



# Computing Progression of Knowledge and Skills



EYFS			
Three and Four-Year-Olds	Personal, Social and Emotional Development		• Remember rules without needing an adult to remind them.
	Physical Development		• Match their developing physical skills to tasks and activities in the setting.
	Understanding the World		• Explore how things work.
Reception	Personal, Social and Emotional Development		• Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: - sensible amounts of 'screen time'.
	Physical Development		• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
	Expressive Arts and Design		• Explore, use and refine a variety of artistic effects to express their ideas and feelings.
ELG	Personal, Social and Emotional Development	Managing Self	• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly.
	Expressive Arts and Design	Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

KS1 Subject content	To understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. To create and debug simple programs. To use logical reasoning to predict the behaviour of simple programs. To use technology purposefully to create, organise, store, manipulate and retrieve digital content. To recognise common uses of information technology beyond school. To 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.
KS2 Subject content	To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. To use sequence, selection, and repetition in programs; work with variables and various forms of input and output. To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. To 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. To use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. To 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. To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skills	Algorithms and Programs	<p><b>Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</b></p> <p>To be able to create a simple series of instructions- left, right, forwards and backwards.</p>	<p>To be able to create a simple series of instructions - left and right. To be able to record their routes. To understand forwards, backwards, up and down. To put two instructions together to control a programmable toy. To begin to plan and test a Bee-bot journey.</p>	<p>To be able to predict the outcomes of a set of instructions. To use right angle turns To use the repeat commands. To be able to test and amend a set of instructions To write a simple program and test it. <b>To be able to predict what the outcome of a simple program will be.</b></p>	<p><b>To experiment with variables to control models.</b> To use 90 degree and 45 degree turns. To be able to give an on-screen robot directional instructions. To draw a square, rectangle and other regular shapes on screen, using commands. <b>To be able to write more complex programs.</b></p>	<p><b>To be able to use repeat instructions</b> to draw regular shapes on screen, using commands. To be able to experiment with variables to control models. To make turns specifying the degrees. To give an on screen robot specific directional instructions that takes them from x to y. To be able to make accurate predictions about the outcome of a program they have written.</p>	<p><b>To be able to combine sequences of instructions and procedures</b> to turn devices on or off. To understand input and output. To be able to use an ICT program to control an external device that is electrical and/or mechanical. To use ICT to measure sound or light or temperate using sensors. To be able to explore 'What is' questions by playing adventure or quest games. To write programs that have sequences and repetitions.</p>	<p>To explain how an algorithm works. To be able to detect errors in a program and correct them. To use an ICT program to control a number of events for an external device. To be able to use ICT to measure sound, light or temperature using sensors and interpret the data. To explore 'what if' questions by planning different scenarios for controlled devices. To use input from sensors to trigger events. <b>To check and refine a series of instructions.</b></p>

	<p><b>Data Retrieving and Organising</b></p>	<p><b>Select and use technology for particular purposes.</b> To capture images with a camera/ipad. To be able to record a sound and play it back using talking tins/microphone.</p>	<p><b>To capture images</b> with a camera. To be able to print out a photograph from a camera with help. To be able to record a sound and play it back. To enter information into a template to make a graph. To talk about the results shown on a graph.</p>	<p><b>To be able to find information on a website.</b> To be able to click links in a website. To print a web page to use as a resource. <b>To be able to experiment with text, pictures and animation</b> to make a simple slide show. To use the shape tools to draw.</p>	<p><b>To review images</b> on a camera and delete unwanted images. To be able to download images from a camera into files on the computer. To be able to use photo editing software to crop photos and add effects. <b>To manipulate</b> sound when using simple recording story boarding.</p>	<p>To capture images using webcams, screen capture, scanning, visualiser and internet? To be able to choose images and download into a file. To download images from the camera into files on the computer. To be able to copy graphics from a range of sources and paste into a desktop publishing program.</p>	<p>To be able to listen to streaming audio such as online radio. To download and listen to podcasts. To be able to produce and upload a podcast. To manipulate sounds using Audacity. To select music from open sources and incorporate it into multimedia presentations. To be able to work on simple film editing.</p>	<p>To explore the menu options and experiment with images (colour effects, options, snap to grid, grid settings etc.) To add special effects to alter the appearance of a graphic. To be able to 'save as' gif wherever possible to make the file size smaller (for emailing or downloading). To make an information poster using their graphics skills to good effect.</p>
	<p><b>Communicating</b></p>	<p><b>Knows how to operate simple equipment.</b> To record own speech using a voice altering programme. To record speech for a character and play back to an audience.</p>	<p>To be able to recognise what an email address looks like. To join in sending a class email. To be able to use the @ key and type an email address To be able to word process ideas using a keyboard. To use the spacebar, back space, enter, shift and arrow keys. To be able to print out a page from the internet.</p>	<p>To be able to send and reply to messages sent by a safe email partner (within school). To be able to word process a piece of text. To insert/delete a word using the mouse and arrow keys. To be able to highlight text to change its format (B, U, I).</p>	<p>To be able to use the email address book. To open and send an attachment.</p>	<p>To be able to appreciate the benefits of ICT to send messages and to communicate. To use the automatic spell checker to edit spellings.</p>	<p>To be able to use instant messaging to communicate with class members. To conduct a video chat with someone elsewhere in the school or in another school.</p>	<p>To conduct a video chat with people in another country or organisation.</p>

