

# Knowledge Progression in Computing at Foundation Stage

Knowledge and Understanding of the world							
Shaded = skills							
Computing links	Explores programmable toys	Understands cause and effect e.g. press forward to move it forward	Uses a simple app	Confidently knows how to use a simple app or game	Understands how to program a toy to get from A to B	Debugging when things go wrong	Identifies rules that help keep them safe and healthy when using technology
	To know when something makes me sad, either online and in real life		Knows what to do when something makes me sad, either online or in real life		Know they need to be kind online	Knows not to share information	
	Knows how to safely search online with or without support						
Taught throughout the year through all topics							

## Knowledge Progression in Computing at Key Stage One

	Digital Citizenship	Digital Literacy	Computer Science	Information Technology
<b>Year 1</b>	<ul style="list-style-type: none"> <li>✓ I can recognise that there may be people online who could make me feel sad, embarrassed or upset</li> <li>✓ If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust. (Butterfly feeling)</li> <li>✓ I can explain why it is important to be considerate and kind to people online</li> <li>✓ I can recognise that information can stay online and could be copied</li> <li>✓ I can describe what information I should not put online without asking a trusted adult first</li> <li>✓ I can describe how to behave online in ways that do not upset others and can give examples</li> <li>✓ I can explain rules to keep us safe when we are using technology both in and beyond the home</li> <li>✓ I can give examples of some of these rules</li> </ul>	<ul style="list-style-type: none"> <li>✓ See skills progression document.</li> </ul>	<p><b>Year 1</b> – Understand what algorithms are</p> <ul style="list-style-type: none"> <li>✓ Know how are algorithms implemented as programs on digital devices</li> <li>✓ I know that a program is a precise set of instructions</li> </ul>	<ul style="list-style-type: none"> <li>✓ Recognise common uses of information technology beyond school</li> <li>✓ I can explain why I should always ask a trusted adult before I share any information about myself online</li> <li>✓ I can explain how passwords can be used to protect information and devices</li> <li>✓ I can explain why work I create using technology belongs to me</li> <li>✓ I know what a browser is and how to open one</li> <li>✓ I can say why it belongs to me (e.g. 'it is my idea' or 'I designed it')</li> <li>✓ I can describe and demonstrate how to get help from a trusted adult or helpline if I find content that makes me feel sad, uncomfortable worried or frightened. (Butterfly feeling)</li> <li>✓ I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school)</li> </ul>

<p><b>Year 2</b></p>	<ul style="list-style-type: none"> <li>✓ Keeping personal information private</li> <li>✓ Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</li> <li>✓ I can explain how other people's identity online can be different to their identity in real life</li> <li>✓ I can describe ways in which people might make themselves look different online</li> <li>✓ I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help. (Butterfly feeling)</li> <li>✓ I can give examples of how I might use technology to communicate with others I do not know well</li> <li>✓ I can explain how information put online about me can last for a long time.</li> <li>✓ I know who to talk to if I think someone has made a mistake about putting something online</li> <li>✓ I can give examples of bullying behaviour and how it could look online</li> <li>✓ I understand how bullying can make someone feel</li> <li>✓ I can talk about how someone can/would get help about being bullied online or offline</li> <li>✓ I can explain simple guidance for using technology in different environments and settings.</li> <li>✓ I can say how those rules/guides can help me</li> <li>✓</li> </ul>	<ul style="list-style-type: none"> <li>✓ Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>✓ I know how to save an image from the internet rather than using copy &amp; paste</li> <li>✓ I can say which page orientation would best suit my work. e.g. portrait to landscape</li> <li>✓ I can explain what digital communication is</li> <li>✓ I can tell you what a program is</li> <li>✓ I can tell you what an event is</li> <li>✓ I know programs need an event to begin</li> <li>✓ I know that computers need precise instructions</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can tell you what a program is</li> <li>✓ I can tell you what an event is I</li> <li>✓ know that computers need precise instructions</li> <li>✓ I know programs need an event to begin</li> </ul>	<ul style="list-style-type: none"> <li>✓ Recognise common uses of information technology beyond school</li> <li>✓ I can explain what <b>voice activated searching</b> is and how it might be used (e.g. Alexa, Google Now, and Siri) I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'</li> <li>✓ I can explain why some information I find online may not be true</li> <li>✓ I can describe how online information about me could be seen by others I can describe and explain some rules for keeping my information private I can explain what passwords are and can use passwords for my accounts and devices</li> <li>✓ I can explain how many devices in my home could be connected to the internet and can list some of those devices</li> <li>✓ I can describe why other people's work belongs to them</li> <li>✓ I can recognise that content on the internet may belong to other people I can explain the difference between my school network and my home computer set up</li> <li>✓ I know there is a difference between physical, wireless and mobile networks</li> </ul>
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## Knowledge Progression in Computing at Key Stage Two

