Pyrford C of E School Computing Progression Map

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
E-safety	Introduction to internet safety focusing on asking a trusted adult for help with any issues	Smartie the Penguin - Childnet • Know to seek adult help to deal with online issues (unexpected pop ups, to find a website, deal with a message) • Understand the principle that you must be kind online	Jessie and Friends – Think U Know • Seek help from a trusted adult when they feel worried, scared or sad due to material online • Understand that they need help from a trusted adult to search for content online • Introduction to issues related to sharing photos	Online Safety – Twinkl and CEOP • Seek help from a trusted adult when they encounter worrying or upsetting material and other issues • Understand that information online leaves a 'digital footprint' • Understand what personal information is and that it must be kept private • Introduction to effective and appropriate online searching • Start to be able to identify kind and unkind behaviour online • Know that people met online are strangers	SMART Crew E-safety – Childnet International • Seek help from a trusted adult when they encounter worrying or upsetting material and other issues • Be careful when accepting messages and attachments • Be discerning about digital content • Keep personal information safe • Take great care and adult support when meeting up with someone met online	Band Runner – Think U Know • Identifying unacceptable online behaviour • Understand that unwanted correspondence can be blocked and reported • Understand how to respond to unacceptable behaviour including telling a trusted adult • Sharing videos, images and comments safely and kindly online	Trust me – Childnet International, Be Smart with Your Smartphone – Phone Paid Services Authority • Understand that not all content online is trustworthy • Strategies for being discerning about digital content • Understand safety issues related to contact from other people online • Understand that it is possible to spend real money through a smartphone and situations in which this will arise • Understand what to do in these situations and where to get help	Online Safety – Out of Your Hands • Using social media safely and understand the issues with putting personal information in the public domain • Explore what a digital footprint is, the platforms that can create and retain a digital footprint and how to keep a digital footprint safe • Understand safety and privacy issues around mobile phones • Understand what cyberbullying is and how to counter it • Understand the term 'plagiarism' and how write citations • Understand how to be a good digital citizen
Coding	Introduction to: • Sequencing e.g. 2 step verbal instructions, visual timetable, stories • Repetition e.g. simple patterns	Early coding concepts: • Understand simple, sequenced processes in a range of contexts • Group and sort objects • Recognise and create patterns • Sequence stories • Follow simple instructions for various outcomes including programmable toys, making models and familiar activities	Early programming concepts – from Teach Computing • Introduction to early programming concepts • Explore using individual commands • Identify what each command does, and use that knowledge to start predicting the outcome of programs • Predict the impact of and create simple sets of instructions in a range of contexts (e.g. Beebots, J2Code, creating drawings, dance) • Introduction to the early stages of program design through the introduction of algorithms An introduction to on-screen programming using Scratch Jr – Teach Computing • Explore the way a project looks by investigating sprites and backgrounds • Use programming blocks to use, modify, and create programs • Introduction to the early stages of program design through the introduction of algorithms	Crazy characters and Beebots programming – Barefoot Computing • Develop understanding of instructions in sequences and the use of logical reasoning to predict outcomes • Use given commands in different orders to investigate how the order affects the outcome • Learn about design in programming • Develop artwork and test it for use in a program • 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 An introduction to sequence and selection using Scratch Jr – Teach Computing • Understand that sequences of commands have an outcome • Make predictions for sequences of commands • Use and modify designs, and then create their own quiz questions in ScratchJr • Evaluate their work and make improvements to their programming projects	Sequencing in programming in Scratch (sounds) – Teach Computing • Introduction to the Scratch programming environment • Introduction to a selection of motion, sound, and event blocks • Explore and create sequences of commands • Create a project to make a representation of a piano Sequencing in programming in Scratch (events and actions) – Teach Computing • Consolidate prior learning relating to sequencing • Move a sprite in four directions (up, down, left, and right) • Explore movement within the context of a maze • Introduction to use of pen and modifications to line size and colour • Create a maze-tracing program • The unit concludes with learners designing and coding their own maze-tracing program	Programming repetition in shapes in Logo - Teach Computing • Introduction to the Logo programming environment • Predict outcomes, modify, create, test and debug algorithms to draw letters, shapes and patterns • Use repeat/loops including count controlled loops • Create a project to make a wrapping paper design Selection in programming in Scratch (making a quiz) – Twinkl – selection • Use logical reasoning to create an algorithm which achieves a goal • Create an algorithm for a simple quiz • Use sequence to create logical sequential steps in a quiz • Use the duplicate command to work efficiently • Introduce selection in programs by using the 'if…then…else… command' • Create a new variable for scoring • Add visual effects including working with variables • Debug an algorithm using logical reasoning and/or trial and improvement	Sequence, selection and repetition in physical computing using Crumble – Teach Computing • Introduction to physical programming through the use of the Crumble programming environment • Introduction to a microcontroller (Crumble controller) • Learn how to connect and program it to control components (including output devices — LEDs and motors) • Introduction to conditions as a means of controlling the flow of actions in a program • 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 • Create a project to design and make a working model	Coding games using sequence, selection, repetition and variables in Scratch – rundontwalk coding online lessons • Decomposition of a task – creating a maze game • Creating and animating sprites and background • Using selection for sprite motion and keyboard input • Introduction to variables • Use of sequence, selection and repetition to code various features of the game • Debugging and logical reasoning

