

# FUNDAMENTAL KNOWLEDGE OBJECTIVES - COMPUTING



Year Group		Fundamental knowledge	Vocabulary
Nursery	Personal, Social and Emotional Development	Remember rules without needing an adult to remind them	
	Physical Development	Match their developing physical skills to tasks and activities in the setting.	
	Understanding the World	Explore how things work.	
Reception	Personal, Social and Emotional Development	Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.	
	Physical Development	Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	
	Expressive Arts and Design	Explore, use and refine a variety of artistic effects to express their ideas and feelings.	
Year 1	Information Technology	<p><b>Animation:</b> To create animations that tell a story using more than one scene.</p> <p><b>Presentation:</b> To create a presentation with labels and images.</p> <p><b>AR and VR:</b> To explore augmented reality experiences.</p> <p><b>Video Creation:</b> To record a film by selecting still images.</p> <p><b>Data Handling:</b> To use a digital device to sort images/text into two categories.</p> <p><b>Sound:</b> To create a track using a sequence of sounds using garageband.</p> <p><b>Photography:</b> To use Draw and Tell HD to edit and create by own image.</p> <p><b>Word Processing:</b> To use the space, delete and return (enter) buttons accurately.</p>	

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	Computer Science	<p><b>Computational Thinking:</b> To explain and write a simple algorithm.</p> <p><b>Coding and Programming:</b> To locate and fix bugs in a program.</p>	
	Digital Literacy	<p><b>Self-image and identity:</b> To recognise that there may be people online who could make me feel sad, embarrassed or upset.</p> <p><b>Online Relationships:</b> To explain why it is important to be considerate and kind online.</p> <p><b>Online Reputation:</b> To explain which information I should not put online without asking a trusted adult first.</p> <p><b>Online Bullying:</b> To give examples of how to behave online to not upset people.</p> <p><b>Manage Online Information:</b> To use the internet to help find information.</p> <p><b>Health, Well-being and Lifestyle:</b> To use rules to keep us safe when we are using technology at school and at home.</p> <p><b>Privacy and Security:</b> To 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) and passwords.</p> <p><b>Copyright and Ownership:</b> To explain why work I create belongs to me.</p>	
Year 2	Information Technology	<p><b>Animation:</b> To create a simple stop motion animation.</p> <p><b>Presentation:</b> To create a presentation including speech.</p> <p><b>AR and VR:</b> To draw my own 360 image and create a QR code to explore it.</p> <p><b>Video Creation:</b> To use tools to add effects to a video including using green screen effects (with support)</p> <p><b>Data Handling:</b> To sort digital objects into a range of charts using digit apps and software.</p> <p><b>Sound:</b> To create a musical composition using garageband including my own sound effects.</p> <p><b>Photography:</b> To edit a photo using crop, filters and mark up including cutting images to layer on other images.</p> <p><b>Word Processing:</b> To copy and paste images and text creating documents with images and text alongside each other.</p>	
	Computer Science	<p><b>Computational Thinking:</b> To write, predict and debug algorithms for everyday tasks.</p> <p><b>Coding and Programming:</b> To create program using different digital devices e.g. Beebot or Scratch Jnr on a tablet.</p>	
	Digital Literacy	<p><b>Self-image and identity:</b> To explain how other people's identity online can be different to their identity in real life.</p> <p><b>Online Relationships:</b> To give examples of how I might use technology to communicate with others I don't know well</p> <p><b>Online Reputation:</b> To explain how information put online about me can last for a long time</p> <p><b>Online Bullying:</b> To give examples of bullying behaviour and how it could look online</p> <p><b>Manage Online Information:</b> To use keywords in search engines and demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections)</p> <p><b>Health, Well-being and Lifestyle:</b> To explain simple guidance for using technology in different environments and settings</p> <p><b>Privacy and Security:</b> To describe why other people's work belongs to them</p> <p><b>Copyright and Ownership:</b> To recognise that content on the internet may belong to other people</p>	

