





## Computing Milestones

Knowledge Categories	Big Idea (National Curriculum)	Year R	Years 1 and 2	Years 3 and 4	Years 5 and 6
 <b>Multimedia</b>	Develop core skills, and to use and manipulate digital images, sound and music, text and multimedia and 3D objects.	Explore, use and refine a variety of artistic effects to express their ideas and feelings.	<p>I use the correct vocabulary when talking (screen, keyboard, mouse, microphone, headphones, iPad etc), can log into the school network and can use technology to create, organise and store digital content.</p> <p>I can create simple documents and can save and retrieve pictures and text.</p> <p>I can use a range of tools in a paint package and image manipulation software to create and modify a picture to communicate an idea and create a simple animation.</p> <p>I can compose music from icons and produce a simple presentation incorporating</p>	<p>I can use desktop tools to create documents, work collaboratively to produce documents, including presentations, and save and retrieve these.</p> <p>I can manipulate digital images using a range of tools in the appropriate software to convey a specific mood or idea.</p> <p>I can create a simple podcast, selecting and importing already existing music and sound effects as well recording my own.</p> <p>I begin to show an awareness of the intended audience and seek feed-back on presentations that combine</p>	<p>I can explain why I have chosen certain tools for a document, and can evaluate the tools I have used and suggest adaptations to enhance the content.</p> <p>I can make a short film or animation from images (still and/or moving) that I have sourced, captured or created.</p> <p>I can create and share more sophisticated podcasts and consider the effect that my podcast will have on the audience.</p> <p>I can use more advanced tools when word processing/DTP software such as tabs, appropriate text formatting, line spacing etc to create quality presentations</p>





			<p>sounds that I have captured or created.</p> <p>I can create projects, combining text, graphics and sound (with help where appropriate with the multimedia).</p>	<p>text and graphics, including hyperlinks.</p>	<p>appropriate for a known audience.</p> <p>I can create multimedia work which shows restrained use of effects that help to convey meaning rather than impress.</p>
 <p><b>E- Safety</b></p>	<p>Develop and understanding of how to safely connect with others.</p>	<p>To talk about what they are doing on a computer.</p> <p>To say if something they find on the Internet makes them feel bad.</p> <p>To speak to an adult about what they have seen.</p> <p>To follow the school's safer internet rules.</p>	<p>I am respectful to people via the internet and can explain why that is important.</p> <p>I understand that I will be reported if I type anything rude or offensive whilst on the school network, and that I must never do this using any electronic device.</p> <p>I know what personal information is, when it is appropriate to share or not to share in on an online environment, including when using online game chat rooms, and that passwords keep my information safe.</p> <p>I can recognise that people online might not be who they say they are.</p>	<p>I understand the term cyberbullying and know that my own behaviour online should not become cyberbullying.</p> <p>I understand that I will be reported if I type anything rude or offensive whilst on the school network, and that I must never do this using any electronic device.</p> <p>I recognise that viruses can attack computers through various methods (e.g. pop-up windows and email attachments) and understand that I must never open these.</p> <p>I understand who can access online data (including personal data) on a variety of platforms</p>	<p>I understand that I must respect the rights of others on the internet as well as recognising how to protect myself, including reporting cyberbullying.</p> <p>I make good choices about how to present myself online and understand the effects of cyberbully and what to do if I come across it.</p> <p>I understand plagiarism and how to avoid this in my writing, and I begin to acknowledge my sources and create references.</p> <p>I know when and where to share personal information, and know the difference</p>




