



## Year 5 Curriculum

<b>Unit name</b>	<b>National Curriculum Content</b>	<b>Skill Progression</b>
Programming in Scratch	<i>Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</i>	<ol style="list-style-type: none"> <li>1. Program inputs for control, selection (conditions) and sensing for interaction and data variables for scoring and a game timer.</li> <li>2. Program distance sensing and movement.</li> <li>3. Program Inputs, outputs, loops, conditions, sensing and variables.</li> <li>4. Program list variables that chooses randomly.</li> </ol>
App Design	<i>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</i>	<ol style="list-style-type: none"> <li>1. Adjust slide size to mimic a phone/tablet size.</li> <li>2. Add text and images to a slide.</li> <li>3. Add icons and text to use as navigation.</li> <li>4. Duplicate slides to create multiple pages of the app.</li> <li>5. Create hyperlinks to create navigation.</li> </ol>
Text-based Programming	<i>Use sequence and repetition in programs; work with variables. Correct errors.</i>	<ol style="list-style-type: none"> <li>1. Change the variables of text-based commands.</li> <li>2. Write text-based commands accurately and use fill effects, stamps and functions.</li> <li>3. Write text-based commands to program digital art.</li> <li>4. Write text commands/functions to program keyboard inputs in a game. (Not compatible with iPad/tablet unless using physical keyboard)</li> <li>5. Programming a Logo turtle to move and use pen.</li> <li>6. Use co-ordinates in with a Logo turtle.</li> <li>7. Print labels in Logo.</li> <li>8. Program a loop (repetition) and shapes in Logo Turtle.</li> <li>9. Program colours in Logo turtle.</li> <li>10. Program variables in Logo turtle</li> </ol>
Data Handling	<i>Select, use and combine a variety of software (including internet services). Collecting, analysing, evaluating and presenting data and information.</i>	<ol style="list-style-type: none"> <li>1. Select and use non-adjacent cells plus resize multiple cell widths and copy/paste cells.</li> <li>2. Use formulae to find totals, averages and maximum/minimum numbers.</li> <li>3. Find data and create a spreadsheet to suit it.</li> <li>4. Search a database for specific information.</li> </ol>
Computer networks and the internet	<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>	<ol style="list-style-type: none"> <li>1. Understand Computer Networks, Internet and Cloud Computing and how they help us.</li> <li>2. What is email and how can we use it safely?</li> <li>3. Understand how and why we collaborate online (including blogging).</li> </ol>
Programming with Sphero	<i>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</i>	<ol style="list-style-type: none"> <li>1. Understanding Bluetooth Technology as Input Device</li> <li>2. Write programs for the Sphero using movement and repetition (loops).</li> <li>3. Write a program to trace a maze/route with Sphero and De-bug.</li> <li>4. Write a program with outputs.</li> <li>5. Write a program with random variables</li> </ol>

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E-Book Creation	<i>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</i>	<ol style="list-style-type: none"> <li>1. Add page colour and style.</li> <li>2. Add, position and format text on different pages.</li> <li>3. Add and position images.</li> <li>4. Add audio, including hiding it behind an object.</li> <li>5. Add hyperlinks to text and images.</li> <li>6. Search for shapes.</li> <li>7. Lock and arrange shapes (extension task).</li> </ol>
Music Creation	<i>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</i>	<ol style="list-style-type: none"> <li>1. Layer tracks using sounds and effects.</li> <li>2. Use various online samplers and sequencers to create drums patterns and scales.</li> <li>3. Create effective instrument tracks.</li> <li>4. Edit tracks and effectively adjust volume and add effects.</li> </ol>
Operating systems	<i>Select, use and combine a variety of software on a range of digital devices to create content that accomplish given goals.</i>	<ol style="list-style-type: none"> <li>1. Understand the importance of an operating system and its key features.</li> <li>2. Demonstrate important operating system skills (organising files etc), if possible, across multiple operating systems.</li> </ol>
E-Safety	<i>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</i>	<ol style="list-style-type: none"> <li>1. Keep personal information private.</li> <li>2. Respect and protect against online bullies.</li> <li>3. Understand the consequences of sharing photo/videos online.</li> <li>4. Understand the term digital footprint.</li> <li>5. How can we check online content is trustworthy.</li> <li>6. How and where and who can we report concerns we have to.</li> <li>7. Understand the pitfalls of in-app purchases.</li> </ol>

