# Computing Progression

## E-Safety

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **NC Objectives** | Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. | | Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | | | |
| **Knowledge** | Begin to understand how to stay SMART (safe, meet, accept, reliable, tell) online.<br><br>Understand how to search for safe images.<br><br>Identify some personal information and begin to understand how it can affect safety online.<br><br>Understand that there are digital ways to communicate, e.g. email.<br><br>Tell a trusted adult if they see something inappropriate online. | Understand how to stay SMART online.<br><br>Understand whether a webpage is suitable for children or not.<br><br>Understand what a digital footprint is.<br><br>Identify some forms of digital communication, e.g. email.<br><br>Identify kind and unkind behaviour online. | Understand how websites use adverts to promote products.<br><br>Begin to understand the importance of privacy settings.<br><br>Identify other platforms for digital communication, e.g. online gaming/apps.<br><br>Understand my digital footprint and how it can affect safety online.<br><br>Understand what cyberbullying is and some ways to address it. | Understand how cyberbullying can affect someone.<br><br>Understand how to respond to unkind messages.<br><br>Understand the term plagiarism and how to avoid it. | Identify spam emails and what to do with them.<br><br>Recognise when, why and how photographs we see online may have been edited.<br><br>Understand the consequences of my actions online. | Understand the positives and drawbacks of current technology, including social media.<br><br>Understand how the media influences ideas and opinions.<br><br>Identify a range of ways to report concerns.<br><br>Understand how to keep their private information secure online.<br><br>Compare cyberbullying to in-person bullying and identify effective strategies to deal with it. |
| **Skills** | Save, name and date digital work they create. | | Safely send and receive emails. | Create a safe online profile with a strong password. | Write citations for the websites I use for research. | |
| **Vocabulary** | Safe, meet, accept, reliable, tell, personal information, online, safety, digital, communicate, save, date, email. | Safe, meet, accept, reliable, tell, digital footprint, webpage. | Digital platforms, cyberbullying, privacy, advertisement. | Plagiarism, password, secure, profile. | Citation, spam, edited. | Social media. |

**Technology, Software and Programs**

**EYFS**

Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.

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| **NC Objectives** | Use technology purposefully to create, organise, store, manipulate and retrieve digital content.<br>Recognise common uses of information technology beyond school. | | Understand computer networks including the internet; how they can provide multiple services, such as the WWW; and the opportunities they offer for communication and collaboration.<br>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.<br>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, including collecting, analysing, evaluating and presenting data and information. | | | |
| **Knowledge** | Identify and discuss forms of information technology in the home and school.<br><br>Begin to understand the purpose of a search engine.<br><br>Understand that information is presented in many ways (e.g. text, images and videos). | Identify and discuss forms of information technology in the wider world.<br><br>Understand the purpose of a search engine.<br><br>Understand the need for safety filters.<br><br>3<br>Describe some likes and dislikes about a webpage. | Name a range of programs and some of their basic features.<br><br>Begin to understand that not all information online is reliable.<br><br>Begin to decide whether a website is useful and appropriate. | Suggest a program that could be used based on its features.<br><br>Understand that not all information online is reliable and how it is inputted (Wikipedia).<br><br>Decide whether a website is useful and appropriate. | Justify why they have chosen to use a specific program.<br><br>Identify who a webpage may be aimed at and explain why. | Understand the purpose, strengths and drawbacks of different programs.<br><br>Understand how results are selected and ranked, including wording used for initial search. |
| **Skills- Internet** | Open the internet browser.<br><br>Use a given webpage to find some facts or an image to answer a specific question. | Use a safe search engine to find facts and images to answer a specific question, e.g. how high is the Eiffel Tower?<br><br>Identify key words in a question to use in a search engine. | Use a safe search engine to find facts and images about a specific topic, e.g. the Eiffel Tower.<br><br>Identify some key facts from a chunk of text or a video. | Use a safe search engine to find facts about a topic, e.g. Paris.<br><br>Identify relevant key facts from a chunk of text or a video. | Use a safe search engine to find facts about a wider topic, e.g. capital cities.<br><br>Navigate their way around a webpage to find relevant information, including using hyperlinks. | Select relevant information from a webpage.<br><br>Compare information from two different sources. |

