



# Pyrford C of E School Computing Progression Map

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>E-safety</b>	Introduction to internet safety focusing on asking a trusted adult for help with any issues	Smartie the Penguin - Childnet <ul style="list-style-type: none"> <li>Know to seek adult help to deal with online issues (unexpected pop ups, to find a website, deal with a message)</li> <li>Understand the principle that you must be kind online</li> </ul>	Jessie and Friends – Think U Know <ul style="list-style-type: none"> <li>Seek help from a trusted adult when they feel worried, scared or sad due to material online</li> <li>Understand that help is needed from a trusted adult to search for content online</li> <li>Introduction to issues related to sharing photos</li> </ul>	Online Safety – Twinkl and CEOP <ul style="list-style-type: none"> <li>Seek help from a trusted adult when they encounter worrying or upsetting material and other issues</li> <li>Understand that information online leaves a ‘digital footprint’</li> <li>Understand what personal information is and that it must be kept private</li> <li>Introduction to effective and appropriate online searching</li> <li>Start to be able to identify kind and unkind behaviour online</li> <li>Know that people met online are strangers</li> </ul>	SMART Crew E-safety – Childnet International <ul style="list-style-type: none"> <li>Seek help from a trusted adult when they encounter worrying or upsetting material and other issues</li> <li>Be careful when accepting messages and attachments</li> <li>Be discerning about digital content</li> <li>Keep personal information safe</li> <li>Take great care and adult support when meeting up with someone met online</li> </ul>	Band Runner – Think U Know <ul style="list-style-type: none"> <li>Identifying unacceptable online behaviour</li> <li>Understand that unwanted correspondence can be blocked and reported</li> <li>Understand how to respond to unacceptable behaviour including telling a trusted adult</li> <li>Sharing videos, images and comments safely and kindly online</li> </ul>	Trust me – Childnet International, Be Smart with Your Smartphone – Phone Paid Services Authority <ul style="list-style-type: none"> <li>Understand that not all content online is trustworthy</li> <li>Strategies for being discerning about digital content</li> <li>Understand safety issues related to contact from other people online</li> <li>Understand that it is possible to spend real money through a smartphone and situations in which this will arise</li> <li>Understand what to do in these situations and where to get help</li> </ul>	Online Safety – Out of Your Hands <ul style="list-style-type: none"> <li>Using social media safely and understand the issues with putting personal information in the public domain</li> <li>Explore what a digital footprint is, the platforms that can create and retain a digital footprint and how to keep a digital footprint safe</li> <li>Understand safety and privacy issues around mobile phones</li> <li>Understand what cyberbullying is and how to counter it</li> <li>Understand the term ‘plagiarism’ and how write citations</li> <li>Understand how to be a good digital citizen</li> </ul>
<b>Coding</b>	Introduction to: <ul style="list-style-type: none"> <li>Sequencing e.g. 2 step verbal instructions, visual timetable, stories</li> <li>Repetition e.g. simple patterns</li> </ul>	Early coding concepts: <ul style="list-style-type: none"> <li>Understand simple, sequenced processes in a range of contexts</li> <li>Group and sort objects</li> <li>Recognise and create patterns</li> <li>Sequence stories</li> <li>Follow simple instructions for various outcomes including programmable toys, making models and familiar activities</li> </ul>	Early programming concepts – from Teach Computing <ul style="list-style-type: none"> <li>Introduction to early programming concepts</li> <li>Explore using individual commands</li> <li>Identify what each command does, and use that knowledge to start predicting the outcome of programs</li> <li>Predict the impact of and create simple sets of instructions in a range of contexts (e.g. Beebots, J2Code)</li> </ul>	Crazy characters and Beebots programming – Barefoot Computing & Teach Computing <ul style="list-style-type: none"> <li>Develop understanding of instructions in sequences and the use of logical reasoning to predict outcomes</li> <li>Use given commands in different orders to investigate how the order affects the outcome</li> <li>Learn about design in programming</li> <li>Develop artwork and test it for use in a program</li> <li>Design algorithms in a range of contexts (create a crazy character, control a robot teacher and floor robot) and then test those algorithms and debug them</li> </ul>	Sequencing in programming in Scratch (sounds) – Teach Computing <ul style="list-style-type: none"> <li>Introduction to the Scratch programming environment</li> <li>Introduction to a selection of motion, sound and event blocks</li> <li>Explore and create sequences of commands</li> <li>Create a project to make a representation of a piano</li> </ul>	Programming repetition in Logo & Scratch-Teach Computing <ul style="list-style-type: none"> <li>Introduction to the Logo programming environment</li> <li>Predict outcomes, modify, create, test and debug algorithms to draw shapes</li> <li>Use repeat/loops including count controlled