

Computing Skills Progression Map

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
What is a Computer?	<ul style="list-style-type: none"> • use different digital devices • recognise that you can access content on a digital device • use a mouse, touchscreen or appropriate access device to target and select options on screen • recognise a selection of digital devices • recognise the basic parts of a computer, e.g. mouse, screen, keyboard • select a digital device to fulfil a specific task, e.g. to take a photo 	<ul style="list-style-type: none"> • identify technology • identify a computer and its main parts • use a mouse in different ways • use a keyboard type • use the keyboard edit text • create rules for using technology responsibly 	<ul style="list-style-type: none"> • recognise the uses and features of information technology • identify information technology in the home • identify information technology beyond school • explain how information technology benefits us • show how use information technology safely • recognise that choices are made when using information technology 	<ul style="list-style-type: none"> • explain how digital devices function • identify input and output devices • recognise how digital devices can change the way we work • explain how a computer network can be used share information • explore how digital devices can be connected • recognise the physical components of a network 	<ul style="list-style-type: none"> • describe how networks physically connect other networks • recognise how networked devices make up the internet • outline how websites can be shared via the World Wide Web • describe how content can be added and accessed on the World Wide Web • recognise how the content of the WWW is created by people • evaluate the consequences of unreliable content 	<ul style="list-style-type: none"> • explain that computers can be connected together form systems • recognise the role of computer systems in our lives • recognise how information is transferred over the internet • explain how sharing information online lets people in different places work together • contribute a shared project online • evaluate different ways of working together online 	<ul style="list-style-type: none"> • identify how use a search engine • describe how search engines select results • explain how search results are ranked • recognise why the order of results is important, and whom • recognise how we communicate using technology • evaluate different methods of online communication

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Presenting Information & Multimedia	<ul style="list-style-type: none"> • use technology to explore and access digital content • operate a digital device with support to fulfil a task • create simple digital content, e.g. digital art • choose media to convey information, e.g. image for a poster 	<ul style="list-style-type: none"> • describe what different freehand tools do • use the shape tool and the line tools • make careful choices when painting a digital picture • explain why I chose the tools I used • use a computer on my own paint a picture • compare painting a picture on a computer and on paper 	<ul style="list-style-type: none"> • know what devices can be used to take photographs • use a digital device to take a photograph • describe what makes a good photograph • decide how photographs can be improved • use tools to change an image • recognise that images can be changed 	<ul style="list-style-type: none"> • recognise how text and images convey information • recognise that text and layout can be edited • choose appropriate page settings • add content to a desktop publishing publication • consider how different layouts can suit different purposes • consider the benefits of desktop publishing 	<ul style="list-style-type: none"> • identify that sound can be digitally recorded • use a digital device to record sound • explain that a digital recording is stored as a file • explain that audio can be changed through editing • show that different types of audio can be combined and played together • evaluate editing choices made 	<ul style="list-style-type: none"> • recognise video as moving pictures, which can include audio • identify digital devices that can record video • capture video using a digital device • recognise the features of an effective video • identify that video can be improved through reshooting and editing • consider the impact of the choices made when making and sharing a video 	<ul style="list-style-type: none"> • review an existing website and consider its structure • plan the features of a web page • consider the ownership and use of images (copyright) • recognise the need to preview pages • outline the need for a navigation path • recognise the implications of linking to content owned by other people
		<ul style="list-style-type: none"> • use a computer write • add and remove text on a computer • identify that the look of text can be changed on a computer • make careful choices when changing text • explain why I used the tools that I chose • compare writing on a computer with writing on paper 	<ul style="list-style-type: none"> • say how music can make us feel • identify that there are patterns in music • describe how music can be used in different ways • show how music is made from a series of notes • create music for a purpose • review and refine our computer work 	<ul style="list-style-type: none"> • explain that animation is a sequence of drawings or photographs • relate animated movement with a sequence of images • plan an animation • identify the need to work consistently and carefully • review and improve an animation • evaluate the impact of adding other media to an animation 	<ul style="list-style-type: none"> • explain that digital images can be changed • change the composition of an image • describe how images can be changed for different uses • make good choices when selecting different tools • recognise that not all images are real • evaluate how changes can improve an image 	<ul style="list-style-type: none"> • identify that drawing tools can be used to produce different outcomes • create a vector drawing by combining shapes • use tools to achieve a desired effect • recognise that vector drawings consist of layers • group objects to make them easier to work with • evaluate my vector drawing 	<ul style="list-style-type: none"> • use a computer to create and manipulate three-dimensional (3D) digital objects • compare working digitally with 2D and 3D graphics • construct a digital 3D model of a physical object • identify that physical objects can be broken down into a collection of 3D shapes • design a digital model by combining 3D objects • develop and improve a digital 3D model