	<p><b>Using the Internet</b></p>	<p><b>Knows that information can be retrieved from computers. Completes a simple program on a computer.</b> Talk about websites they have been on. Explore a simple website.</p>	<p><b>Talk about websites they have been on.</b> Explore a website by clicking on the arrows, menus and hyperlinks.</p>	<p><b>Effectively retrieve relevant, purposeful digital content</b> using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge.</p>	<p><b>To find relevant information by browsing a menu.</b> To search for an image, then copy and paste it into a document. To be able to use 'Save picture as' to save an image to the computer. To be able to copy and paste text into a document. To begin to use note making skills to decide what text to copy.</p>	<p><b>To be able to use a search engine to find a specific website.</b> To use note-taking skills to decide which text to copy and paste into a document. To use tabbed browsing to open two or more web pages at the same time. To open a link to a new window. To be able to open a document (PDF) and view it.</p>	<p><b>To use a search engine using keyword searches. To be able to compare the results of different searches.</b> To decide which sections are appropriate to copy and paste from at least two web pages. To be able to save stored information following simple lines of enquiry. To download a document and save it to the computer.</p>	<p>To be able to contribute to discussions online. <b>To use a search engine using keyword searches.</b> To use complex searches using such as '+' 'OR' "Find the phrase in inverted commas".</p>
	<p><b>Handling Data</b></p>	<p><b>Talk about different kinds of information</b> such as pictures, video, text and sound.</p>	<p><b>To enter information into a template</b> to make a graph. To talk about the results shown on a graph. Know that images give information.</p>	<p><b>To demonstrate an ability to organise data</b> using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Sort objects and pictures into lists or simple tables.</p>	<p><b>To be able to input data into a prepared database. To sort and search a database</b> to answer simple questions. To be able to use a branching database.</p>	<p><b>To be able to input data into a prepared database. To sort and search a database to answer simple questions.</b> To be able to recognise what a spreadsheet is. To use the terms 'cells', 'rows' and 'columns'. <b>To know how to enter data,</b> highlight it and make bar charts.</p>	<p>To be able to create a formula in a spreadsheet and then check for accuracy and plausibility. <b>To search databases for information</b> using symbols such as = &gt; or</p>	<p><b>To collect live data</b> using data logging equipment. <b>To identify data error,</b> patterns and sequences. To use the formulae bar to explore mathematical scenarios. <b>To be able to create their own database and present information from it.</b></p>

	<b>Presentation</b>	Children can use technology to show their learning.	<b>To use technology to collect information,</b> including photos, video and sound. To sort different kinds of information and present it to others.	To be able to experiment with text, pictures, sound and animation to make a simple slide show.	<b>To create a presentation</b> that moves from slide to slide and is aimed at a specific audience. To be able to combine text, images and sounds and show awareness of audience. To know how to manipulate text, underline text, centre text, change font and size and save text to a folder.	<b>To be able to create a lengthy presentation</b> that moves from slide to slide and is aimed at a specific audience. To be able to insert sound recordings into a multimedia presentation. To know how to manipulate text, underline text, centre text, change font and size and save text to a folder.	<b>To use a range of presentation applications.</b> To be able to consider audience when editing a simple film. To know how to prepare and then present a simple film. To use ICT to record sounds and capture both still and video images. To make a home page for a website that contains links to other pages. To capture sounds, images and video. To use the word count tool to check the length of a document. To be able to use bullets and numbering tools.	To present a film for a specific audience and then adapt same film for a different audience. <b>To be able to create a sophisticated multimedia presentation.</b> To confidently choose the correct page set up option when creating a document. To confidently use text formatting tools, including heading and body text. To use the 'hanging indent' tool to help format work where appropriate (e.g. a play script).
--	---------------------	---	--	--	--	---	---	--