	Digital Citizenship	Digital Literacy	Computer Science	Information Technology
Year 3	<ul style="list-style-type: none"> <li>✓ Understand computer networks including the internet</li> <li>✓ Understand how computer networks can provide multiple services, such as the world wide web;</li> <li>✓ Understand the opportunities computer networks offer for communication and collaboration</li> <li>✓ I can explain what is meant by the term 'identity'</li> <li>✓ I can explain how I can represent myself in different ways online</li> <li>✓ I can explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an <b>avatar</b>; social media)</li> <li>✓ I can describe ways people who have similar likes and interests can get together online</li> <li>✓ I can give examples of technology specific forms of communication (e.g. <b>emojis, acronyms, text speak</b>)</li> <li>✓ I can explain some risks of communicating online with others I don't know well</li> <li>✓ I can explain why I should be careful who I trust online and what information I can trust them with</li> <li>✓ I can explain how my and other people's feelings can be hurt by what is said or written online.</li> <li>✓ I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can explain the difference between save and save as See skills document</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can tell you what a sequence is</li> <li>✓ I know that a sequence is a list of instructions in a particular order</li> <li>✓ I know that if I change the sequence I may change the outcome of the program</li> <li>✓ I can predict how a change in a sequence may impact on the outcome of a program</li> </ul>	<ul style="list-style-type: none"> <li>✓ Understand computer networks including the internet;</li> <li>✓ Understand how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration</li> <li>✓ I can explain what autocomplete is and how to choose the best suggestion</li> <li>✓ I can explain how the internet can be used to sell and buy things</li> <li>✓ I can explain the difference between a 'belief', an 'opinion' and a 'fact'</li> <li>✓ I can give reasons why I should only share information with people I choose to and can trust</li> <li>✓ I can explain that if I am not sure or I feel pressured, I should ask a trusted adult</li> <li>✓ I understand and can give reasons why passwords are important</li> <li>✓ I can describe simple strategies for creating and keeping passwords private</li> <li>✓ I can describe how connected devices can collect and share my information with others</li> <li>✓ I can explain why copying someone else's work from the internet without permission can cause problems</li> <li>✓ I can give examples of what those problems might be</li> </ul>

