

## Burstow Primary School Computing: Skills Progression

Skill	1	2	3	4	5	6
E-safety	<p>Safe searching, what to do if we see something we don't like, how to report, why we don't share pictures of ourselves.</p>	<p>Recap safe searching, what to do if we see something we don't like, how to report, why we don't share pictures of ourselves.</p> <p>PEGI ratings and what they mean, why a game might have an 18 cert, why certain games aren't suitable, risks of too much screen time</p> <p>SMART crew – risk of email attachments, giving personal information away online</p>	<p>Recap previous year – computer viruses</p> <p>How the internet works and why you need to log out of a shared server and never share a password</p> <p>How to write a strong password and check its strength</p> <p>Different types of protection (e.g. finger print/eye recognition, patterns, numbers, words) and why</p>	<p>Learning the difference between hacking and remixing, learning how to spot fake websites, learning about fake news, phishing.</p> <p>Learning about ethics of allowing algorithms to make decisions that affect people's lives (e.g. justice system, banking, health system, driverless cars, etc.)</p>	<p>Learning how to stay safe online, how to spot problems, how to avoid them, how to monitor their own safety and screen time etc.</p> <p>Problems e.g: understanding your digital footprint, screen time, so-called 'free' sites, sending/posting pictures online, online bullying, presenting a fake portrait of yourself online, etc</p>	<p>Visit from the Breck Foundation – grooming – signs of grooming, dangers of grooming, how to report</p> <p>How to write a strong password and check it's strength (recap), including phishing attempts</p>

<p>Learning a coding language - Scratch</p>	<p>(Scratch Jnr) Intro to Scratch Jnr: <b>dragging pictorial blocks: Move, jump, bigger/smaller, faster/slower, speech bubbles, edit sprites, edit backgrounds, tap to move to new screen, start on tap, start on flag, start on bump, early introduction to send/receive</b></p>	<p>(Scratch Junior) Next steps in Scratch Jnr: <b>Concurrency, Send/receive multiple messages, go home, repeat forever, go to next page, creating playable multi-level games</b></p> <p>(Scratch) Intro to Scratch - making a rocket go to the moon: <b>Draw a sprite, draw a background, move/glide/turn/go to, adding SFX</b></p>	<p>(Scratch) Making an animation: recap how to <b>draw a sprite, how to draw a background, move/glide/go to blocks, intro to broadcast/receive blocks, adding music loops, SFX speech.</b> <b>EXT: costume change</b></p> <p>Bug fixers: <b>Looking for where the bug is in the code and fixing it, purposefully creating a bug for others to find</b></p>	<p>(Scratch) Making an educational maths game: <b>Use if/else blocks, pick random block plus variables</b> <b>EXT: add a score, a countdown timer, music loops, SFX etc.</b></p> <p>Making a toy prototype: <b>When sprite clicked block, broadcast/receive block, add music loops, add SFX, costume change.</b> <b>EXT: add personalisation using sensing blocks, make lists and use them</b></p> <p>Coding Unplugged – <b>Computational thinking, debugging</b></p>	<p>(Scratch) Making a computer game: <b>Code player movement (keyboard response or mouse pointer response), use sensing blocks between sprites, change costume/background, add music loops/SFX, timers, score</b> <b>EXT: add increasing difficulty levels using broadcast/receive blocks</b></p> <p>Recreate Islamic art: <b>Repeat blocks, turn blocks (experimenting with angle), speed faster/slower</b> <b>EXT: colour change blocks</b></p>	<p>(Scratch) Computational thinkers: <b>Debugging algorithms</b> <i>For 2022/23</i></p> <p>Code breaking – <b>Computational thinking, solving classic codes and cyphers, creating own codes to communicate</b></p>
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Learning a coding language (with physical outcomes) - MS MakeCode					(Micro:bit) <b>Programming a micro:bit to perform a series of physical tasks, e.g. a light display or playing a tune</b>	(Micro:bit) <b>Programming a micro:bit to perform a series of physical tasks of increasing difficulty</b>
Learning a coding language Python						(Python) <b>Use Python to make a text-based choose your own adventure game.</b>
Learning a coding language - HTML  Software: <b>Notepad, Google Chrome, Mozilla X-Ray Glasses, HTML tutorial of choice</b>				Making a website: <b>Examine HTML code using X-Ray Glasses, the code to create their own headlines on Newsround, learn the difference between remixing and hacking (criminal activity). Write basic HTML to create their own simple websites which open in Chrome.</b>		

<p>Learning a coding language - Kodu Game Lab</p>				<p>Creating 3D games:  <b>Using 'when' and 'do' commands to control a character within a 3D world of their own designs.</b></p>		
<p>iPad – using a range of software</p>	<p>Making a TV chef programme –  <b>Recording video in one shot, learning camera techniques</b></p> <p>Making digital music –  <b>Exploring listening skills, rhythm, melody, harmony and composition in Music Lab</b></p>	<p>Making a photo album –  <b>Taking photographs using a range of techniques, using the editing features</b></p> <p>Scratch Junior –  <b>Making playable games in Scratch Junior using advanced coding skills</b></p>	<p>Making stop-motion animations –  <b>Use specific software (iMotion) to film and edit to create a stop motion animation</b></p>		<p>Making compositions on Garageband –  <b>Live loops/ arrangement/ recording/ sections/ instruments etc.</b></p>	<p>Making a collaborative yearbook –  <b>Book Creator – creating a page of personal content to contribute to a class yearbook</b></p> <p>Making a TV advert:  <b>Recording video techniques, editing using iMovie</b></p>