Technology in our lives	Technology around us - • Be familiar with a range of digital devices in school setting • Play with toys that have inputs and outputs	Technology around us - • Recognise that a range of technology is used in places such as homes and schools • Know that information can be retrieved from computers and that they have a range of functions	Technology around us - Teach Computing • Introduction to technology • Introduction to parts of a computer • Introduction to using a mouse and keyboard	IT around us – Teach Computing • Recognise the uses and features of IT • Identify IT within and beyond school • Identify how IT helps us • Know how to use IT safely • Recognise that choices are made when using IT	Computing systems and networks – Teach Computing • Develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs • Compare digital and non-digital devices • Introduction to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches • Learn about the benefits of connecting devices in a network	The internet – Teach Computing • Apply knowledge of networks to appreciate the internet as a network of networks which need to be kept secure • Learn that the World Wide Web is part of the internet, and will be given opportunities to explore the World Wide Web in order to learn about who owns content and what they can access, add, and create • Evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information	Computing systems and networks – sharing information – Teach Computing • Develop understanding of computer systems and how information is transferred between systems and devices • Consider small-scale and large-scale systems • Explain the input, output, and process aspects of a variety of different real-world systems • 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	Computing systems and networks – collaboration and communication – Teach Computing • Explore how data is transferred over the internet • Introduction to addressing, the makeup and structure of data packets • Explore how the internet facilitates online communication and collaboration by completing shared projects online and evaluate different methods of communication • How to communicate responsibly by considering what should and should not be shared on the internet
Information Technology	Operation of simple equipment including IWB, remote control toys and torches	• Operation of simple equipment • Shows an interest and skills in operating technological toys • Uses ICT hardware to interact with age-appropriate computer software	Digital writing – Teach Computing • Turn on a computer and open word processing application • Type letters, numbers and symbols, including use of the shift key • Introduction to simple formatting of text • Correct text (moving the cursor, back space to delete, undo button) • Compare typing and writing to create and edit text	Introduction to Power Point • Introduction to touch typing – typing club • Create a simple power point presentation • Understand how work is saved and use save as and save with support • Retrieve work previously saved with support • Add new slides and change backgrounds • Add text boxes and type relevant information, use bullet points • Copy and paste images and blocks of text	Stop frame animation – Teach Computing • Use a range of techniques to create a stop-frame animation including a flip book • Explain why little changes are needed for each frame and how to create and effective animation • Apply skills learnt to create a story board and story-based animation using appropriate software • Add other types of media to an animation, such as music and text	Word Processing – Twinkl • Develop touch typing skills – typing club • Develop confidence with word processing skills learnt in Year 3 • Use some of the main keyboard shortcuts • Suggest ways to improve a layout • Apply specific effects to an image • Work with tables • Create a hyperlink	Adventure quest: powerpoint projects – Phil Wikins (NCCE) • Develop touch typing skills – typing club • Adding and editing text and shapes • Inserting and editing hyperlinks • Changing background and themes • Safely searching for images online • inserting, resizing, rotating and layering images • Working with transitions and animations • Coding skills: sequencing, planning an algorithm, testing, debugging • Save and retrieve own documents to/from specified location	Webpage design – Teach Computing • Develop touch typing skills – typing club • Evaluate the quality of existing websites • Plan own and then class website considering user navigation and experience • Create multiple webpages linked with hyperlinks • Select, use and combine a variety of software on Chromebooks, ipads and other digital devices to create programs and content to showcase Year 6 activities and achievements
			Digital painting – Teach Computing • Introduce a range of freehand, line and shape tools for digital painting • Select appropriate tools to create a picture in a defined artistic style • Compare creating pictures digitally and on paper	Digital music – Teach Computing • Listen to and compare pieces of music • Create rhythm patterns using percussion instruments and Chrome books • Experiment with using a Chrome book to change pitch and express emotions • Create and refine a musical pattern • Create a melody using an animal as inspiration • Retrieve and improve their work		Audio editing – Teach Computing • Identify the input device (microphone) and output devices (speaker or headphones) required to work with sound digitally • Discuss the ownership of digital audio and the copyright implications of duplicating the work of others • Use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files • Evaluate their work and give feedback to their peers		
Data Handling					Branching database – Teach Computing • Develop touch typing skills – typing club • To create a branching database including yes/no questions and collection of relevant data • Identify objects using a branching database • Explain why it is helpful for a database to be well structured • Compare the information in a pictogram with a branching database		Excel Spreadsheets- Design a spreadsheet for a specific purpose • Develop touch typing skills – typing club • Enter simple formulae into a spreadsheet • Change some of the data and discuss effect on results with assistance • Understand that a spreadsheet can be used to help solve problems • Enter data and formulae into a spreadsheet • Order and present data based on calculations • Add, edit and calculate data • Use a spreadsheet to solve problem • Plan and calculate a spend budget	•