	<ul style="list-style-type: none"><li>✓ I can recognise I need to be careful before I share anything about others or myself online</li><li>✓ I know who I should ask if I am not sure if I should put something online</li><li>✓ I can explain what bullying is and can describe how people may bully others</li><li>✓ I can explain what it means to 'know someone' online and why this might be different from knowing someone in real I can explain what is meant by 'trusting someone online'. I can explain why this is different from 'liking someone online' life</li><li>✓ I can describe rules about how to behave online and how I follow them</li><li>✓ I can explain why spending too much time using technology can sometimes have a negative impact on me;</li><li>✓ I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos)</li></ul>	✓	✓	✓
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<p><b>Year 4</b></p>	<ul style="list-style-type: none"> <li>✓ Understand computer networks including the internet</li> <li>✓ Understand how computer networks can provide multiple services, such as the world wide web;</li> <li>✓ Understand the opportunities computer networks offer for communication and collaboration I</li> <li>✓ can explain how my online identity can be different to the identity I present in 'real life'.Knowing this, I can describe the right decisions about how I interact with others and how others perceive me</li> <li>✓ I can describe strategies for safe and fun experiences in a range of online social environments.</li> <li>✓ I can give examples of how to be respectful to others online</li> <li>✓ I can describe how others can find out information about me by looking online</li> <li>✓ I can explain ways that some of the information about me online could have been created, copied or shared by others</li> <li>✓ I can identify some online technologies where bullying might take place</li> <li>✓ I can describe ways people can be bullied through a range of media (e.g. image, video, text, <b>chat</b>)</li> <li>✓ I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation)</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can explain why I have chosen my layout and formatting</li> <li>✓ I can review and edit my work and talk about the changes I made</li> <li>✓</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can tell you what a loop or repeat is I</li> <li>✓ know that a loop is used to repeat a set of instructions</li> <li>✓ I can explain why it is important to use 'loops' in particular place in my sequence</li> </ul>	<ul style="list-style-type: none"> <li>✓ I understand what criteria have to be met before something is a 'fact' I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites)</li> <li>✓ I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; <b>in-app purchases</b>, pop-ups) and can recognise some of these when they appear online</li> <li>✓ I can explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people I can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true</li> <li>✓ I can explain what a strong password is</li> <li>✓ I can describe strategies for keeping my personal information private, depending on context</li> <li>✓ I can explain that others online can pretend to be me or other people, including my friends</li> <li>✓ I can suggest reasons why they might do this need to consider who owns it and whether I have the right to reuse it</li> </ul>
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	<ul style="list-style-type: none"> <li>✓ I can explain how using technology can distract me from other things I might do or should be doing</li> <li>✓ I can identify times or situations when I might need to limit the amount of time I use technology</li> <li>✓ I can suggest strategies to help me limit this time</li> </ul>	<p>✓</p>	<p>✓</p>	<ul style="list-style-type: none"> <li>✓ I can explain how internet use can be monitored</li> <li>✓ When searching on the internet for content to use, I can explain why I</li> <li>✓ I can talk about the advantages and disadvantages of using a computer</li> <li>✓ I understand that there are multiple platforms and the differences between these e.g. Windows / Apple</li> <li>✓ I explain file extensions and which ones attribute to different ICT products- .zip</li> <li>✓ I can describe what an ISP is</li> <li>✓ I can describe what a URL (web address) is</li> <li>✓ I can explain domain name types - .ac. uk .gov .sch</li> <li>✓ I can identify the most relevant results from a search engine – not just 'sponsored' links</li> <li>✓ I can discuss what it means to save work locally, to a network or into the 'Cloud'</li> </ul>
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<p><b>Year 5</b></p>	<ul style="list-style-type: none"> <li>✓ I can explain how identity online can be copied, modified or altered</li> <li>✓ I can demonstrate responsible choices about my online identity, depending on context</li> <li>✓ I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault</li> <li>✓ I can make positive contributions and be part of online communities I can describe some of the communities in which I am involved and describe how I collaborate with others positively</li> <li>✓ I can describe ways that information about people online can be used by others to make judgments about an individual</li> <li>✓ I can recognise when someone is upset, hurt or angry online I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone I can explain how to block abusive users</li> <li>✓ I can explain how I would report online bullying on the apps and platforms that I use</li> <li>✓ I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. <b>Childline / CEOP</b>)</li> <li>✓ advice to promote healthy sleep with regards to technology I can describe ways technology can affect healthy sleep and can describe some of the issues</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can explain why I have chosen my layout and formatting</li> <li>✓ I can review and edit my work and talk about the changes I made</li> <li>✓ I can think about whether my work is suitable for the audience</li> </ul> <p><b>Creativity</b></p> <ul style="list-style-type: none"> <li>✓ I can consider the effect of camera angles, light and shadow when filming</li> <li>✓ I can explain my choice of clips, effects and structure in resources I have created</li> <li>✓ I can discuss and compare film for effect on audience.