



Computing: Knowledge and Skills Progression Map

Nursery	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Substantive Knowledge:	<p>Throughout the year, these activities will be covered throughout continuous provision and extended with adult modelling:</p> <ul style="list-style-type: none">-Use of iPads to press buttons to carry out actions, watch videos, play games, make marks-Use of interactive whiteboard to watch videos, make marks and select things by pressing-Use of computers to play games and use a mouse-Know that the computer allows the interactive whiteboard to work-Know that you use the left button to click on a mouse-Know that you move the mouse to move the cursor on the computer-Use of coding critters					

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Reception	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Throughout the year, these activities will be covered throughout continuous provision and extended with adult modelling:</p> <ul style="list-style-type: none"> -Use of computers -Use of listening areas to listen to storybooks -Know different types of technology (microwaves, toasters, phones etc) have a purpose and require electricity to work 					
Substantive Knowledge:	<p>Throughout the year, these activities will be carried out in small group work with an adult:</p> <ul style="list-style-type: none"> -Use of coding critters to... -Use of iPads to take photographs, play games relating to maths and phonics requiring pressing buttons and make videos <p><u>Online Safety:</u></p> <p><u>Self-image and identity</u></p> <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 <p><u>Online bullying:</u></p> <ul style="list-style-type: none"> -Describe ways that some people can be unkind online. -Offer examples of how being unkind online can make others feel. <p><u>Online Relationships:</u></p> <ul style="list-style-type: none"> -Recognise some ways in which the internet can be used to communicate. -Give examples of how I (might) use technology to communicate with people I know. <p><u>Copyright and ownership:</u></p> <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. <p><u>Managing online information:</u></p> <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 <p><u>Health, well-being and lifestyle:</u></p> <ul style="list-style-type: none"> -Identify rules that help keep us safe and healthy in and beyond the home when using technology. -Give some simple examples of these rules. <p><u>Privacy and security:</u></p> <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; I can explain why they are trusted. 					

Key Stage 1

By the end of KS1, children will:

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- Create and debug simple programs
- Use logical reasoning to predict the behaviour of simple programs
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- Recognise common uses of information technology beyond school 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.

KS1 Vocabulary:

Technology, rules, mouse, keyboard, computer, online, trusted adult, bullying, security, passwords, copyright, floor robot, memory, portrait, landscape, tools, predict, run, photography, lighting, edited, commands, algorithm, debug, permission

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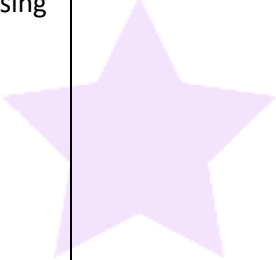

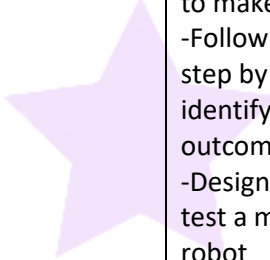
Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Technology Around Us (Digital Literacy)	Self-image and Identity Health, wellbeing and lifestyle Privacy and Security (Online Safety)	Digital Painting (Creating Media)	Copyright and Ownership Managing Online Information (Online Safety)	Moving a Robot (Programming)	Online Relationships Online Reputation Online Bullying (Online Safety)
National Curriculum links:	-Use technology purposefully to create, organise, store, manipulate and retrieve digital content -Recognise common uses of information technology beyond school	-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.	-Use technology purposefully to create, organise, store, manipulate and retrieve digital content	-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.	-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions -Create and debug simple programs -Use logical reasoning to predict the behaviour of simple programs	-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.
Substantive Knowledge:	-Understand what is 'technology' and how it helps us -Explore why we have rules and how those rules help us -Know what a mouse is and what it is for -Know the different parts of a computer	<u>Online Reputation</u> -Recognise that information can stay online and could be copied. -Describe what information I should not put online without asking a trusted adult first. <u>Online Bullying</u> -Describe how to behave online in ways that do not upset others and can give examples.	-Know which tools to use and when/why -Know how to change the size of brush and colour of paint	<u>Self-image and Identity</u> -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. <u>Privacy and Security</u> -Explain how passwords are used	-Know what a floor robot is -Know which buttons move the robot, clear memory and run programs -Know how precise direction instructions need to be when using a computer -Understand there is more than one way to solve a problem	<u>Online Relationships</u> -Give examples of when I should ask permission to do something online and explain why this is important. -Use the internet with adult support to communicate with people I know (e.g. video call apps or services). -Explain why it is important to be considerate and kind to people online and