<p>Laptops – Power point</p>	<p>Making a PP – <b>Opening PP, creating a new PP, choosing a design, typing, recording embedded audio</b></p> <p><b>Right-click on image (in Google), copy, right click on PP page, paste, use mouse to alter size/position, make a series of PP pages</b></p>	<p>Researching a topic and making a PP - <b>to recap how to open Google Chrome, select Image, select Safe Search, to copy and paste, to move and manipulate images in PP, to arrange PP pages in a certain order. To learn how to find child-friendly research, to learn how to arrange their PP, to learn how to present their work (design, transitions, animations etc)</b></p>				<p>Making a collaborative yearbook – <b>creating a page of personal content to contribute to a class yearbook</b></p>
<p>Laptops – Excel</p>			<p>Collecting data and presenting results – <b>Using Excel to collect and present data</b></p>			

Laptops – paint	Making digital art/mouse skills - <b>open Paint from the program search bar, use the paint tools to create recognisable pictures, to gain experience with using a mouse</b>					
Laptops – Picasa/MS Photos		Taking and editing digital photos - <b>Learn what a 'theme' is, to learn more sophisticated photography skills, to learn how to crop, add filters, add special effects and import their work.</b>				

Laptops – Movie Maker (to be replaced with MS Photos or iMovie)			Making a sports video – <b>edit to include: an establishing shot, audio commentary, added music and a series of FX (e.g. slo mo)</b>			
Laptops – Outlook		Solving a mystery using email - <b>Learn how to open Outlook online, to login to their own email addresses, to open, read and reply to an email, to use correct email etiquette, to create, write and send their own emails and add an attachment.</b>				

<p>Understanding networks (how the school network works, how the internet works)</p>			<p>Understanding networks – <b>Children learn the difference between the internet and the WWW. They learn that the internet is a physical connection using wires and cables that can be broken by physical problems and fixed by engineers. They learn how a website arrives on their computer screen and where it comes from. They learn how a search engine works. They draw diagrams, watch videos and play physical games to achieve this.</b></p>	<p>Understanding the internet and WWW <b>- recap</b></p>		
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<p>Making digital music Software: <b>Isle of Tune (free online website), Audacity, LMMS, Garageband, Chrome Music Lab</b></p>	<p>Making digital compositions – <b>Using Google Chrome Music lab to make musical compositions</b></p>			<p>Making digital music – <b>to learn how to record different sounds on to different tracks on Audacity, how to match loops and compose on electronic instruments using LMMS, how to use repeated loops to make a tune on Isle of Tune.</b></p>	<p>Making compositions on garage band – <b>Live loops/ arrangement/ recording/ sections/ instruments etc.</b></p>	
<p>Making digital art Software: <b>Scratch, Inkscape, Terragen, Paint, Brushes Redux, Google Drawings, iMotion (or similar app)</b></p>	<p>Making digital art/mouse skills – <b>open Paint from the program search bar, use the paint tools to create recognisable pictures, to use a mouse, to recreate famous artists' styles</b></p>	<p>Making digital art/mouse skills – <b>- Using Google drawings as intro to vector drawing</b></p>		<p>Making stop-motion animations – <b>Use specific software (iMotion) to film and edit to create a stop motion animation</b></p>	<p>Recreating famous art – <b>Children use various programs to recreate different artists' styles – Scratch to recreate Islamic art, Inkscape to recreate geometric patterns and Terragen to create CGI landscapes (e.g. for a film background) Snipping tool for presentation of art.</b></p>	

<p>Making digital places Software: <b>Kodu</b> <b>SketchUp</b> <b>schools</b></p>				<p>Coding in a 3D world – <b>to use coding skills to make 3D games in Kodu</b></p>	<p>Making 3D worlds and buildings – <b>to learn how to manipulate the Sketch Up software, to use their knowledge to create their own 3D architecture.</b></p>	
<p>Using online tools Software: <b>Google my maps</b> <b>Google forms</b> <b>Google drawing</b> <b>Chrome music lab</b> <b>Google Sites</b></p>	<p>Digital music - <b>Using Chrome music lab to make musical sequences</b></p>	<p>Digital art - <b>Using Google drawings as intro to vector drawing</b></p>	<p>Collecting data and presenting results – <b>Using Forms to create a survey</b></p>		<p>E-safety web designers – <b>Using Google Sites to create an e-safety webpage</b></p>	<p>Travel writers – <b>Using My Maps to create an interactive travel diary/suggested route with photos and notes</b></p>
<p>OTHER: <b>Word</b> <b>PP</b> <b>Excel</b> <b>Adobe Spark</b> <b>VR headsets</b> <b>Sumdog</b> <b>TTR</b> <b>Reading Eggs</b> <b>Other</b></p>	<p><b>Cross-curricular use of IT:</b></p> <ul style="list-style-type: none"> <li>- Word (word processing etc.)</li> <li>- PP (topic presentation etc.)</li> <li>- Excel (maths etc.)</li> <li>- Adobe Spark (video making in music, RE, topic etc.)</li> <li>- VR headsets (topic etc.)</li> <li>- Sumdog/TTR/Reading Eggs (general student use)</li> </ul>					