	<p><b>Technology in our lives</b></p>	<p><b>Children can tell you about technology that is used at home and in school.</b>  Children can operate simple equipment.  Children can use a safe part of the Internet to play and learn.</p>	<p><b>Recognise the ways we use technology in our classroom. Recognise ways that technology is used in my home and community.</b>  Use links to websites to find information.  Begin to identify some of the benefits of using technology.</p>	<p><b>Tell you why I use technology in the classroom. Tell you why I use technology in my home and community.</b>  Start to understand that other people have created the information I use.  Identify benefits of using technology including finding information, creating and communicating.  Talk about the differences between the Internet and things in the physical world.</p>	<p>Save and retrieve work on the Internet, the school network or my own device.  Talk about the parts of a computer.  Tell you ways to communicate with others online.  <b>Describe the World Wide Web as the part of the Internet that contains websites.</b>  Use search tools to find and use an appropriate website.  Think about whether I can use images that I find online in my own work.</p>	<p><b>Tell you whether a resource I am using is on the Internet, the school network or my own device.</b>  Identify key words to use when searching safely on the World Wide Web.  <b>Think about the reliability of information I read on the World Wide Web.</b>  Tell you how to check who owns photos, text and clipart.  Create a hyperlink to a resource on the World Wide Web.</p>	<p><b>Describe different parts of the Internet. Use different online communication tools for different purposes.</b>  Use a search engine to find appropriate information and check its reliability.  <b>Recognise and evaluate different types of information I find</b> on the World Wide Web.  Describe the different parts of a webpage.  Find out who the information on a webpage belongs to.</p>	<p><b>Talk about the Internet services I need to use for different purposes.</b>  Describe how information is transported on the Internet.  <b>Select an appropriate tool to communicate and collaborate online.</b>  Talk about the way search results are selected and ranked.  Check the reliability of a website.  Talk about copyright and acknowledge the sources of information that I find online.</p>
--	---------------------------------------	---	--	---	---	---	---	--

	<b>E-Safety</b>	<p>Children learn that they can go to exciting places online, but they need to follow certain rules to remain safe. Children learn that many websites ask for information that is private and discuss how to responsibly handle such requests</p>	<p><b>Identify trusted adults within their family and school.</b> Know that strangers use online services. Know that some online content is inappropriate. Know that damaged or strange devices should not be touched. Know that there are good choices about when and where to use a device. <b>Know that personal information should not be shared with strangers.</b></p>	<p><b>Understand where to go for help and support when he/she has concerns about content or contact on the internet and other online technologies.</b> Identify trusted adults within the family, school and emergency services. Know that strangers who ask questions may be dangerous. Know that it's good to check with someone before accessing something online. Know that being patient with devices is a good choice. Know the difference between a device being on and on 'standby'. Know to check before giving permission.</p>	<p><b>Identify a wider range of places/ways to report concerns.</b> Know that going online in a private place is a bad idea. Know that not everything online is true. Know that devices can be distracting. Understand that using a device at certain times can be disrespectful. Know what makes an effective password</p>	<p><b>Know how to use a wider range of places/ways to report concerns.</b> Know that online gifts aren't always what they seem. Know that opinions should be supported by facts. Know that devices can be distracting to other people. <b>Understand that breaking age limits can have consequences.</b> Know what the digital footprint is.</p>	<p><b>Understand the different benefits of reporting systems.</b> Know that asking permission before capturing an image is important. Know that people can learn to show respect and self-control. Know what to do if they find a lost device. Understand how using a device at night can affect their wellbeing. Know that apps may collect lots of data.</p>	<p><b>Understand how reporting a concerns works at a new school.</b> Know that sharing images can have consequences. Know that some content can promote stereotypes. <b>Understand that losing patience with a device can have bad consequences.</b> Understand that devices cost valuable resources. <b>Know their data rights and responsibilities</b></p>
--	-----------------	---	--	--	---	--	--	--