COMPUTING PROGRESSION GRID

Intent: At Parsloes Primary School we believe that a high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Lessons are hands-on, which enables pupils to become digitally literate – at a level suitable for the future workplace and as active participants in a digital world. Computing has deep links with mathematics, science, and design and technology through the wide use of physical systems. By the time they leave Parsloes Primary School, children will have gained new knowledge and skills in the areas of: communication, multimedia, programming and digital literacy and research

LEARN:	RUPA:	SMSC:
L – language acquisition **E** – empowering experiences **A** – active and hands-on learning **R** – relevant to our diverse community **N** – new knowledge and skills	**R** – respectful **U** – understanding **P** – positive **A** – aspirational	**S** – Spiritual **M** – Moral **S** – Social **C** – Cultural

KEY VOCABULARY

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Communication Technology, computer, mouse keyboard, screen, click, drag, input device, word processor, keyboard, keys, letters, space, backspace, bold, italic, underline, text		**Communication** attachment, subject line, reply, online collaboration, email, blog	**Communication** plagiarism, copyright, criteria, transition, layout, refine, presentation, transition	**Communication** collaborative, formatting, transition, presentation, consistency, animation, images, theme, network	
Data graph, data, pictogram, fields, grouping, information	**Data** branching database *(sometimes called a binary tree)* , graph, data ,database, axis, interrogate	**Data** Analyse, sort, interrogate, data, information, branching database, field, record, graph, filter	**Data** Continuous data, discrete data, graph, Microsoft Excel, graph, interrogating data, formulae	**Data** Interrogate, formulae, What If, Complex search, Interface, spreadsheet, advanced search	**Data** Formulae, spreadsheet, graph, calculate, Excel, purpose, interface, purpose
Digital Research and Literacy Hyperlink, menu, website, information, homepage, forward, back, button, safely	**Digital Research and Literacy** SMART, inappropriate, fake, safe, trusted adult, navigation, zoom in, frame, fake news	**Digital Research and Literacy** Digital device, input, output, process, Program, Network switch, Server, Wireless access point (WAP).	**Digital Research and Literacy** Complex research, search, refine, plagiarism, copyright, fake,	**Digital Research and Literacy** Bias, manipulation, copyright, credit, websites, online behaviour, content	**Digital Research and Literacy** Search, search engine Google, Bing, Yahoo!, DuckDuckGo, refine, digital literacy, WWW
Multimedia Multimedia, brush, fill, line, undo, eraser, zoom in, zoom out, portrait, landscape, frame, picture	**Multimedia** Animation, video, image, text, edit	**Multimedia** Print-screen, download, zoom in/out, image, snipping tool, editing	**Multimedia** Edit, arrange, undo, save, composition, crop, rotate, flip, stop-motion	**Multimedia** audio, trimming, credits, re-ordering, voice-over, multimedia, compatibility, animation	
Programming Algorithm, sequence decomposition, Bug, Debug, Program	**Programming** Algorithm, predict, programming, instruction, efficient, outcome, input/output, debug	**Programming** Loop, algorithm, bug, debug, repeat	**Programming** Algorithm, variable, simulation, coding, input/output, decomposing, loop, Refine, nested loop.	**Programming** Physical system, variable, simulation, crumble kits, coding, input/output, decomposing, condition	**Programming** Physical system, variable, simulation, crumble kits, coding, input/output, decomposing, condition, evaluate, purpose