loops and infinite loops</li> <li>Develop design that includes 2 or more loops that run at the same time</li> </ul>	Sequence, selection and repetition in physical computing using Crumble – Teach Computing <ul style="list-style-type: none"> <li>Introduction to physical programming through the use of the Crumble programming environment</li> <li>Introduction to a microcontroller (Crumble controller)</li> <li>Learn how to connect and program it to control components (including output devices — LEDs and motors)</li> <li>Introduction to conditions as a means of controlling the flow of actions in a program</li> <li>Use of knowledge of repetition and conditions when introduced to the concept of selection (through the ‘if...then...’ structure) and write algorithms and programs that utilise this concept</li> <li>Design, programme and make a working robot</li> </ul>	Coding games using sequence, selection, repetition and variables in Scratch – runderwalk coding online lessons <ul style="list-style-type: none"> <li>Decomposition of a task – creating a maze game</li> <li>Creating and animating sprites and background</li> <li>Using selection for sprite motion and keyboard input</li> <li>Introduction to variables</li> <li>Use of sequence, selection and repetition to code various features of the game</li> <li>Debugging and logical reasoning</li> </ul>
			An introduction to on-screen programming using Scratch Jr – Teach Computing <ul style="list-style-type: none"> <li>Explore the way a project looks by investigating sprites and backgrounds</li> <li>Use programming blocks to use, modify and create programs</li> <li>Introduction to the early stages of program design through the introduction of algorithms</li> </ul>	An introduction to sequence and selection using Scratch Jr – Teach Computing <ul style="list-style-type: none"> <li>Understand that sequences of commands have an outcome</li> <li>Make predictions for sequences of commands</li> <li>Use and modify designs, and then create their own quiz questions in ScratchJr</li> <li>Evaluate their work and make improvements to their programming projects</li> </ul>	Sequencing in programming in Scratch (events and actions) – Teach Computing <ul style="list-style-type: none"> <li>Consolidate prior learning relating to sequencing</li> <li>Move a sprite in four directions (up, down, left, and right)</li> <li>Explore movement within the context of a maze</li> <li>Introduction to use of pen and modifications to line size and colour</li> <li>Create a maze-tracing program</li> <li>Design and code their own maze-tracing program</li> </ul>	Selection in quizzes – Teach computing <ul style="list-style-type: none"> <li>Introduction to selection by understanding how conditions can be used in programming</li> <li>Use “if...then....else” structure</li> <li>Represent understanding as algorithms and then code in Scratch</li> <li>Design a quiz using selection to control outcomes based on answers given</li> </ul>		
<b>Technology in our lives</b>	Technology around us - <ul style="list-style-type: none"> <li>Be familiar with a range of digital devices in school setting</li> <li>Play with toys that have</li> </ul>	Technology around us - <ul style="list-style-type: none"> <li>Recognise that a range of technology is used in places such as homes and schools</li> <li>Know that information can be retrieved from</li> </ul>	Technology around us - Teach Computing <ul style="list-style-type: none"> <li>Introduction to technology</li> <li>Introduction to parts of a computer</li> <li>Introduction to using a mouse and keyboard</li> </ul>	IT around us – Teach Computing <ul style="list-style-type: none"> <li>Recognise the uses and features of IT</li> <li>Identify IT within and beyond school</li> <li>Identify how IT helps us</li> <li>Know how to use IT safely</li> <li>Recognise that choices are made when using IT</li> </ul>	Computing systems and networks – Teach Computing <ul style="list-style-type: none"> <li>Develop their understanding of digital devices, with an initial focus on inputs, processes and outputs</li> <li>Compare digital and non-digital devices</li> <li>Introduction to computer networks, including devices that</li> </ul>	The internet – Teach Computing <ul style="list-style-type: none"> <li>Apply knowledge of networks to appreciate the internet as a network of networks which need to be kept secure</li> <li>Learn that the World Wide Web is part of the internet, and explore the World Wide Web in order to learn about who owns content and what</li> </ul>	Computing systems and networks – sharing information – Teach Computing <ul style="list-style-type: none"> <li>Develop understanding of computer systems and how information is transferred between systems and devices</li> <li>Consider small-scale and large-scale systems</li> <li>Explain the input, output and</li> </ul>	Computing systems and networks – collaboration and communication – Teach Computing <ul style="list-style-type: none"> <li>Explore how data is transferred over the internet</li> <li>Introduction to addressing, the makeup and structure of data packets</li> <li>Explore how the internet</li> </ul>