## Year 6 Curriculum

<b>Unit name</b>	<b>National curriculum content</b>	<b>Skill Progression</b>
Programming in Scratch	<i>Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</i>	<ol style="list-style-type: none"> <li>1. Program keyboard/touch screen inputs, selection (conditions), loops and random variables for unpredictability (operators).</li> <li>2. Program inputs, selection, sensing, random variables, operators for direction and data variables for scoring.</li> <li>3. Use inputs, selection, loops, sensing, costume changes and broadcasts.</li> <li>4. Work with multiple sprites to send broadcast messages between them.</li> </ol>
Graphic Design	<i>Design and create digital content to accomplish goals</i>	<ol style="list-style-type: none"> <li>1. Add, adjust and fill shapes.</li> <li>2. Group shapes to improve accuracy and speed.</li> <li>3. Add and customise gradient effects.</li> <li>4. Adjust transparency/opacity for a purpose.</li> <li>5. Use a colour picker correctly.</li> <li>6. Accurately rotate shapes</li> </ol>
Computers past, present and future	<i>Design and create digital content to accomplish goals. Use search technologies effectively and be discerning in evaluating digital content.</i>	<ol style="list-style-type: none"> <li>1. Show awareness of how computers and digital technology helps us today.</li> <li>2. Understand how technology has changed over time and represent it as an interactive timeline.</li> <li>3. Understand the impact (positive/negative) technological changes have on society.</li> <li>4. Predict how technology will change in the future</li> </ol>
Binary Code	<i>Understand how instructions are stored and executed within a computer system; understand how</i>	<ol style="list-style-type: none"> <li>1. Understand why computers/electronics use binary.</li> <li>2. Match a sequence of binary code to create digital art.</li> </ol>

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	<i>data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits.</i>	3. To convert binary code to denary numbers (decimal numbers) and visa versa.
Python Programming language	<i>Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Use a textual programming language to solve a variety of computational problems.</i>	<ol style="list-style-type: none"> <li>1. Use the PRINT command for text.</li> <li>2. Program a simple calculator in Python.</li> <li>3. Program loops to repeat text.</li> <li>4. Program interactive inputs.</li> <li>5. Find errors in a program (debugging)</li> <li>6. Program a trivia chatbot using 'send message' functions (challenge)</li> </ol>
Image Editing	<i>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</i>	<ol style="list-style-type: none"> <li>1. Adjust the colours, brightness and contrast to improve a photo.</li> <li>2. Create a before and after slide in presentation software.</li> <li>3. Take and crop a screenshot.</li> <li>4. Add drawing and text layers.</li> <li>5. Import new images as layers and resize them to fit.</li> <li>6. Add colour elements to a black and white image using layers and eraser tools.</li> </ol>
HTML	<i>Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, presenting data and information. Use a textual programming language to solve a variety of computational problems.</i>	<ol style="list-style-type: none"> <li>1. Add and align text and change colour.</li> <li>2. Program background colour.</li> <li>3. Add and align images.</li> <li>4. Add hyperlinks to other websites.</li> <li>5. Add an iframe (such as a Google Map) and adjust the height and width.</li> </ol>
Web Design	<i>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</i>	<ol style="list-style-type: none"> <li>1. Create a static homepage.</li> <li>2. Choose a suitable theme for your website.</li> <li>3. Change the site identity to a suitable title, tagline and website icon.</li> <li>4. Upload a suitable header and/or background image.</li> <li>5. Adjust the website sidebar and add suitable widgets.</li> <li>6. Add text and images to a page and edit them.</li> <li>7. Add multiple pages and edit the navigation, including sub-menus.</li> <li>8. Provide constructive feedback for your classmates' websites.</li> </ol>
Machine Learning and AI	<b>No current content</b>	<ol style="list-style-type: none"> <li>1. Understand how computers use information to learn by solving new problems and following new instructions.</li> <li>2. Understand and use examples of machine learning.</li> </ol>

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		<p>3. Understand how artificial intelligence is used to perform tasks often only performed by humans.</p> <p>4. Discuss and show awareness of potential dangers of AI.</p>
Data Detectives	<p><i>Select, use and combine a variety of software (including internet services). Collecting, analysing, evaluating and presenting data and information.</i></p>	<p>1. Use comprehension skills to find clues that match the column headings of a spreadsheet.</p> <p>2. Use spreadsheet tools (filters and conditional formatting) to find the specific data to match the clues.</p>
E-Safety	<p><i>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</i></p>	<p>1. Keep personal information private.</p> <p>2. Respect and protect against online bullies.</p> <p>3. Understand the consequences of sharing photo/videos online.</p> <p>4. Understand the term digital footprint.</p> <p>5. How can we check online content is trustworthy.</p> <p>6. How, where and who can we report concerns we have to.</p> <p>7. Use suitable usernames and passwords for online accounts.</p> <p>8. Understand the pitfalls of in-app purchases.</p> <p>9. Understand how and why companies/people track our online behaviour and how we can prevent it.</p>