



# Progression of Skills: Computing



	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<b>Computer science</b>	<ul style="list-style-type: none"> <li>I can use directions, erase and go to form a sequence of moves towards a goal.</li> <li>I know up or forward will always move the object forward in the direction it is facing.</li> <li>I understand that a single turn left or right will move the object a quarter turn in that direction.</li> <li>I know that a single forward or backwards will move a set distance.</li> <li>I can program an increasingly difficult series of movements and carry it out accurately.</li> </ul>	<ul style="list-style-type: none"> <li>I can use beebots for different purposes such as; drawing with pens, delivering items etc.</li> <li>I can transfer instructions between software and hardware (such as beebot on iPad and hardware) and investigate similarities and differences.</li> <li>I can use the green flag input (event) block to begin a sequence.</li> <li>I can use scratch to move an item across the screen as well as up and down.</li> <li>I can make a sprite vanish, speak, grow or shrink.</li> <li>I can alter the sprites and backgrounds on scratch junior.</li> </ul>	<ul style="list-style-type: none"> <li>I can create simple sequences to make a sprite move along a predetermined path.</li> <li>I can refer to these whole sequences as algorithms.</li> <li>I can use different input (event) blocks to begin a sequence.</li> <li>I can move two sprites at the same time, each with their own sequence</li> <li>I can alter a sprite appearance or alter the background through the use of a simple sequence.</li> <li>I can use sprites to tell a story or recount.</li> </ul>	<ul style="list-style-type: none"> <li>I can see differences and similarities between scratch and scratch junior.</li> <li>I can use keys to directly input and control how a sprite will move on screen.</li> <li>I can use variables to alter the speed of a sprite or event on a screen.</li> <li>I can transfer skills from scratch junior to Scratch to alter the background, sprite and create multiple short sequences that use multiple sprites.</li> <li>I can use the repeat block to repeat a sequence.</li> <li>I can alter or resize and draw my own sprites and backgrounds.</li> <li>I can create a simple game in which the sprite uses direct input.</li> </ul>	<ul style="list-style-type: none"> <li>I can create several sequences that interact with each other to make a larger algorithm.</li> <li>I can use sensing blocks to create collision detection within the program.</li> <li>I can insert sprites and backgrounds from other sources.</li> <li>I can animate sprites by repetitive code sequence.</li> <li>I can animate backgrounds to alter when various conditions are met.</li> <li>I can use conditional blocks (if/then/else).</li> <li>I can debug a simple sequence or algorithm by checking each step.</li> <li>I can create increasingly complex games that involve direct input and sensing to play.</li> </ul>	<ul style="list-style-type: none"> <li>I can transfer knowledge from Scratch to Crumble to program and control physical systems.</li> <li>I can plan, sequence and carry out a series of algorithms to create a whole program.</li> <li>I can debug sequences and systems to check and evaluate work.</li> <li>I can use direct world input to alter the actions of a crumble creation.</li> <li>I can design, carry out, debug and evaluate different programs for a variety of purposes on Scratch and Crumble.</li> </ul>
<b>Programs and Hardware</b>	ALEX – iPad software, Beebot – iPad software, Beebots	Beebot – iPad software, Beebots, Scratch Junior - iPads	Scratch Junior - iPads	Scratch	Scratch	Scratch, Crumble



