

## Computing Curriculum Skill Progression

<p>POS KS1</p> <p>Key stage 1 Pupils should be taught to:</p> <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>				<p>POS KS2</p> <p>Key stage 2 Pupils should be taught to:</p> <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>			
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer systems and networks		<b>Technology around us</b> To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type To use the keyboard to edit text	<b>Information technology around us</b> To recognise the uses and features of information technology To identify information technology in the home To identify information technology beyond school	<b>Connecting computers</b> To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information	<b>The internet</b> To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web To describe how content can be added and	<b>Sharing information</b> To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet	<b>Communication</b> To identify how to use a search engine To describe how search engines select results To describe how search engines select results To explain how search results are ranked To recognise why the order of results is

		To create rules for using technology responsibly	To explain how information technology benefits us To show how to use information technology safely To recognise that choices are made when using information technology	To explore how digital devices can be connected To recognise the physical components of a network	accessed on the World Wide Web To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content	To explain how sharing information online lets people in different places work together To contribute to a shared project online To evaluate different ways of working together online	important, and to whom To recognise how we communicate using technology To evaluate different methods of online communication
Creating Media		<b>Digital painting</b> To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper	<b>Digital photography</b> To know what devices can be used to take photographs To use a digital device to take a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that images can be changed  <b>Making music</b>	<b>Stop-frame animation</b> To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation  <b>Desktop publishing</b> To recognise how text and images convey information	<b>Audio editing</b> To identify that sound can be digitally recorded To use a digital device to record sound To explain that a digital recording is stored as a file To explain that audio can be changed through editing To show that different types of audio can be combined and played together To evaluate editing choices made	<b>Video editing</b> To recognise video as moving pictures, which can include audio To identify digital devices that can record video To capture video using a digital device To recognise the features of an effective video To identify that video can be improved through reshooting and editing To consider the impact of the choices made	<b>Web page creation</b> To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content

		<b>Digital writing</b> To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text To explain why I used the tools that I chose To compare writing on a computer with writing on paper	To say how music can make us feel To identify that there are patterns in music To describe how music can be used in different ways To show how music is made from a series of notes To create music for a purpose To review and refine our computer work	To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing	<b>Photo editing</b> To explain that digital images can be changed To change the composition of an image To describe how images can be changed for different uses To make good choices when selecting different tools To recognise that not all images are real To evaluate how changes can improve an image	when making and sharing a video  <b>Vector drawing</b> To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To evaluate my vector drawing	owned by other people  <b>3D modelling</b> To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To identify that physical objects can be broken down into a collection of 3D shapes To design a digital model by combining 3D objects To develop and improve a digital 3D model
Data and information		<b>Grouping data</b> To label objects To identify that objects can be counted	<b>Pictograms</b> To recognise that we can count and compare objects using tally charts	<b>Branching databases</b> To create questions with yes/no answers	<b>Data logging</b> To explain that data gathered over time can be	<b>Flat-file databases</b> To use a form to record information	<b>Spreadsheets</b> To identify questions which can be answered using data

		<p>To describe objects in different ways</p> <p>To count objects with the same properties</p> <p>To compare groups of objects</p> <p>To answer questions about groups of objects</p>	<p>To recognise that objects can be represented as pictures</p> <p>To create a pictogram</p> <p>To select objects by attribute and make comparisons</p> <p>To recognise that people can be described by attributes</p> <p>To explain that we can present information using a computer</p>	<p>To identify the object attributes needed to collect relevant data</p> <p>To create a branching database</p> <p>To identify objects using a branching database</p> <p>To explain why it is helpful for a database to be well structured</p> <p>To compare the information shown in a pictogram with a branching database</p>	<p>used to answer questions</p> <p>To use a digital device to collect data automatically</p> <p>To explain that a data logger collects 'data points' from sensors over time</p> <p>To use data collected over a long duration to find information</p> <p>To identify the data needed to answer questions</p> <p>To use collected data to answer questions</p>	<p>To compare paper and computer-based databases</p> <p>To outline how grouping and then sorting data allows us to answer questions</p> <p>To explain that tools can be used to select specific data</p> <p>To explain that computer programs can be used to compare data visually</p> <p>To apply my knowledge of a database to ask and answer real-world questions</p>	<p>To explain that objects can be described using data</p> <p>To explain that formula can be used to produce calculated data</p> <p>To apply formulas to data, including duplicating</p> <p>To create a spreadsheet to plan an event</p> <p>To choose suitable ways to present data</p>
Computer Science and Programming		<p><b>Moving a robot</b></p> <p>To explain what a given command will do</p> <p>To act out a given word</p> <p>To combine forwards and backwards commands to make a sequence</p> <p>To combine four direction</p>	<p><b>Robot algorithms</b></p> <p>To describe a series of instructions as a sequence</p> <p>To explain what happens when we change the order of instructions</p> <p>To use logical reasoning to predict the outcome of a</p>	<p><b>Sequence in music</b></p> <p>To explore a new programming environment</p> <p>I can identify that each sprite is controlled by the commands I choose</p> <p>To explain that a program has a start</p> <p>To recognise that a sequence of commands can have an order</p>	<p><b>Repetition in shapes</b></p> <p>To identify that accuracy in programming is important</p> <p>To create a program in a text-based language</p> <p>To explain what 'repeat' means</p> <p>To modify a count-controlled</p>	<p><b>Selection in physical computing</b></p> <p>To control a simple circuit connected to a computer</p> <p>To write a program that includes count-controlled loops</p> <p>To explain that a loop can stop when a condition</p>	<p><b>Variables in games</b></p> <p>To define a 'variable' as something that is changeable</p> <p>To explain why a variable is used in a program</p> <p>To choose how to improve a game by using variables</p> <p>To design a project that builds</p>