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Data	<ul style="list-style-type: none"> Access content in a range of formats, e.g. image, video, audio Answer basic questions about information displayed in images e.g. more or less 	<ul style="list-style-type: none"> label objects identify that objects can be counted describe objects in different ways count objects with the same properties compare groups of objects answer questions about groups of objects 	<ul style="list-style-type: none"> recognise that we can count and compare objects using tally charts recognise that objects can be represented as pictures create a pictogram select objects by attribute and make comparisons recognise that people can be described by attributes explain that we can present information using a computer 	<ul style="list-style-type: none"> create questions with yes/no answers identify the object attributes needed to collect relevant data create a branching database identify objects using a branching database explain why it is helpful for a database to be well structured compare the information shown in a pictogram with a branching database 	<ul style="list-style-type: none"> explain that data gathered over time can be used to answer questions use a digital device to collect data automatically explain that a data logger collects 'data points' from sensors over time use data collected over a long duration to find information identify the data needed to answer questions use collected data to answer questions 	<ul style="list-style-type: none"> use a form to record information compare paper and computer-based databases outline how grouping and then sorting data allows us to answer questions explain that tools can be used to select specific data explain that computer programs can be used to compare data visually apply my knowledge of a database to ask and answer real-world questions 	<ul style="list-style-type: none"> identify questions which can be answered using data explain that objects can be described using data explain that formula can be used to produce calculated data apply formulas to data, including duplicating create a spreadsheet to plan an event choose suitable ways to present data

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Programming & Algorithms	<ul style="list-style-type: none"> explore technology repeat an action with technology to trigger a specific outcome recognise the success or failure of an action follow simple instructions to control a digital device 	<ul style="list-style-type: none"> explain what a given command will do act out a given word combine forwards and backwards commands to make a sequence combine four direction commands to make sequences plan a simple program find more than one solution to a problem 	<ul style="list-style-type: none"> describe a series of instructions as a sequence plain what happens when we change the order of instructions use logical reasoning to predict the outcome of a program (series of commands) explain that programming projects can have code and artwork design an algorithm create and debug a program that I have written 	<ul style="list-style-type: none"> explore a new programming environment identify that each sprite is controlled by the commands I choose explain that a program has a start recognise that a sequence of commands can have an order change the appearance of my project create a project from a task description 	<ul style="list-style-type: none"> identify that accuracy in programming is important create a program in a text-based language explain what 'repeat' means modify a count-controlled loop to produce a given outcome decompose a program into parts create a program that uses count-controlled loops to produce a given outcome 	<ul style="list-style-type: none"> control a simple circuit connected to a computer write a program that includes count-controlled loops explain that a loop can stop when a condition is met, eg number of times conclude that a loop can be used to repeatedly check whether a condition has been met design a physical project that includes selection create a controllable system that includes selection 	<ul style="list-style-type: none"> define a 'variable' as something that is changeable explain why a variable is used in a program choose how to improve a game by using variables design a project that builds on a given example use my design to create a project evaluate my project
	<ul style="list-style-type: none"> recognise that we control computers input a short sequence of instructions to control a device 	<ul style="list-style-type: none"> choose a command for a given purpose show that a series of commands can be joined together identify the effect of changing a value explain that each sprite has its own instructions design the parts of a project use my algorithm to create a program 	<ul style="list-style-type: none"> explain that a sequence of commands has a start explain that a sequence of commands has an outcome create a program using a given design change a given design create a program using my own design decide how my project can be improved 	<ul style="list-style-type: none"> explain how a sprite moves in an existing project create a program to move a sprite in four directions adapt a program to a new context develop my program by adding features identify and fix bugs in a program design and create a maze-based challenge 	<ul style="list-style-type: none"> develop the use of count-controlled loops in a different programming environment explain that in programming there are infinite loops and count controlled loops develop a design which includes two or more loops which run at the same time modify an infinite loop in a given program design a project that includes repetition create a project that includes repetition 	<ul style="list-style-type: none"> explain how selection is used in computer programs relate that a conditional statement connects a condition to an outcome explain how selection directs the flow of a program design a program which uses selection create a program which uses selection evaluate my program 	<ul style="list-style-type: none"> create a program to run on a controllable device explain that selection can control the flow of a program update a variable with a user input use an conditional statement to compare a variable to a value design a project that uses inputs and outputs on a controllable device develop a program to use inputs and outputs on a controllable device