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
KEY KNOWLEDGE AND SKILLS	**Communication**					
	Use letters, basic punctuation, spacebar and 'enter' key to type words and sentences quickly Use the backspace to make corrections Use the shift key for punctuation Start to use two hands when typing Edit and improve work by changing, adding or removing words Change the size, colour and style Word process short texts rather than copying up written work		Use cut, copy and paste to reorder content Use and resize graphics within work Use spell check Type text and insert images within pages Add text effects and move around to find best layout Send and reply to messages, e.g. email Add and open attachments Know not to open messages and attachments from strangers	Use different layouts and effects (text-box, columns, justification, borders) Add background colour to improve work Add slide transitions and animations Display oneself appropriately online Comment appropriately on a blog/forum Know how to stay safe whilst communicating online	Develop consistency across a document Add multimedia elements Trigger animations or links to other slides Understand personal information online leaves a digital footprint Know how and why to create secure passwords Know files may be saved off devices and 'cloud' storage and know advantages of doing so Know what spam is and how to deal with it Discuss and evaluate documents Create a consistent design for presentations and present to others Know some websites and social media platforms have age restrictions and why these might be in place. Describe opportunities computer networks and the internet offer for communication and collaboration Know different ways to report concerns about contact online	
	Data					
	Sort items into groups Make pictograms and know computers can create them quicker Make changes to information in a pictogram Know if wrong data is entered, then the pictogram will be wrong Use the pictogram to ask questions	Sort items into groups using Y/N questions Use a branching database to sort and identify items Search a prepared database to answer simple questions Collect set of data and present in a simple graph Save, open and edit work	Create a branching database to sort and organise items Filter and sort records in a database Design a questionnaire to collect information Display information in a graph Display information in a table	Present data in a graph Know the difference between continuous and discrete data Interrogate a graph Use graph in presentations and documents to share Add text and numbers into a spreadsheet Add formulae to perform basic calculations (SUM)	Create a data collection to design a database Interrogate databases using more complex searches Simple functions in spreadsheets to solve problems Change data in a formula to answer 'What if questions' Change the format of cells and tables	Use more complex formulae Use brackets to organise formulae Edit formulae when changing spreadsheet model Create graphs from calculations Design and create a spreadsheet for a specific purpose

				Format cells (colour, size, border) Copy and paste formulae within a spreadsheet	Create a graph from calculations in a spreadsheet	
	Digital Literacy and Research					
	Explore a website using buttons, menus and hyperlinks Use the 'back' button Read words, look at pictures and watch videos on a website to find information Know what to do if I see something online that makes me uncomfortable Know what things count as personal information and who I can share it with	Navigate to a website via favourites and typing in address, to find out information Know that some things found on the internet will not be true, useful or safe Use a search engine to find facts using key word search Know what to do if I find something inappropriate online, & where to go for help Know how to stay safe by going to age-appropriate websites Know how to behave safely and respectfully online Know that not everyone online is who they say they are	Type in a URL to find a website, and I know that each website has a unique address Search online for images and information safely Talk about the reliability of information on the internet Present the information I have found and share it with others Know why we need to keep passwords safe and secure Recognise the effect my writing or images might have on others	Use more complex search criteria to narrow down my search Know that information on websites may not be accurate or reliable and can check information using different sites Make notes from information found on websites to present my findings Know what plagiarism is and when I can use the work of others Know how and why to keep my personal information private Know how to deal with cyberbullying, if it affects me or my friends Identify dangers when presented with scenario us (e.g. linked to email, social networking profiles etc.)	Know the information (including images) found on some sites may be used for manipulation, persuasion or to promote bias Know that images and text found on websites is subject to copyright Know how to credit the use of websites in my work, and why this should be done Know different ways of reporting concerns about content Describe what constitutes good behaviour online, and can put this into practice	Understand how computer networks work, including the internet Understand the difference between the internet and an internet service, e.g. the world wide web, VOIP Use search engines effectively, and I know how search results are selected and ranked Judge what sort of privacy settings might be relevant on sites to reduce risk (e.g. on social networks) Discuss scenarios involving online risks and how to report concerns (e.g. CEOP Report It button)
	Multimedia					
	Paint with different colours using undo or eraser to correct mistakes Use different tools such as brush, pen, line, shape and fill	Discuss the quality of my images and make decisions e.g. delete a blurred image Use a photograph within a document Combine a set of photographs to tell a story	Use the print screen function to capture an image Select and use a certain area of an image Combine text and images, making conscious decisions	Plan an animation using a storyboard Shoot frames to combine into an animation Edit an animation to improve it / make it more realistic	Add and combine shapes to design a 3D model Add detail to my 3D model Improve a photo with editing tools e.g. blur, filters, add border	Take photos for a given purpose and use them in my work Plan and create an animation for a given purpose