		<p>commands to make sequences To plan a simple program To find more than one solution to a problem</p> <p><b>Introduction to animation</b> To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program</p>	<p>program (series of commands) To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written</p> <p><b>Introduction to quizzes</b> To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved</p>	<p>To change the appearance of my project To create a project from a task description</p> <p><b>Events and actions</b> To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge</p>	<p>loop to produce a given outcome To decompose a program into parts To create a program that uses count-controlled loops to produce a given outcome</p> <p><b>Repetition in games</b> To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count controlled loops To develop a design which includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that</p>	<p>is met, eg number of times To conclude that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a controllable system that includes selection</p> <p><b>Selection in games</b> To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program which uses selection</p>	<p>on a given example To use my design to create a project To evaluate my project</p> <p><b>Sensing</b> To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a</p>
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					includes repetition To create a project that includes repetition	To create a program which uses selection To evaluate my program	controllable device
Online safety (through NCCE Teach Computing and Project Evolve)	To recognise (online or offline) that anyone can say 'no' 'please stop' 'I'll tell' 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset To recognise some ways in which the internet can be used to communicate To give examples of how they might use technology to communicate with people they know To identify ways that information can be put on the internet To describe some ways people can be unkind online and know how	To recognise that there may be people online who could make someone feel sad, embarrassed or upset To know to speak to an adult they can trust when something happens to make them feel sad, worried, uncomfortable or frightened To give examples of when they should ask for permission to do something online and use the internet with adult support to communicate with people they know Explain why it is important to be considerate and	To explain other how people may act differently online and offline To give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened and give examples of how they might help. To give examples of how someone might use technology to communicate with others they don't know offline and explain why this might be risky. To explain who they should ask before sharing things about themselves online.	To explain what is meant by the term 'identity' To explain how people can represent themselves in different ways online To explain ways in which someone might change their identity depending on what they are doing online To describe ways people who have similar likes and interests can get together online. To explain what it means to 'know someone' online and why this might be different from knowing someone offline To explain the importance of giving and gaining permission before sharing things online	Explain how their online identity can be different to their offline identity To describe positive ways for someone to interact with others online To explain that others online can pretend to be someone else To give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours To describe how to find out information about others by searching online Explain ways that some information about anyone	To explain how identity online can be copied, modified or altered To demonstrate how to make responsible choices about having an online identity To give some examples of technology-specific forms of communication To explain that there are some people they communicate with online who may want to do harm To describe some ways people may be involved in online communities and describe how they might collaborate	Identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups Describe issues online that could make anyone feel sad, worried, uncomfortable or frightened Know how to get help both on and offline Explain the importance of asking until they get the help they need To explain how sharing something online may have an impact To describe how to be kind and show respect for