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<b>Programming – key vocabulary</b>	Instructions, buttons, robots, beebot, patterns, program.	Forward, backward, right-angle turn, algorithm, sequence, debug, predict.	Sequence instructions, sequence debugging, test and improve, logo commands, sequence programming.	Type and edit logo commands, sensors, open-ended problems, bugs in programs, complex programming.	Explore procedures, refine procedures, variable, hardware and software control, change inputs, different outputs, articulate solutions, commands.	Predicting outputs, plan, program, test and review a program, program writing, control mimics and devices, sensors, measure input, create variables, link errors.
<b>Digital literacy – including e-safety</b>	<ul style="list-style-type: none"> <li>• I know my information is personal and I choose carefully who I share it with.</li> <li>• I know information should not be shared with strangers.</li> <li>• I know the difference between the online digital world and the real world.</li> <li>• I can name some good and bad things about the online world.</li> <li>• I can talk to a grown up I trust if something makes me feel unsafe.</li> </ul>	<ul style="list-style-type: none"> <li>• I can recognise which personal information should be kept private.</li> <li>• I can manage how I access the online world safely with support.</li> <li>• I can explain what it means to stay safe online.</li> <li>• I can link how I behave every day to how I behave in the online world.</li> <li>• I can begin to send and receive messages.</li> <li>• I can begin to use report functions with support.</li> <li>• I can talk to a grown up I trust if something makes me feel unsafe.</li> </ul>	<ul style="list-style-type: none"> <li>• I can maintain online profiles safely, ensuring personal details are not revealed.</li> <li>• I can play online games safely with others without revealing personal information.</li> <li>• I know what trolls are and that trolling is not acceptable behaviour.</li> <li>• I know that online bullying is exactly the same as bullying in the real world.</li> <li>• I can show respect for content others have created, online, in games and in videos.</li> <li>• I can use email and message programs to receive and send messages safely and respectfully.</li> </ul>	<ul style="list-style-type: none"> <li>• I can maintain online profiles safely, ensuring personal details are not revealed.</li> <li>• I am aware that people may try different methods to get personal information, and should keep this safe at all times.</li> <li>• I can play online games safely with others without revealing personal information.</li> <li>• I know what trolls are and that trolling is not acceptable behaviour.</li> <li>• I can show respect for content others have created, online, in games and in videos.</li> <li>• I can give credit for others work by</li> </ul>	<ul style="list-style-type: none"> <li>• I can amend online profiles as needed to maintain privacy.</li> <li>• I can use security settings of programs to maintain privacy.</li> <li>• I understand that information posted online is controllable by others and may not be able to be removed, affecting my actions in the future.</li> <li>• I play games online in a variety of ways both safely and respectfully.</li> <li>• I can engage in an increasing range of online communities, using security settings and personal privacy to keep myself safe.</li> <li>• I can use more</li> </ul>	<ul style="list-style-type: none"> <li>• I maintain online profiles safely and responsibly, including what information I share, as well as how I treat others.</li> <li>• I am beginning to engage with the wider online community safely.</li> <li>• I can actively use safety and security settings on a range of online platforms and digital devices.</li> <li>• I can pay careful attention on a variety of platforms to what information I may accidentally reveal.</li> <li>• I can check the validity of data and information using trusted sources and critical thinking.</li> <li>• I can show due respect to</li> </ul>



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			<ul style="list-style-type: none"> <li>I know how to report and talk to people I trust when I don't feel safe online.</li> </ul>	<p>acknowledging the source.</p> <ul style="list-style-type: none"> <li>I can identify risks in receiving attachments in messages or following unsolicited web addresses.</li> <li>I can use email and message programs to receive and send messages safely and respectfully.</li> <li>I know how to report and talk to people I trust when I don't feel safe online.</li> </ul>	<p>online methods to find information, but can be more careful about the information I receive.</p> <ul style="list-style-type: none"> <li>I can use critical thinking to validate information and reject 'fake news, scams and clickbait'.</li> <li>I know of several websites and online sources to fact check information.</li> <li>I know how to report and talk to people I trust when I don't feel safe online.</li> </ul>	<p>copyright, and acknowledging sources for information and images used on the internet.</p> <ul style="list-style-type: none"> <li>I know that ALL online activity leaves a digital foot print that cannot be removed, and this may affect how I use the online world and how others view me.</li> <li>I can recognise a range of potential online risks, including inappropriate contact from others and what to do when this happens.</li> </ul>
<b>E-safety – Specific focus</b>	Video games, YouTube, tablet gaming, using social media filters with adults.	Consoles, tablets for gaming, YouTube, using social media filters with adults, websites.	Online gaming, consoles, tablets, YouTube, websites, email.	Online gaming, consoles, tablets, YouTube, websites, email, email attachments.	YouTube, online gaming, social media, consoles, tablets, false news and memes, email attachments.	YouTube, social media, online gaming, social media profiles, emails, texts, VoIP (skype, WhatsApp etc), Twitch, email, false websites, false news, memes.
<b>E-safety – Key vocabulary</b>	Online, private information, public information, email, video games.	Appropriate, inappropriate websites, cyberbullying, digital footprint, keyword searching, online gaming, report abuse button.	E-safety rules, secure passwords, report button, blogs, voice chat, loot box, free to play, pay to win, fake news, virus threats, text messaging.	E-safety rules, secure passwords, report button, blogs, voice chat, loot box, free to play, pay to win, fake news, virus threats, text messaging.	Online responsibility, communication, scam, phishing, informed choices, blogs, vlogs, messaging, social media, direct messaging (DM),	Online responsibility, communication, scam, phishing, informed choices, blogs, vlogs, messaging, social media, direct messaging (DM),