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| **Skills-Microsoft Office** | Switch on a computer and log on and off (with adult support).<br><br>Open a program or previously saved work (with adult support) and close a program. (MS Word)<br><br>Save a document with an appropriate name (with support). (MS Word)<br><br>Print a document (with support). (MS Word)<br><br>Type and draw shapes in a document. (MS Word)<br><br>Use the computer mouse or trackpad to move, click and drag objects.<br><br>Change font, colour or size of text. (MS Word)<br><br>Insert, resize and rotate an image. (MS Word) | Log on and off safely.<br><br>Open and close a program. Save a document with an appropriate name. (MS PowerPoint, MS Word, MS Excel)<br><br>Print a document. (MS PowerPoint, MS Word, MS Excel)<br><br>Use shift/caps lock to write upper- and lower-case letters when typing. (MS PowerPoint, MS Word)<br><br>Align text/titles using the align text tool.<br><br>Insert images using Online Pictures. (MS PowerPoint, MS Word)<br><br>Insert shapes and begin to edit them, e.g. changing fill colour, size and outlines. (MS PowerPoint, MS Word)<br><br>Use bold, italics and underline features. (MS PowerPoint, MS Word) | Save documents in a specific location.<br><br>Begin to type using both hands and use punctuation marks, including using shift. (MS PowerPoint, MS Work)<br><br>Change the design and layout of a document, e.g. background, borders, orientation, columns, margins (MS PowerPoint, MS Work)<br><br>Insert bullet points or a numbered list. (MS PowerPoint, MS Work)<br><br>Use a range of slides (MS PowerPoint)<br><br>Input data into a spreadsheet to create a database. (MS Excel)<br><br>Find and highlight specific cells, rows and columns. (MS Excel)<br><br>Use text boxes | Create a folder to save a document into.<br><br>Begin to use simple shortcuts, e.g. ctrl and c to copy.<br><br>Insert a hyperlink to a webpage (MS PowerPoint, MS Word)<br><br>Insert a table and use editing tools to remove borders (MS PowerPoint, MS Word)<br><br>Understand why the red and blue error lines occur and use right click to correct mistake (MS PowerPoint, MS Word)<br><br>Insert a range of transitions and animations. (MS PowerPoint)<br><br>Apply and use filters to order and sort data. (MS Excel)<br><br>Format spreadsheet/tables or shade rows, columns and individual cells (MS Excel) | Use a wider range shortcut.<br><br>Use headers and footers, and add automatic page numbers and dates (MS Word)<br><br>Use anchors to allow text to flow across multiple text boxes e.g. News paper writing (MS Word)<br><br>Change text wrapping in images, allowing text to move closely around the objects automatically (MS Word)<br><br>Use a range of tools to edit a table, e.g. merge cells, insert row, align text, shading (MS Excel, Word, PowerPoint)<br><br>Use appropriate transition or animation for effect (PowerPoint)<br><br>Use a wider range of formulas to find specific information (MS Excel) | Type proficiently.<br><br>Insert objects and use a range of tools and features.<br><br>Choose an appropriate layout, e.g. margins, tables, orientation, columns.<br><br>Choose an appropriate design depending on the formality of the document, e.g. font, size, colour, borders.<br><br>Review and edit documents using a range of tools.<br><br>Create and present an effective presentation using a range of features.<br><br>Sort, filter and use other formulas to find specific information more efficiently. |

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| | | Create a short presentation by inserting and editing slides. (MS PowerPoint)<br><br>Use copy and paste. | | | Create graphs from data (MS Excel) | Create a wider range of graphs and add a title and axis labels. |
| **Vocabulary** | Browser, log on, log off, open, save, print, type, draw, icon, resize, rotate, insert, font, drag, click, mouse, trackpad, left click, right click. | Search engine, filters, uppercase, lowercase, document, text box, copy, paste, shape, edit, outline, fill, bold, italics, underline, presentation, slide, hyperlink. | Source, folder, drive, A4/A3, shift, background, border, orientation, columns, margin, bullet points, spreadsheet, data, database, cell, row, column, reliable. | Shortcut, hyperlink, table, tab, control, header, footer, spell check, grammar, sort, filter, transition, animation, validity. | Replace, merge, split, align, centre, shading, formula, graph, wrapping, Transitions and animation | Software, review, axis, chart, title, align, justify. |