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Digital Literacy - including online safety. This is not taught as a discrete subject through other computing units (specifically What is a Computer?) and through the PSHE Curriculum

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Self-Image and Identity	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> recognise that there may be people online who could make someone feel sad, embarrassed or upset give examples of when and how to speak to an adult I can trust and how they can help 	<ul style="list-style-type: none"> explain how other people may look and act differently online and offline give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened and how they might get help 	<ul style="list-style-type: none"> explain what is meant by the term 'identity' explain how people can represent themselves in different ways online explain ways in which someone might change their identity depending on what they are doing online 	<ul style="list-style-type: none"> explain how my online identity can be different to my offline identity describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this 	<ul style="list-style-type: none"> explain how identity online can be copied, modified or altered demonstrate how to make responsible choices about having an online identity, depending on context 	<ul style="list-style-type: none"> identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline explain the importance of asking until I get the help needed

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Online Reputation	<ul style="list-style-type: none"> identify ways that I can put information on the internet 	<ul style="list-style-type: none"> recognise that information can stay online and could be copied describe what information I should not put online without asking a trusted adult first 	<ul style="list-style-type: none"> explain how information put online about someone can last for a long time describe how anyone's online information could be seen by others know who to talk to if something has been put online without consent or if it is incorrect 	<ul style="list-style-type: none"> explain how to search for information about others online give examples of what anyone may or may not be willing to share about themselves online and explain the need to be careful before sharing anything personal explain who someone can ask if they are unsure about putting something online 	<ul style="list-style-type: none"> describe how to find out information about others by searching online explain ways that some of the information about anyone online could have been created, copied or shared by others 	<ul style="list-style-type: none"> search for information about an individual online and summarise the information found describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect 	<ul style="list-style-type: none"> explain the ways in which anyone can develop a positive online reputation explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity

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Online Bullying	<ul style="list-style-type: none"> describe ways that some people can be unkind online offer examples of how this can make others feel 	<ul style="list-style-type: none"> describe how to behave online in ways that do not upset others and can give examples 	<ul style="list-style-type: none"> explain what bullying is, how people may bully others and how bullying can make someone feel explain why anyone who experiences bullying is not to blame talk about how anyone experiencing bullying can get help 	<ul style="list-style-type: none"> describe appropriate ways to behave towards other people online and why this is important give examples of how bullying behaviour could appear online and how someone can get support 	<ul style="list-style-type: none"> recognise when someone is upset, hurt or angry online describe ways people can be bullied through a range of media explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation) 	<ul style="list-style-type: none"> recognise online bullying can be different to bullying in the physical world and can describe some of those differences describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult identify a range of ways to report concerns and access support both in school and at home about online bullying explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult identify a range of ways to report concerns and access support both in school and at home about online bullying explain how to block abusive users describe the helpline services which can help people experiencing bullying, and how to access them 	<ul style="list-style-type: none"> describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me explain how someone would report online bullying in different contexts