	<p>this can make people feel.</p> <p>To talk about how to use the internet as a way of finding information online</p> <p>To identify rules that help keep us safe and healthy in and beyond the home when using technology</p> <p>To identify some examples of personal information</p> <p>To describe who would be trustworthy to share personal information with</p> <p>To know that work I create belongs to me</p>	<p>kind to people online and to respect their choices</p> <p>To explain why things one person might find funny or sad online</p> <p>might not always be seen in the same way by others.</p> <p>To recognise that information can stay online and could be copied</p> <p>To describe what information they should not put online without asking first</p> <p>To describe how to behave online in ways that do not upset others and can give examples</p> <p>To give some examples of how to find information using digital technologies</p> <p>To understand we can encounter a range of things</p>	<p>To describe different ways to ask for, give, or deny permission online and can identify who can help if they are not sure.</p> <p>To explain they have the right to say 'no' or 'I will have to ask someone'. To explain who can help if they feel under pressure to agree to something they are unsure about or don't want to do.</p> <p>To identify who can help if something happens online without their consent</p> <p>To explain how it may make others feel if they do not ask permission or ignore their answers before sharing something online</p>	<p>To explain how to search for information about others online</p> <p>To give examples of what anyone may or may not be willing to share about themselves online</p> <p>To explain who someone can ask if they are unsure about putting something online</p> <p>To describe appropriate ways to behave towards other people online and why this is important</p> <p>To give examples of how bullying behaviour could appear online and how someone can get support</p> <p>To explain the difference between a 'belief' and 'opinion' and a 'fact'</p> <p>To describe and demonstrate how they can get help from a trusted adult if they see content that makes them feel sad,</p>	<p>online could be copied or shared by others</p> <p>To recognise when someone is upset, hurt or angry online</p> <p>To describe ways people can be bullied through a range of media</p> <p>Explain why people need to think carefully about how content they post might affect others</p> <p>To analyse information to make a judgment about probable accuracy and understand why it is important to make their own decisions regarding content</p> <p>To describe some methods used to encourage people to buy things online</p> <p>Explain what it is meant by fake news</p>	<p>constructively with others</p> <p>To explain how someone can get help if they are having problems</p> <p>To search for information about an individual online and summarise</p> <p>Describe ways that information about anyone online can be used by others to make judgement about an individual and why these may be incorrect</p> <p>To recognise online bullying can be different to physical bullying</p> <p>To describe how what one person perceives as a joke might be experienced by others as bullying</p> <p>To explain how anyone can get help if they are being bullied online</p>	<p>others online including the importance of respecting boundaries</p> <p>To explain how taking or sharing inappropriate images of someone even if they say it is ok may have an impact for the sharer and others and who can help if someone is worried about this</p> <p>To explain the ways in which anyone can develop a positive online reputation</p> <p>To explain strategies anyone can use to protect their digital personality and online reputation</p> <p>To describe how to capture bullying content as evidence</p> <p>To explain how someone would report online</p>
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		<p>online including things we like and don't like as well as things which are real or make believe</p> <p>To know how to get help from a trusted adult if they see content that makes them feel uncomfortable, worried or frightened.</p> <p>To explain rules to keep themselves safe when using technology both in and beyond the home</p> <p>To explain how passwords are used to protect information, accounts and devices</p> <p>To recognise more detailed examples of information that is personal to someone.</p> <p>To explain why it is important to always ask a</p>	<p>To explain why they should always ask a trusted adult before clicking 'yes' 'agree' or 'accept' online</p> <p>To explain how information put online about someone can last for a long time</p> <p>To explain what bullying is, how people may bully others and how bullying can make someone feel</p> <p>To talk about how anyone experiencing bullying can get help</p> <p>To use simple keywords in search engines</p> <p>To demonstrate how to navigate a simple webpage to get information</p> <p>To explain what voice activated searching is and how it may be used, and know it</p>	<p>uncomfortable, worried or frightened.</p> <p>To explain why spending too much time using technology can sometimes have a negative impact on anyone</p> <p>To explain why some online activities have age restrictions, why it is important to follow them and know who to talk to if others pressure them to watch or do something online that makes them feel uncomfortable</p> <p>To describe strategies for creating and keeping passwords private</p> <p>To give reasons why they should only share information with people they choose to and can trust.</p> <p>To explain why copying someone else's work from the internet without permission isn't fair and explain what</p>	<p>Explain how using technology can be a distraction from other things</p> <p>To identify times or situations when someone may need to limit the amount of time they use technology</p> <p>To describe strategies for keeping personal information private</p> <p>To explain that internet use is never fully private and is monitored</p> <p>To describe how some online services may seek consent to store information and how to respond appropriately</p> <p>Know what the digital age of consent is and the impact this has on online services asking for consent.