**Algorithms**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **NC Objectives** | Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. | | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.<br>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.<br>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. | | | |
| **Knowledge** | Understand that an algorithm is a set of instructions given to a computer in order. | Understand why it is important to be precise when writing an algorithm. | | | | |
| **Skills** | Children follow a set of commands (stand, sit, spin and jump) ranging from single commands to an algorithm (string of code)<br><br>**Bee-Bot**<br>Carry out a sequence using single command, one at at time e.g. forwards, backwards and turn.<br><br>Programme the Bee-Bot to get from one point to another along a specific route.<br><br>Make sensible predictions about where a Bee-Bot may stop from a simple set of instructions. | **Bee-Bot**<br>Carry out a sequence with multiple commands to go along a specific route.<br><br>Make sensible predictions about where a Bee-Bot may stop from a set of instructions.<br><br>Debug an algorithm e.g. robot turns in the wrong direction or rolls too far.<br><br>**Scratch Junior**<br>Choose a new sprite or background.<br><br>Carry out a sequence with multiple commands, including increasing or decreasing size of sprite.<br><br>Use other simple commands, left, right, up, down, repeat and sounds.<br><br>Debug a set of instructions when necessary. | **Scratch**<br>Create sprites and backdrops<br><br>Carry out a sequence with multiple commands, including glide and turning.<br><br>Use other code to change costume<br><br>Detect and correct errors in a pre-made set of code (debug) | **Scratch**<br>Start commands in different ways e.g. flag, messages, key press and button<br><br>Animate a sprite by using change costume and repeat functions.<br><br>Use conditional statements within the program to control the sprite (e.g. if… then...)<br><br>Detect and correct errors in algorithms as necessary. | **Scratch**<br>Create and edit variables.<br><br>Use a wider range of conditional statements to control the sprite.<br><br>Design a simple game including sprites, backgrounds, scoring and/or timers.<br><br>Detect and correct errors in algorithms as necessary.<br><br>Annotate code used | **Scratch**<br>Design a game using conditional statements, loops (repeat), variables and broadcast messages.<br><br>Evaluate the effectiveness of the game and debug as required.<br><br>Annotate any code used in detail |

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| **Vocabulary** | Algorithm, sequence, string, single command, forwards, backwards, turn, left, right, route, Bee-Bot, instructions, predictions. | Multiple commands, clockwise, anticlockwise, increase, decrease, sprite, background, debug, repeat. | Degrees, sprite, motion, code, detect, correct, errors, percentages | Conditional statements, repeat, costume. | Scoring, timers. | Broadcast messages, loops, effectiveness. |

**Multimedia**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|
| **NC Objectives** | Use technology purposefully to create, organise, store, manipulate and retrieve digital content.<br>Recognise common uses of information technology beyond school. | | 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, including collecting, analysing, evaluating and presenting data and information. | | | |
| **Knowledge** | Use ICT to generate ideas for their work.<br><br>Use various tools such as brushes, pens, rubber, stamps and shapes (smart notebook is very good for this)<br><br>Capture simple pictures and videos on a camera and share their work.<br><br>Use software to record different sound. | **Photography**<br><br>Capture still images using a range of simple angles and distances.<br><br>Use effects, crop and colour tools to manipulate images<br><br>Use sensors to capture data from different source input devices/sensors | **Photography**<br><br>Capture still images using a wide range of angles and distances.<br><br>Use angles and distance to create digital effects<br><br>Input still images into iMovie/movie maker and add shot name as title | **iMovie/Movie Maker**<br><br>Story board and film a short movie.<br><br>Edit Trim and arrange clips to convey meaning.<br><br>Add titles, credits, slide transitions and special effects. | **Animation**<br>Plan what they would like to happen in their animation.<br><br>Take a series of pictures to form an animation or design the backgrounds and characters if using scratch to animate<br><br>Move items within their animation to create movement on playback.<br><br>Edit and improve their animation. | **Animation**<br>Plan a multi-scene animation including characters, scenes and special effects.<br><br>Adjust the number of photographs taken and the playback rate to improve the quality of the animation<br><br>Publish their animation and use a movie editing package to edit/refine and add titles. |
| **Vocabulary** | Tools, brush, pen, rubber, stamp, shape, software, photograph, capture, video, record, sound. | Save, retrieve, edit, purpose, delete. | Arrange, film, title, credits, discard, audience, clip. | Trim, slide transitions, special effects. | Animation, series of pictures, playback, scenes. | Multi-scene, camera angles, special effects, playback rate, quality, publish, refine. |