</li> </ul> <p><b>Databases</b></p> <ul style="list-style-type: none"> <li>✓ I can decide on the most appropriate form of graph for a data set giving reasons for my choice</li> </ul>	<p><b>Year 5</b> – use sequence, selection and repetition in programs.</p> <ul style="list-style-type: none"> <li>✓ I can use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can explain key concepts including: Data, information, fact, opinion belief, true, false, valid, reliable and evidence</li> <li>✓ I understand the difference between online <b>mis-information</b> (inaccurate information distributed by accident) and <b>dis-information</b> (inaccurate information deliberately distributed and intended to mislead)</li> <li>✓ I can explain what is meant by ‘being sceptical’. I can give examples of when and why it is important to be ‘sceptical’</li> <li>✓ I can explain what is meant by a ‘hoax’. I can explain why I need to think carefully before I forward anything online</li> <li>✓ I can explain why some information I find online may not be honest, accurate or legal</li> <li>✓ I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation either by accident or on purpose)</li> <li>✓ I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, and geolocation) with others</li> <li>✓ I know what an operating system is and why it important</li> <li>✓ I can describe what each part does</li> <li>✓ I can discuss what it means to save work locally, to a network or to a ‘Cloud’</li> <li>✓ I can assess and justify when it is acceptable to use the work of others, and when I need to credit the source</li> </ul>
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	<p>✓ I can describe some strategies, tips or advice to promote healthy sleep with regards to technology</p>			<p>✓ I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing</p> <p>✓ I can recognise that intellectual property rights and copyright protection carry over into the online world.</p> <p>✓ I can give examples of content that is permitted to be reused</p>
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<b>Year 6</b>	<ul style="list-style-type: none"> <li>✓ I can describe ways in which media can shape ideas about gender I can challenge and explain why it is important to reject inappropriate messages about gender online</li> <li>✓ I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline</li> <li>✓ I can explain why I should keep asking until I get the help I need I can show I understand my responsibilities for the well-being of others in my online social group. I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming) I can demonstrate how I would support others (including those who are having difficulties) online. I can demonstrate ways of reporting problems online for both my friends and myself avoiding accidents)</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can explain why I have chosen my layout and formatting</li> <li>✓ I can review and edit my work and talk about the changes I made I can think about whether my work is suitable for the audience</li> </ul>	<p><b>Year 6</b> – use sequence, selection and repetition in programmes; work with variables and various forms of output and input.</p> <ul style="list-style-type: none"> <li>✓ I can explain what a variable is</li> <li>✓ I can evaluate the effectiveness of my programming and suggest improvements</li> <li>✓ I know that there are many other programming languages – C+, C#, java, Python, Ruby etc.</li> </ul>	<ul style="list-style-type: none"> <li>✓ I can explain how search engines work and how results are selected and ranked</li> <li>✓ I can describe how some online information can be opinion and can offer examples</li> <li>✓ I can explain how and why some people may present ‘opinions’ as ‘facts’</li> <li>✓ I can suggest what technology might look like in twenty years’ time I can describe effective strategies for managing those passwords (e.g. <b>password managers</b>, acronyms, stories</li> <li>✓ I know what to do if my password is lost or stolen</li> <li>✓ I can explain what app permissions are and can give some examples from the technology or services I use I can describe simple ways to increase privacy on apps and services that provide privacy settings</li> <li>✓ I can describe ways in which some online content targets people to gain money or information illegally; I can</li> </ul>
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<ul style="list-style-type: none"> <li>✓ I can explain how I am developing an online reputation, which will allow other people to form an opinion of me</li> </ul>	<p>BBFC, parental warnings) and describe their purpose</p> <ul style="list-style-type: none"> <li>✓ I can assess and action different strategies to limit the impact of technology on my health (e.g. nightshift mode, regular breaks, correct posture, sleep, diet and exercise)</li> <li>✓ I can explain the importance of selfregulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, I can describe some simple ways that help build a positive online reputation</li> <li>✓ I can describe how to capture bullying content as evidence (e.g. screen-grab, URL, profile) to share with others who can help me</li> </ul>			<p>describe strategies to help me identify such content (e.g. <b>scams, phishing</b>)</p>
	<ul style="list-style-type: none"> <li>✓ I can identify a range of ways to report concerns in both school and at home about online bullying</li> <li>✓ I can describe common systems that regulate age-related content (e.g. PEGI)</li> </ul>			