</p> <p>When searching on the internet for</p>	<p>To identify a range of ways to report concerns and access support both in school and at home about online bullying</p> <p>Explain how to block abusive users</p> <p>Explain the benefits and limitations of using different search technologies</p> <p>Evaluate digital content</p> <p>Describe ways of identifying when online content has been commercially sponsored</p> <p>Explain what is meant by 'stereotype'</p> <p>Describe how fake news may affect someone's emotions and behaviour</p> <p>Explain what is meant by a 'hoax'.</p> <p>Describe ways technology can</p>	<p>bullying in different contexts</p> <p>To explain how search engines work and how results are selected and ranked</p> <p>To explain how to use search technologies effectively</p> <p>To describe how some online information can be opinion</p> <p>Explain how and why some people may present opinions as facts</p> <p>Define the terms 'influence' 'manipulation' and 'persuasion'</p> <p>Demonstrate how to analyse and evaluate the validity of facts</p> <p>Explain how companies and news providers target people with online news stories they are more likely to engage with at</p>
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		<p>trusted adult before sharing any personal information online</p> <p>To explain why work they create using technology belongs to them</p> <p>To understand that work created by others does not belong to them even if they save a copy</p>	<p>is not a real person</p> <p>To explain why some information they find online may not be real or true.</p> <p>To explain simple guidance for using technology in different environments and settings</p> <p>To know how those rules/guides can help anyone accessing technologies</p> <p>To explain how passwords can be used to protect information, accounts and devices</p> <p>To explain and give examples of what is meant by 'private' and 'keeping things private'</p> <p>To describe and explain some rules for keeping personal information private</p>	<p>problems this might cause</p>	<p>content to use, explain why they need to consider who owns it and whether they have a right to use it</p>	<p>affect health and well-being</p> <p>Describe some strategies, tips or advice to promote health and well-being with regards to technology</p> <p>Explain how and why some apps and games may request or take payment for additional content and explain the importance of seeking permission from a trusted adult</p> <p>Explain what a strong password is</p> <p>Explain how many free apps or services may read and share private information</p> <p>To assess and justify when it is acceptable to use the work of others</p> <p>Give examples of content that is permitted to be reused and know how this content</p>	<p>how to recognise this.</p> <p>Describe the differences between online misinformation and dis-information.</p> <p>explain why information that is on a large number of sites may still be inaccurate or untrue.</p> <p>Identify, flag and report inappropriate content.</p> <p>Describe common systems that regulate age-related content</p> <p>Recognise and discuss the pressures that technology can place on someone and how/when they could manage this.</p> <p>Recognise features of persuasive design and how they are</p>
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			To recognise that content on the internet may belong to other people			can be found online	used to keep users engaged assess an action different strategies to limit the impact of technology on health. Describe effective ways people can manage passwords explain what to do if a password is shared lost or stolen Describe how and why people should keep their software and apps up to date describe simple ways to increase privacy on absence services that provide privacy settings describe ways in which some online content targets people to gain money or information illegally no the online services have
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							terms and conditions that govern their use Demonstrate the use of search tools to find and access online content which can be re used by others demonstrate how to make references to and acknowledge sources they have used from the Internet.
Basic Text skill Progression	Press buttons on a keyboard	To use index fingers (left and right hand) on a keyboard to build words and sentences To know when and how to use the space bar (thumbs) to make spaces between words	To create own documents using text and images To know when and how to use the return/enter key. To use shift & CAPS to enter capital letters To use delete and backspace button To know how to undo and redo To create sentences which can be saved and edited later	To create text and save using SAVE. To retrieve and amend text and save changes using SAVE AS (document name 2 etc to show sequential documents). To use individual fingers to input text and use SHIFT key to type characters To amend text by highlighting and use SELECT/DELETE & COPY/PASTE To make text bold, italic or underline it	To create text and save To retrieve file, edit and save changes. To use a keyboard effectively, including the use of keyboard shortcuts To use font sizes and effects such as bullet points appropriately To build a list by using bullet points or numbered points	As Year 4 and: To orient page view and page size To indent manually or within a list (suits non-fiction writing with subheadings and possibly subheadings) To insert a table and adjust its formatting adding new columns or rows and merging cells To save a copy of the document as a pdf (selecting	

			<p>To insert an image into text using clipart or copy an image from the internet and paste</p>	<p>and know when to use these</p> <p>To change the font type and size and colour</p> <p>To align text left, right, centre and know when these are used e.g. titles and subtitles centred but all other writing usually aligned to the left</p> <p>To insert an image into text using clipart or copy an image from the internet and paste</p>	<p>To move a word or sentence by highlighting and dragging it to a new position</p> <p>To know how to use spell check</p>	<p>dropdown option of file type) and understanding that this will create an unalterable document that would publish well on the web – would be good for blogging</p>	
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