Use a digital still camera to take a picture Understand the need to frame the image and keep the camera still Record an audio recording Play back an audio recording	Capture video Understand the need to frame the image and move the camera carefully Play back a video recording	about appealing to an audience Add sounds to a document Group, copy and move shapes within a picture Order shapes / images by sending them to the back / front Crop and / or rotate an image where needed Adjust the colours on a photo	Put sounds over an animation Add titles and photos into an animation Download the video files from the video camera Combine video clips to create a video Add simple titles and credits Re-record an audio recording to improve clarity Download and save a recording	Edit the video; trimming and re-ordering clip Add a voice-over and / or background music to a video Add titles and credits to my video Create an audio recording and add it to other software	Edit an animation to improve it / make it more realistic Combine an animation with other software Select and use appropriate multimedia tools, and combine these for a given purpose with confidence

Programming

Explore what an algorithm is Write simple algorithms with symbols Follow a sequence of instructions with symbols Write simple commands for a beebot Explore and think of different algorithms	Read and follow written algorithms Being aware of having more than 1 algorithm to perform the same task Predict outcomes of simple algorithms Write sequence of instructions for a specific task Identify problems for debugging Describe how algorithms could be used in the wider world	Follow instructions to write a program Adapt a program for a new task Spot patterns in code Create simple loops to use within a program Explore simulations and know how to control them	Explore programs and decompose elements Simple inputs to control on/off Create continuous loops Simple conditions 'if…then' Evaluate an algorithm/program and suggest improvements	Create variable to use in a program Use multiple selection 'if…then…else' Create and use a loop with conditions 'repeat until…' Inputs or sensors to control a physical system Debugging programming errors	Plan a program by decomposition and solve debugs Use more than 1 variable in a program Adapt/write a program for a specific purpose Evaluate overall effectiveness of program and debug if required

	ASSESSMENT					
KEY ENQUIRY: BIG QUESTIONS	**Year 1** **Communication** How can we add and edit text using Microsoft Word? **Programming** How can we program a Beebot to follow a set of instructions? **Multimedia** How can we use a keyboard and mouse to create an image on the computer? **Data** What can we use to group information? **Digital Literacy** How can we navigate a website safely?	**Year 2** **Digital Literacy** How do we research safely online? **Programming** How can we use and debug algorithms to program Beebots? **Data** How can we create a branching database? **Multimedia** How can we create an animation?	**Year 3** **Digital Literacy & Research** How can we present information we find online? **Data** How do we create, filter and sort a branching database? **Multimedia** How can we effectively combine text and images to create a menu? **Communication** How can we send an email and attachment safely? **Programming** How can we include a simple loop in an algorithm using Crumble kits?	**Year 4** **Data** How can we use databases to create graphs and tables to represent real world data? **Multimedia** How can we plan and record stop motion animation? **Communication & Research** How can we refine our searches online and present our findings? **Programming** How can we use Scratch to produce continuous loops? **Programming** How can we create decomposing algorithms and IF functions?	**Year 5** **Communication** How can we plan and present a PowerPoint with images, clips, maps and themes? **Data** How can we use more advanced searches in a database using formulae? **Programming** How can we use Crumble Kits with repeated loops and conditions? **Programming** How can we use more advanced algorithms in Scratch? **Multimedia** How can we use more advanced features of video editing?	**Year 6** **Data** How can we use formulae and functions to solve problems in a spreadsheet? **Digital Research & Literacy** How can we complete refined searches and understand how results are ranked? **Programming** How can we write a program for a specific purpose using Scratch? **Multimedia** How can we design and create a document or video for a specific purpose?