			<p>I understand the need to abide by school e-safety rules when working online both at home and in school in order to keep me safe (e.g. making sure that an adult is aware of what I am doing online).</p> <p>I know that I must make sure that an adult knows what I am doing when I am online, and I know where to go for help and support if I have concerns about people contacting me on the internet.</p> <p>I begin to recognise that some information or articles on the internet may be incorrect or made-up, including photos altered, and I will always check with an adult if I am unsure.</p>	<p>including vlogging, online game chat rooms, pictures on social media, and understand that I must never share my passwords.</p> <p>I understand that anyone can be an author on the internet, they can produce content that is offensive, rude and upsetting, and I know what to do if I come across this.</p> <p>I always question whether people online are who they say they are, and will always tell an adult if I am unsure.</p> <p>I understand the need to abide by school e-safety rules when working online both at home and in school (e.g. making sure that an adult is aware of what I am doing online).</p> <p>I always tell an adult when I am online and I report my concerns if I read or see anything that I think is offensive, rude and upsetting (including cyber-bullying).</p>	<p>between secure and weak passwords.</p> <p>I always question whether people online are who they say they are, and know what to do if I am unsure, including blocking contacts and reporting issues to an adult.</p> <p>I always abide by e-safety rules when working online both at home and at school.</p> <p>I always tell an adult when I am online and understand that it is my responsibility to report concerns that I have about online content (including cyber-bullying).</p> <p>I can discuss the validity and reliability of different viewpoints from webbased source, including 'fake news', and can discuss the advantages and disadvantages of web-based communication tools.</p>
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				I can recognise that articles and information on the internet may be biased, irrelevant or wholly incorrect. I will always check with an adult if I am unsure.	
 <b>Technology</b>	Understand computing systems and Networks	Explore how things work.	I can use technology purposefully to create, organise, store, manipulate and retrieve digital content.	I 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.	I can use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
 <b>Coding</b>	Code, to understand algorithms, to use modelling and simulations, and to debug	To use a range of control toys and devices.	I understand that an algorithm is a set instructions and how algorithms are inputted (to program) to produce a result. I can begin to program using simple scripts and debug errors in the script. I can use a simple simulation to make choices and observe the results.	I can develop my understanding of how computers process instructions and commands such as scripts. I can program using scripts, and begin to use sequencing, selection and repetition, to achieve a goal or purpose, and debug errors found. I can use models and simulations, including the use of simple databases, to find	I can develop my understanding of how technology works and how computers process instructions and commands, including the use of coding languages. I can program and debug using scripts, including sequencing, selection and repetition, to accomplish a specific goal or purpose.



				things out, solve problems and make simple predictions e.g. virtual science, DT and to identify trends in different subject areas.	I can setup and use my own spreadsheet, which contains formulae to investigate mathematical models, and ask "what if ..." questions and change variables in the model.
 <b>Data Handling</b>	Communicate and collect (Email, databases, web design and datalogging in science)	To understand the purpose of and experiment with hardware such as cameras, computers, ipads, voice recorders etc	<p>I can work collaboratively by email to share and request information of another class or story character.</p> <p>I can use websites and begin to demonstrate an awareness of how to manage my journey around them (e.g. using the back/forward button, hyperlinks).</p> <p>I can create a simple database.</p> <p>I can retrieve data from a database.</p>	<p>I can send an email with a subject and email addresses in 'to', 'cc' and 'bcc' fields, and can begin to share ICT work electronically by email, VLE, or uploading to authorised sites.</p> <p>I can perform a search using different search engines and check the results against each other, explaining why they might be different.</p> <p>I can collect data and create my own basic database, and can begin to use a database to answer questions.</p> <p>I can retrieve information from simple databases and use data in pre-made databases to create charts and graphs.</p>	<p>I can respond to emails and attach additional information, and show the necessary care, awareness and sensitivity for this type of remote collaboration and communication.</p> <p>I can select useful information quickly from a range of online sources.</p> <p>I can enter data, use simple formulae and simple formatting in a database I have created.</p> <p>I can use spreadsheets to create graphs and present data in various ways.</p> <p>I can create websites for a specific purpose and evaluate and improve my design.</p>



				I can design and create a simple website, evaluate and improve my design, understanding the impact on my target audience.	
Vocabulary	<b>EYFS</b>	<b>Year 1 and 2</b>	<b>Year 3 and 4</b>	<b>Year 5 and 6</b>	
	click computers device drag electronic internet online robot sequence technology text	algorithm animation bee-bot camera compare create cyber data debug debug design devices e-safety focus hacking information interpret IT landscape outcome pattern pictogram portrait	adjustment algorithm analyse animate animation attributes audio branching capturing command count-controlled loop crop data data logger database debug decompose digital edit efficiency evaluate	algorithm align ambience animation artificial atmosphere audience chart view circuit concept connectivity content copyright database debug digital duplicating edit elements emulator fair use	



		predict prediction programme represent route Scratch sequence zoom	export extension block features function global networks image import input loops modify networks onion-skimming output page orientation podcast procedure programme project publisher repetition routes sensor sepia sequences sprite storyboard structure	features field format formulas HTML code hyperlinks implications input intelligence manipulation micro-controller modify motion navigation paths network object operand output precise pre-defined programme programming record references reflection robotics sequence
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