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					instant messaging (IM), meme.	instant messaging (IM), meme.
<b>Information technology</b>	<ul style="list-style-type: none"> <li>I can find content from the world wide web using a web browser.</li> <li>I know that people interact with computers.</li> <li>I can share my use of technology in school.</li> <li>I know common uses of information technology beyond the classroom.</li> <li>I can talk about my work and make changes to improve it.</li> </ul>	<ul style="list-style-type: none"> <li>I know that digital content can be represented in many forms.</li> <li>I know the difference between some of these digital forms and can explain the different ways that they communicate information.</li> <li>I know that computers have no intelligence and that computers can do nothing unless a program is run.</li> <li>I can use software under the control of the teacher to create, store and edit digital content using appropriate file and folder names.</li> </ul>	<ul style="list-style-type: none"> <li>I know different types of data: text, number.</li> <li>I know that a range of digital devices can be considered a computer.</li> <li>I can navigate the web and can carry out simple web searches to collect digital content.</li> <li>I can use technology with increasing independence to purposefully organise digital content.</li> <li>I can show an awareness for the quality of digital content collected.</li> <li>I can talk about my work and make improvements to solutions based on feedback received.</li> </ul>	<ul style="list-style-type: none"> <li>I know that programs can work with different types of data.</li> <li>I know the difference between data and information.</li> <li>I can use filters or can perform single criteria searches for information.</li> <li>I can collect, organise and present data and information in digital content.</li> <li>I can make appropriate improvements to solutions based on feedback received, and can comment on the success the solution.</li> </ul>	<ul style="list-style-type: none"> <li>I know why and when computers are used.</li> <li>I know that data can be structured in tables to make it useful.</li> <li>I can create digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience e.g. blogging.</li> <li>I know how to effectively use search engines, and I know how search results are selected.</li> <li>I can analyse and evaluate data and information, and</li> <li>I know that poor quality data leads to unreliable results, and inaccurate conclusions.</li> <li>I know the audience when I am designing and creating digital content.</li> </ul>	<ul style="list-style-type: none"> <li>I know the main functions of the operating system.</li> <li>I know that computers transfer data in binary.</li> <li>I know that there is a range of operating systems and application software for the same hardware.</li> <li>I know how search engines rank search results.</li> <li>I can evaluate the appropriateness of digital devices, internet services and application software to achieve given goals.</li> <li>I can recognise ethical issues surrounding the application of information technology beyond school.</li> <li>I can design criteria to critically evaluate the quality of solutions.</li> </ul>



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					<ul style="list-style-type: none"> <li>I can use criteria to evaluate the quality of solutions and can identify improvements making some refinements to the solution, and future solutions.</li> </ul>	<ul style="list-style-type: none"> <li>I can use the criteria to identify improvements and can make appropriate refinements to the solution.</li> </ul>
<b>Multimedia – key vocabulary</b>	Videos, camera stills, sounds, image bank, word bank, space bar, purpose, online tools, communicate.	Paint effects, templates, animation, documents, index finger typing, enter, return, caps lock, backspace, information sources, communication, purposes, website content.	Multimedia, presentations, alignment, brush size, repeats, reflections, green screening, amend, copy, paste, school network, devices, computer parts, collaborate, appropriate online communication, search tools, appropriate websites, owner.	Creating and modifying, specific purpose, photo modifying, keyboard shortcuts, bullet points, spell check, constructive feedback, different networks, information collection, reliability, owners.	Online sharing, multimedia effects, multimedia modification, transitions, hyperlinks, editing tools, refining, online sharing, computing devices, internet parts, collaboration, responsibility, searching strategies, webpages.	Appropriate online tools, audience, atmosphere, structure, copyright, information collection, HTML code, storing, information movement, connecting devices, different audiences, research strategies, search result rankings, acknowledge resources.
<b>Data Handling – key vocabulary</b>	Photographs, video, sound, data, pictogram, digitally.	Capturing moments, magnified images, questions, data collection, graphs, charts, save, retrieve.	Questioning, database, construct, contribute, recording data, data logger, present data.	Database creation, database searches, inaccurate data.	Spreadsheets, complex searches (and/or: </>), problem solving, present answers, analyse information, question data, interpret.	Generate, process, interpret, store, present information, plausibility, appropriate data tool, interrogate, investigations.