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Year Group	Objectives	Vocabulary
Year 3	<p><b>Information Technology</b></p> <p><b>Animation:</b> To use Animation tools in presenting software (keynote) to create simple Animations.</p> <p><b>Presentation:</b> To use annotated images including with videos to create a simple web page.</p> <p><b>AR and VR:</b> To create my own images and bring it into my surroundings through AR</p> <p><b>Video Creation:</b> To trim and cut film clips and add titles and transitions and independently create a green screen clip</p> <p><b>Data Handling:</b> To create my own sorting diagram and complete a Data Handling activity with it using images and text and start to input simple data into a spreadsheet.</p> <p><b>Sound:</b> To create and edit purposeful compositions using music software to create mood or a certain style including the use of live loops.</p> <p><b>Photography:</b> To create a digital image using a range of tools, pens, brushes and effects including instant alpha on keynote.</p> <p><b>Word Processing:</b> To edit the style and effect of my text and images to make my document more engaging and eye-catching. For example, borders and shadows.</p>	
	<p><b>Computer Science</b></p> <p><b>Computational Thinking:</b> To create and decompose projects (such as an Animation) into steps to create an algorithm</p> <p><b>Coding and Programming:</b> To design, create a program using a sequence of code.</p> <p><b>Computer Networks:</b> To understand that computers in a school are connected together in a network and why linking this to the Internet and the World Wide Web.</p>	
	<p><b>Digital Literacy</b></p> <p><b>Self-image and identity:</b> To explain what the word 'identity' means and how I can represent myself online.</p> <p><b>Online Relationships:</b> To explain some risks of communicating online with others and explain what it means to 'know someone' online.</p> <p><b>Online Reputation:</b> To recognise I need to be careful before I share anything about myself or others online.</p> <p><b>Online Bullying:</b> To describe rules about how to behave online and how I follow them.</p> <p><b>Manage Online Information:</b> To explain the difference between a 'belief', an 'opinion' and a 'fact' when searching online.</p> <p><b>Health, Well-being and Lifestyle:</b> To can explain why spending too much time using technology can sometimes have a negative impact on me</p> <p><b>Privacy and Security:</b> To give reasons why I should only share information with people I choose to and can trust</p> <p><b>Copyright and Ownership:</b> To explain why copying someone else's work from the internet without permission can cause problems</p>	

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<p><b>Year 4</b></p>	<p>Information Technology</p>	<p><b>Animation:</b> To use software to create a 3D animated story.  <b>Presentation:</b> To create an eBook with text, images and sound.  <b>AR and VR:</b> To create my own 360 video and images  <b>Video Creation:</b> To use confidently use green screen adding animated backgrounds  <b>Data Handling:</b> To create my own online multiple choice questionnaire and input the data into a spreadsheet and export the data in a variety of ways: charts, bar charts, pie charts.  <b>Sound:</b> To create a simple four chord song following the correct rhythm using and record a radio broadcast or audiobook  <b>Photography:</b> To enhance digital images and photographs using crop, brightness, contrast &amp; resize export as an animated GIF  <b>Word Processing:</b> To combine digital images from different sources, objects, and text to make a final piece of a variety of tasks: posters, documents, eBooks, scripts, leaflets using text shortcuts such as cut, copy and paste and delete to help organise text.</p>	
	<p>Computer Science</p>	<p><b>Computational Thinking:</b> To write more precise algorithms for use when programming and use simple selection and repetition in algorithms  <b>Coding and Programming:</b> To use logical reasoning to systematically detect and correct errors in programs  <b>Computer Networks:</b> To understand how the Internet enables us to collaborate</p>	
	<p>Digital Literacy</p>	<p><b>Self-image and identity:</b> To explain how my online identity can be different to the identity I present in 'real life'  <b>Online Relationships:</b> To describe strategies for safe and fun experiences in a range of online social environments  <b>Online Reputation:</b> To explain ways that some of the information about me online could have been created, copied or shared by others  <b>Online Bullying:</b> To describe ways people can be bullied through a range of media (e.g. image, video, text, chat)  <b>Manage Online Information:</b> To describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online  <b>Health, Well-being and Lifestyle:</b> To identify times or situations when I might need to limit the amount of time I use technology and suggest strategies to help me limit this time  <b>Privacy and Security:</b> To describe strategies for keeping my personal information private, depending on context  <b>Copyright and Ownership:</b> To understand when searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it</p>	

