to computer system as themselves and can find their documents (personal drive)</li> <li>Demonstrate how to open shared documents and pictures.</li> <li>Demonstrate how to use software to create a simple brochure or poster. <a href="#">Publisher or Pages</a></li> <li>Demonstrate how to sequence and add to slides to make a simple presentation <a href="#">Keynote</a>, <a href="#">Powerpoint</a>, <a href="#">iMovie</a></li> <li>Create a meaningful document that contains both pictures and text</li> </ul>	Information Technology	Publisher, powerpoint, word, microsoft office, log in, shut down, open doucment, save, save as, insert image, text box, word art, format, font, folder, special character, spell check, grammar, bold, underline, clip art, delete, backspace	
	<ul style="list-style-type: none"> <li>Explain that some people are the internet should not be trusted</li> <li>Explain that concerns about what they see on-line should be reported to a trusted adult</li> <li>Create and use a simple password</li> <li>Use a Search engine to find information given key words</li> <li>Say which websites are useful and begin to understand all might not be trustworthy.</li> <li>Be able to log in and out of websites used at school</li> <li>Explain that using technology can sometimes be inappropriate</li> </ul>	Online Safety & Digital Literacy	Trusted sites, trusted adults, fake, real, report, block, secure, password, protect, search engine, key word, trustworthy, log in, log out, image, falsify	

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Y4		Year 4		
<ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>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</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>Be able to use a program to sequence, use conditionals and use a variety of inputs and outputs (Scratch- steer an object by using keys /Microbit – show an image when shaken)</li> <li>Be able to explain how their program works for instance by annotating a print out</li> <li>Be able to modify their program and be able to predict the effects of any changes</li> <li>Demonstrate how to break sets of instructions into short steps to achieve goal. For instance drawing repeated squares to make a pattern</li> </ul>	Computer Science	Input, output, program, coding, sprite, instructions, debug, sequence, conditionals, modify	
	<ul style="list-style-type: none"> <li>Be able to save a document in a shared folder and retrieve this to continue working on it. Computer. On an iPad work could be shared by Airdrop or equivalent.</li> <li>Be able to organise their personal folder effectively for instance by organising work into folders for each year at school</li> <li>Demonstrate how to change font size and style; include shapes and backgrounds and to use the Spellcheck function</li> <li>To be able to use sequence to create an effective presentation or video Keynote, Powerpoint or iMovie.</li> <li>Be able to deliver a simple presentation to their peers</li> </ul>	Information Technology	Save, open, retrieve, document, Powerpoint, file, folder, font size, style, insert, shapes, background, audio, upload	
	<ul style="list-style-type: none"> <li>Explain that pictures and text share on-line can end up with strangers</li> <li>Reliably know what to do if they are exposed to unpleasant materials on any device</li> <li>Explain that having a balance of online and offline activities is important.</li> <li>Reliably uses a more complex password to access resources.</li> <li>Identify 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> </ul>	Online Safety & Digital Literacy	Selection, Browser, Privacy, Online, Offline, Hacking, Images, WiFi, Router, USB Port, URL	

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Y5		Year 5		
<ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> </ul>	<ul style="list-style-type: none"> <li>Use customisation to change a working program to change its effect for instance (backgrounds and sprite in scratch.)</li> <li>Uses loops to achieve goals (Scratch – shapes, letters)</li> <li>Uses variables, conditional sentences (when/then), external triggers and loops to achieve set goals (creating game in Scratch)</li> </ul>	Computer Science	Variable, Object, Transition, Trigger, Sprite, Customisation, Scratch, Loops, conditional sentences, algorithm, sequencing, coding block, conditional coding, continuous loop	
<ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> </ul>	<ul style="list-style-type: none"> <li>To be able to share their work from their personal folder to work collaboratively with others.</li> <li>Demonstrate how to use software to create and effective poster or leaflet.</li> <li>Be able to select the best program for the task.</li> <li>Using software know how to add data into a prepared spreadsheet to answer simple questions. For instance using Excel</li> <li>Independently, prepare an effective presentation to show their learning to others which includes some elements of timing or sequence. For instance in Keynote, Powerpoint, iMovie</li> </ul>	Information Technology	Snipping tool, shift key, formatting (text & images), Formula (add & subtract), row column, Presentation, URL (Uniform Resource Locator – Website address...), Animation, hyperlink, themes, spreadsheet, cell, font, presentation, Publisher, Cropping, Excel	
<ul style="list-style-type: none"> <li>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</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the risks posed to them by using Social Media, including understanding that people may not be who they say they are.</li> <li>Explain that it is irresponsible to share images of friends on-line without their permission.</li> <li>Explain that a balance of online and offline activities is important to maintain good health.</li> <li>Demonstrate how to report concerns on-line.</li> <li>Effectively use a search engine to find multiple criteria using AND/OR to refine searches</li> <li>Demonstrate how to compare information from different websites and know that some sites may show bias</li> </ul>	Online Safety & Digital Literacy	“Fake News”, social media, image sharing, irresponsible, consent, permission, balance (online/ offline), report, online concerns, search engine, bias	



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Y6	<ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>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</li> </ul>	Year 6		
		<ul style="list-style-type: none"> <li>Use conditional sentences (when/then) to program objects (<b>Kodu, Scratch, Microbit</b>)</li> <li>As above but use mathematical expressions when constructing conditionals e.g. trigger winning when (If loops &gt;5 then...)</li> <li>Be able to explain what a program will do and accurately predict the effect of changes.</li> <li>Be able to reliably modify existing algorithms and code to change the effect of the program.</li> <li>Be able to make an efficient program by using an effective algorithm and techniques such as loops and procedures.</li> </ul>	Computer Science	Equation, Manipulate, URL, Version, Hardware, "Print Screen", "Escape Key", "Special Character", Phishing, Scratch, condition, action, program, loop, expression, conditional, algorithm, modify, code, trigger
	<ul style="list-style-type: none"> <li>Demonstrate how to use the main features of office software to produce suitable documents and presentations for an audience. <b>Microsoft Office or Apple suite or equivalent.</b></li> <li>Demonstrate how to edit a picture. <b>For instance in Paint.net</b></li> <li>Demonstrate how to create a simple formula in a spreadsheet to work out given mathematical tasks such as adding a set of numbers.</li> <li>Create and sequence a video, add sound effects, transitions and title/subtitles. <b>iMovie – much harder in Windows software.</b></li> <li>To be able to use two or more programmes to create a final piece of work. (eg, edit a picture before inserting into a document).</li> </ul>	Information Technology	Print Screen, crop, modify, layers, filters, snipping, format, font, shift key  Formula, equation, cell reference, spreadsheet, standard operators, asterisks, forward slash, SUM, calculation, value, cumulative, running total, format, currency, budget, solution, ascending, descending, edit, column, row,  Sequence, sound effects, transitions, titles, subtitles, editor, audio, narrate, stills, slides, software	

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	<ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>Explain how to reduce the risks posed by using Social Media by managing their friends lists and privacy settings.</li> <li>Be able to maintain a healthy balance of online and offline activities and know that some activities may affect their emotional wellbeing.</li> <li>Explain that it is illegal to post or view 'rude' images of children.</li> <li>Explain that hacking or misusing someone else's account is illegal.</li> <li>Explain that search results can be manipulated by sponsorship and advertising.</li> <li>Explain how to validate information found through searches by checking more than one source.</li> <li>Explain that some news is 'fake.'</li> </ul>	<p>Online Safety &amp; Digital Literacy</p>	<p>Privacy settings, balance, wellbeing, illegal, hacking, misusing, manipulated, sponsorship, advertising, validate, source</p>
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