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Managing Online Information	<ul style="list-style-type: none"> talk about how to use the internet as a way of finding information online identify devices I could use to access information on the internet 	<ul style="list-style-type: none"> know how to find information using digital technologies, e.g. search engines, voice activated searching 	<ul style="list-style-type: none"> use simple keywords in search engines demonstrate how to navigate a simple webpage to get to information I need explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri) explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real' explain why some information I find online may not be real or true 	<ul style="list-style-type: none"> demonstrate how to use key phrases in search engines to gather accurate information online explain what autocomplete is and how to choose the best suggestion explain how the internet can be used to sell and buy things explain the difference between a 'belief', an 'opinion' and a 'fact' and give examples of how and where they might be shared online explain that not all opinions shared may be accepted as true or fair by others describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened 	<ul style="list-style-type: none"> analyse information to make a judgement about probable accuracy understand why it is important to make my own decisions regarding content and that my decisions are respected by others describe how to search for information within a wide group of technologies make a judgement about probable accuracy describe some of the methods used to encourage people to buy things online recognise some of these when they appear online explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true explain that technology can be designed to act like or impersonate living things (e.g. bots) and describe what the benefits and the risks might be explain what is meant by fake news 	<ul style="list-style-type: none"> explain the benefits and limitations of using different types of search technologies explain how some technology can limit the information presented explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical' evaluate digital content and can explain how to make choices about what is trustworthy explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence identify ways the internet can draw us to information for different agendas describe ways of identifying when online content has been commercially sponsored or boosted explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why accepting 'stereotypes' may influence how people think about others describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful explain what is meant by a 'hoax' explain why someone would need to think carefully before sharing 	<ul style="list-style-type: none"> explain how search engines work and how results are selected and ranked explain how to use search technologies effectively describe how some online information can be opinion and can offer examples explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online understand the concept of persuasive design and how it can be used to influence people's choices demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this describe the difference between online misinformation and dis-information explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen identify, flag and report inappropriate content
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Health, Well-being and Lifestyle	<ul style="list-style-type: none"> • identify and give examples of rules that help keep us safe and healthy in and beyond the home when using technology 	<ul style="list-style-type: none"> • explain rules to keep myself safe when using technology both in and beyond the home 	<ul style="list-style-type: none"> • explain simple guidance for using technology in different environments and settings • know how those rules / guides can help anyone accessing online technologies 	<ul style="list-style-type: none"> • explain why spending too much time using technology can sometimes have a negative impact on anyone • give some examples of both positive and negative activities where it is easy to spend a lot of time engaged • explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable 	<ul style="list-style-type: none"> • explain how using technology can be a distraction from other things, in both a positive and negative way • identify times or situations when someone may need to limit the amount of time they use technology 	<ul style="list-style-type: none"> • describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively • describe some strategies, tips or advice to promote health and wellbeing with regards to technology • recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals • 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 before purchasing 	<ul style="list-style-type: none"> • describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose • recognise and discuss the pressures that technology can place on someone and how / when they could manage this • recognise features of persuasive design and how they are used to keep users engaged • assess and action different strategies to limit the impact of technology on health
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Privacy and Security	<ul style="list-style-type: none"> identify some simple examples of my personal information (e.g. name, address, birthday, age, location) describe who would be trustworthy to share this information with and why they are trusted 	<ul style="list-style-type: none"> explain that passwords are used to protect information, accounts and devices recognise more detailed examples of information that is personal to someone explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others 	<ul style="list-style-type: none"> explain how passwords can be used to protect information, accounts and devices explain and give examples of what is meant by 'private' and 'keeping things private' describe and explain some rules for keeping personal information private explain how some people may have devices in their homes connected to the internet and give examples 	<ul style="list-style-type: none"> describe simple strategies for creating and keeping passwords private give reasons why someone should only share information with people they choose to and can trust explain that if they are not sure or feel pressured then they should tell a trusted adult describe how connected devices can collect and share anyone's information with others 	<ul style="list-style-type: none"> describe strategies for keeping personal information private, depending on context explain that internet use is never fully private and is monitored describe how some online services may seek consent to store know how to respond appropriately and who to ask if unsure 	<ul style="list-style-type: none"> explain what a strong password is and demonstrate how to create one can explain how many free apps or services may read and share private information explain what app permissions are and can give some examples 	<ul style="list-style-type: none"> 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 apps and services that provide privacy settings describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content know that online services have terms and conditions that govern their use

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Copyright and Ownership	<ul style="list-style-type: none"> know that work I create belongs to me name my work so that others know it belongs to me 	<ul style="list-style-type: none"> explain why work I create using technology belongs to me say why it belongs to me save my work under a suitable title or name so that others know it belongs to me understand that work created by others does not belong to me even if I save a copy 	<ul style="list-style-type: none"> recognise that content on the internet may belong to other people describe why other people's work belongs to them 	<ul style="list-style-type: none"> explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause 	<ul style="list-style-type: none"> consider who owns internet content whether they have the right to reuse it give some simple examples of content which I must not use without permission from the owner 	<ul style="list-style-type: none"> assess and justify when it is acceptable to use the work of others give examples of content that is permitted to be reused and know how this content can be found online 	<ul style="list-style-type: none"> demonstrate the use of search tools to find and access online content which can be reused by others demonstrate how to make references to and acknowledge sources I have used from the internet

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