		<p><u>Health, wellbeing and lifestyle</u></p> <p>-Explain rules to keep myself safe when using technology both in and beyond the home.</p>	<p>to protect information, accounts and devices.</p> <p>-Recognise more detailed examples of information that is personal to someone (e.g. where someone lives and goes to school, family names).</p> <p>-Explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.</p> <p><u>Copyright and Ownership</u></p> <p>-Explain why work I create using technology belongs to me.</p> <p>-Save my work under a suitable title or name so that others know it belongs to me (e.g. filename, name on content).</p> <p>-Understand that work created by others does not belong to me even if I save a copy.</p>		<p>to respect their choices.</p> <p>-Explain why things one person finds funny or sad online may not always be seen the same way by others.</p> <p><u>Managing Online Information</u></p> <p>-Give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching.</p> <p>-Know/understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe/a joke.</p> <p>-Know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened.</p>
Disciplinary Knowledge:	-Use a computer keyboard for a purpose		-Make marks on a screen using freehand tools		-Predict what buttons might do and test their theories

	<ul style="list-style-type: none"> -Use a mouse to click on things -Apply their knowledge of the different parts of a computer to use them -Apply their understanding of rules needed for using computer technology safely 	<ul style="list-style-type: none"> -Use the shape and line tools to create their own digital painting in the style of an artist -Make careful choices to create a painting in the style of an artist -Explain the reasons for choosing certain tools and colours -Select appropriate colours, brush sizes and brush tools to independently create their own image -Compare their preferences when creating paintings on computers and on paper 		<ul style="list-style-type: none"> -Link a button to an outcome -Follow and give instructions to a partner -Program the floor robot to move forwards and backwards -Progress to use the left and right turn commands -Predict when given programs will move the robot -Create a program and test it on the robot -Develop slightly more complex programs through trial and error -Debug their program where needed -Plan routes before programs are written 	
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Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	
	Technology Around Us (Digital Literacy)	Health, wellbeing and lifestyle Online Reputation Online Bullying (Online Safety)	Digital Photography (Creating Media)	Privacy and Security Copyright and Ownership Self-image and Identity (Online Safety)	Robot Algorithms (Programming)	Managing Online Information Online Relationships (Online Safety)
National Curriculum links:	-Use technology purposefully to create, organise, store, manipulate and retrieve digital content -Recognise common uses of information technology beyond school	-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.	-Use technology purposefully to create, organise, store, manipulate and retrieve digital content -Recognise common uses of information technology beyond school	-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.	-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions -Create and debug simple programs -Use logical reasoning to predict the behaviour of simple programs	-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.
Substantive Knowledge:	-Develop their understanding of what Information Technology is -Identify devices that are computers and consider how IT can help them both at school and beyond -Identify purposes of different technology in both the school setting and in the world	<u>Online Reputation</u> -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.	-Understand the difference between portrait and landscape photography and explore the reasons why photographers might prefer one over the other -Discover what constitutes good photography composition -Explore the effects of artificial lighting on photographs	<u>Self-image and Identity</u> -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 <u>Privacy and Security</u>	-Understand that computers can only follow clear and unambiguous instructions -Understand decomposition by breaking algorithms into chunks	<u>Online Relationships</u> -Give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky (e.g. email, online gaming, a pen-pal from another school/country). -Explain who they should ask before sharing things about

	<p>Know that IT devices can work together for a purpose</p> <ul style="list-style-type: none"> -Know the rules of staying safe when using IT 	<p><u>Online Bullying</u></p> <ul style="list-style-type: none"> -Explain what bullying is and 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. <p><u>Health, wellbeing and lifestyle</u></p> <ul style="list-style-type: none"> -Explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment. -Say how those rules/guides can help anyone accessing online technologies. 	<ul style="list-style-type: none"> -Understand that images can be altered and edited -Develop awareness that not all images they see are real -Identify which photos are real and which have been changed 	<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 (e.g. creating and protecting passwords). <p><u>Copyright and Ownership</u></p> <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. 		<p>themselves or others online.</p> <ul style="list-style-type: none"> -Describe different ways to ask for, give, deny their permission online and can identify who can help if they are not sure. -Explain why they have a right to say 'no' or 'I will have to ask someone'. <p><u>Managing Online Information</u></p> <ul style="list-style-type: none"> -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.
<p>Disciplinary Knowledge:</p>	<ul style="list-style-type: none"> -Use IT in different types of activities and explain that sometimes they will need to use IT in different ways 		<ul style="list-style-type: none"> -Use devices to capture their own photographs -Compose and capture their own photographs 		<ul style="list-style-type: none"> -Follow and give instructions -Create short sequences using the same commands in different orders 	

	<ul style="list-style-type: none">-Demonstrate how IT devices work together to achieve a purpose-Demonstrate ways of staying safe when using IT			<ul style="list-style-type: none">-Investigate the effect that good lighting has on the quality of photos			<ul style="list-style-type: none">-Test command sequences to find different outcomes-Use logical reasoning to make predictions-Follow a program step by step and identify what the outcome will be-Design, create and test a mat for a floor robot-Design algorithms to move robot around mats by identifying starting and finishing points of a route-Find and fix errors in algorithms and programs	
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