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Year 5	Information Technology	<p><b>Animation:</b> To record Animations of different characters and edit them together to create an interview.</p> <p><b>Presentation:</b> To create an interactive guide to an image by embedding digital content and publishing it online, creating a webpage.</p> <p><b>AR and VR:</b> To create an interactive AR and VR experience</p> <p><b>Video Creation:</b> To further improve green screen clips using crop and resize and explore more creative ways to use the tool - wearing green clothes and the masking tool</p> <p><b>Data Handling:</b> To use simple formulae to solve calculations including =sum and other statistical functions, including editing and formatting difference cells in a spreadsheet.</p> <p><b>Sound:</b> To use voice over and edit sound clips (volume, pitch, fade, effect) to create a podcast</p> <p><b>Photography:</b> To link and explain how to Photoshop images and how this is used in the media</p> <p><b>Word Processing:</b> To start to apply other useful effects to my documents such as hyperlinks.</p>	
	Computer Science	<p><b>Computational Thinking:</b> To solve problems by decomposing them into smaller parts</p> <p><b>Coding and Programming:</b> To create programs that control or simulate physical systems</p> <p><b>Computer Networks:</b> To understand how we view web pages on the Internet</p>	
	Digital Literacy	<p><b>Self-image and identity:</b> To explain how identity online can be copied, modified or altered</p> <p><b>Online Relationships:</b> To 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</p> <p><b>Online Reputation:</b> To explain ways that some of the information about me online could have been created, copied or shared by others</p> <p><b>Online Bullying:</b> To 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</p> <p><b>Manage Online Information:</b> To explain why I need to think carefully before I forward anything online</p> <p><b>Health, Well-being and Lifestyle:</b> To describe some strategies, tips or advice to promote healthy sleep with regards to technology</p> <p><b>Privacy and Security:</b> To explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others</p> <p><b>Copyright and Ownership:</b> To assess and justify when it is acceptable to use the work of others</p>	
Year 6	Information Technology	<p><b>Animation:</b> To choose and create different types of Animations to best explain my learning</p> <p><b>Presentation:</b> To choose applications to communicate to a specific audience.</p> <p><b>AR and VR:</b> To create and upload my own VR Google Expedition</p> <p><b>Video Creation:</b> To create videos using a range of media - green screen, Animations, film and image.</p> <p><b>Data Handling:</b> To write spreadsheet formula to solve more challenging math's problems.</p> <p><b>Sound:</b> To compose a soundtrack that can be added to a film project</p> <p><b>Photography:</b> To evaluate and discuss images explaining effects and filters that have been used to enhance the media</p>	

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		<b>Word Processing:</b> To publish my documents online regularly and discuss the audience and purpose of my content	
Computer Science		<p><b>Computational Thinking:</b> To demonstrate how to make references to and acknowledge sources I have used from the internet</p> <p><b>Coding and Programming:</b> To identify and write generic code for use across multiple projects</p> <p><b>Computer Networks:</b> To create a webpage using HTML</p>	
Digital Literacy		<p><b>Self-image and identity:</b> To 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</p> <p><b>Online Relationships:</b> To show I understand my responsibilities for the well-being of others in my online social group</p> <p><b>Online Reputation:</b> To explain how I am developing an online reputation which will allow other people to form an opinion of me</p> <p><b>Online Bullying:</b> To identify a range of ways to report concerns both in school and at home about online bullying</p> <p><b>Manage Online Information:</b> To demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important</p> <p><b>Health, Well-being and Lifestyle:</b> To explain the importance of self-regulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, avoiding accidents)</p> <p><b>Privacy and Security:</b> To describe simple ways to increase privacy on apps and services that provide privacy settings</p> <p><b>Copyright and Ownership:</b> To demonstrate how to make references to and acknowledge sources I have used from the internet</p>	