	inputs and outputs	computers and that they have a range of functions			make up a network's infrastructure, such as wireless access points and switches <ul style="list-style-type: none"> <li>Learn about the benefits of connecting devices in a network</li> </ul>	can be accessed, added and created <ul style="list-style-type: none"> <li>Evaluate online content to decide how honest, accurate or reliable it is, and understand the consequences of false information</li> </ul>	process aspects of a variety of different real-world systems <ul style="list-style-type: none"> <li>Discover how information is found on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines</li> </ul>	facilitates online communication and collaboration by completing shared projects online and evaluate different methods of communication <ul style="list-style-type: none"> <li>How to communicate responsibly by considering what should and should not be shared on the internet</li> </ul>
<b>Information Technology</b>	Operation of simple equipment including IWB, remote control toys and torches	<ul style="list-style-type: none"> <li>Operation of simple equipment</li> <li>Shows an interest and develop skills in operating technological toys</li> <li>Uses ICT hardware to interact with age-appropriate computer software</li> </ul>	Digital writing – Teach Computing <ul style="list-style-type: none"> <li>Turn on a computer and open word processing application</li> <li>Type letters, numbers and symbols, including use of the shift key</li> <li>Introduction to simple formatting of text</li> <li>Correct text (moving the cursor, back space to delete, undo button)</li> <li>Compare typing and writing to create and edit text</li> </ul>	Introduction to Power Point <ul style="list-style-type: none"> <li>Introduction to touch typing – typing club</li> <li>Create a simple power point presentation</li> <li>Understand how work is saved and use save as and save with support</li> <li>Retrieve work previously saved with support</li> <li>Add new slides and change backgrounds</li> <li>Add text boxes and type relevant information, use bullet points</li> <li>Copy and paste images and blocks of text</li> </ul>	Stop frame animation – Teach Computing <ul style="list-style-type: none"> <li>Use a range of techniques to create a stop-frame animation including a flip book</li> <li>Explain why little changes are needed for each frame and how to create and effective animation</li> <li>Apply skills learnt to create a story board and story-based animation using appropriate software</li> <li>Add other types of media to an animation, such as music and text</li> </ul>	Word Processing – Twinkl <ul style="list-style-type: none"> <li>Formatting and editing text and images</li> <li>Use spell check</li> <li>Insert and format a table</li> <li>Create and edit a page layout</li> <li>Add a hyperlink to a word processed document</li> </ul>	Adventure quest: powerpoint projects – Phil Wikins (NCCE) <ul style="list-style-type: none"> <li>Adding and editing text and shapes</li> <li>Inserting and editing hyperlinks</li> <li>Changing background and themes</li> <li>Safely searching for images online</li> <li>Inserting, resizing, rotating and layering images</li> <li>Coding skills: sequencing, planning an algorithm, testing, debugging</li> <li>Save and retrieve own documents to/from specified location</li> </ul>	Webpage design – Teach Computing <ul style="list-style-type: none"> <li>Evaluate the quality of existing websites</li> <li>Plan own and then class website considering user navigation and experience</li> <li>Create multiple webpages linked with hyperlinks</li> <li>Select, use and combine a variety of software on Chrome books, ipads and other digital devices to create programs and content to showcase Year 6 activities and achievements</li> </ul>
			Digital painting – Teach Computing <ul style="list-style-type: none"> <li>Introduce a range of freehand, line and shape tools for digital painting</li> <li>Select appropriate tools to create a picture in a defined artistic style</li> <li>Compare creating pictures digitally and on paper</li> </ul>	Digital music – Teach Computing <ul style="list-style-type: none"> <li>Listen to and compare pieces of music</li> <li>Create rhythm patterns using percussion instruments and Chrome books</li> <li>Experiment with using a Chrome book to change pitch and express emotions</li> <li>Create and refine a musical pattern</li> <li>Create a melody using an animal as inspiration</li> <li>Retrieve and improve their work</li> </ul>	Photo editing – Teach Computing <ul style="list-style-type: none"> <li>Cropping and rotating images</li> <li>Changing colours and colour effects</li> <li>Use of cloning</li> <li>Combining images</li> <li>Applying skills to create images for a project</li> <li>Evaluating effectiveness of image editing</li> </ul>			
<b>Data Handling</b>					Branching database – Teach Computing <ul style="list-style-type: none"> <li>To create a branching database including yes/no questions and collection of relevant data</li> <li>Identify objects using a branching database</li> <li>Explain why it is helpful for a database to be well structured</li> <li>Compare the information in a pictogram with a branching database</li> </ul>		Excel Spreadsheets- Design a spreadsheet for a specific purpose <ul style="list-style-type: none"> <li>Enter data and simple formulae into a spreadsheet</li> <li>Change some of the data and discuss effect on results with assistance</li> <li>Understand that a spreadsheet can be used to help solve problems</li> <li>Order and present data based on calculations</li> <li>Plan and calculate a spend budget</li> </ul>	