Subject Progression for Computing

Year Group	Unit	Objectives	Skills / Knowledge Children at the expected standard can…
3	**Desktop Publishing** *KEY QUESTION:* *How can I use DTP to present my work in an interesting and interactive way?* *KEY VOCABULARY:* *Word, Powerpoint, Wordart, Toolbar, Edit, Save, Link.*	To present poems in Word using a variety of font sizes and styles. To evaluate most effective way to present their poems. To use hyperlinks within a document.	Create a poem in Word, selecting appropriate text colour, font and size appropriate for audience. Explain their choices and justify them. Use Hyperlink feature within PP to creative an interactive scene setting.
	Computational thinking *KEY QUESTION:* *How can I create a basic algorithm?* *KEY VOCABULARY:* *Algorithm, Sequence, Selection, Variable, Procedure*	To understand that a computer can only follow the steps it has been programmed to do. To understand precision is needed to write code. To understand loops within a command	Write a simple instruction for a partner, with precision and clarity. Make the link between these simple instruction and basic code. Realise the need for clear, concise instructions.
	Programming/ Scratch *KEY QUESTION:* *How can I control a Sprite in Scratch?* *KEY VOCABULARY:* *Scratch, Sprite, Control, Debug, Background,*	To control a Sprite to move in 4 directions, turning the Sprite so it always appears in the correct orientation. To use the pendown facility. To create background within Scratch.	Use a keyboard input to control aspects of the game Produce simple sequence of code using principle of precision Understand there is often more than one way to get the same outcome but the most efficient codes have less instructions

Year Group	Unit	Objectives	Skills / Knowledge Children at the expected standard can…
4	**Programming Computational thinking/Scratch** *KEY QUESTION:* *How can I use Scratch to control a Sprite?* *KEY VOCABULARY:* *Loops, Modification, Sequence, Repetition, Algorithm, Debug, If, Else*	To use Scratch to control a Sprite within one program using control loops. To understand the difference between repeat and forever loops.	Investigate, change and add to an existing program to control a Sprite. Write, design and debug a program. Use sequence and repetition within a program. Explain how an algorithm works.
	Desktop Publishing *KEY QUESTION:* *How can I use PP to create an interactive description of my mythical beast?* *KEY VOCABULARY:* *Slide transitions, Layout, Hyperlinks,*	To use Powerpoint to create an effective interactive explanation of their mythical beast. To use links between slides effectively. To create a cohesive presentation.	Create an Interactive Powerpoint with Hyperlinks to extra information. Articulate what makes an effective Powerpoint presentation and why.
	Data (Excel) *KEY QUESTION:* *How can I use Excel to work out if I am making a profit from my freeholding?* *KEY VOCABULARY:* *Cells, formula, Sum, Average*	To use a spreadsheet for a real life examples. To design a spreadsheet to support gardening project. To use SUM feature to keep a running total of costs.	Know cells hold data and that the spreadsheet can be used to keep totals. Create a spreadsheet which uses Sum function.
5	**Desktop Publishing** (Mayan PowerPoint / Quiz) *KEY QUESTION:*	To understand how repeated hyperlinks within PP create a quiz.	Understand that programs like PowerPoint are primarily about presenting information in manageable chunks/slides. Add slides and change their layout.

Year Group	Unit	Objectives	Skills / Knowledge Children at the expected standard can…
	How can I create an interactive quiz using PP? *KEY VOCABULARY:* *Hyperlinks, Repeat loop, Evaluation*		Add text to a slide and how to modify it using simple formatting tools. Create hyperlinks within a presentation.
	Programming Computational thinking/ /Scratch *KEY QUESTION: How can I use Scratch to create a coin counting machine?* *KEY VOCABULARY:* *Variable, Debug, Simulation, Abstraction, control blocks Background,*	To design and write a simulation. To debug a simulation program. To explain why a simulation might be needed.	Design, write and debug a program in Scratch, making sensible suggestions for their possible errors.
	Data (Excel) (Volcano Spreadsheets / Top Trumps) *KEY QUESTION:* *How can I use Excel to organise data about Volcanoes?* *KEY VOCABULARY:* *Spreadsheet, cell, data, formula*	To design their own data collection sheet for volcano facts.	Make sensible choices for headings. Make decisions about how data is presented.
	How the Internet Works *KEY QUESTION:* *Can I explain how the internet works?* *KEY VOCABULARY:*	To understand how the internet works	Understand that people use lots of services provided by companies and individuals that use the Internet

Year Group	Unit	Objectives	Skills / Knowledge Children at the expected standard can…
	Routers, switch, webservice, protocol		Understand that these services are hosted on a computer or computers called Internet servers Understand that Internet servers are connected by a web of wires carrying information called data Understand that Routers help users find the right path to the service they want to use Understand that we can trace where web sites are hosted (computer they live on) Understand that we can see how many routers the information goes through to get there. Understand that we can see which country they are hosted in.
6	**Desktop Publishing** *KEY QUESTION:* *How can I present my work in an interesting and informative way?* *KEY VOCABULARY:* *Slide transitions, Animation, Timings, Review, Validity*	To present information in an engaging way, knowing that sometimes less can be more.	Know how to add a video to a slide. Understand that if a presentation is run automatically that all information is needed on the slide Know how to create slide transitions. Know how to add animations to objects on the page.

Year Group	Unit	Objectives	Skills / Knowledge Children at the expected standard can…
			Investigate which transitions and animations enhance a viewer's enjoyment and which distract from the information presented.
	Programming Computational thinking/ /Kodu *KEY QUESTION:* *How can I control a Kodu in a virtual environment?* *KEY VOCABULARY:* *Kodu, When and Do, Investigate and Evaluate, Logical reasoning*	To use Kodu to control a Sprite and create a virtual environment.	Open Kodu and navigate Add objects to a World and program then using When and Do. Design a virtual environment Program a character to move around a track Create a path for a Kodu to follow
	Data (Excel) *KEY QUESTION:* *How can spreadsheets be used to manage finances?* *KEY VOCABULARY:* *Cells, Sum, Average, Formula*	To create a Spreadsheet to control my Fiver challenge expenses	Enter text and numbers into a Spreadsheet Identify cells by row and column Create formula using SUM formula Make informed judgements as to why a particular graph type is the best way to present their data.
	Programming Computational thinking/ /Scratch *KEY QUESTION:* *How can I program Scratch to randomly generate numbers and know if those numbers are odd or even?*	To create a program that randomly generates a number and then asks the user if the number is odd or even. (The program uses the concept that odd numbers generate a remainder when divided by 2 and even numbers don't.)	Design, write and debug programs that accomplish specific goals Sequence, selection, and use repetition in programs and work with variables Detect and correct errors in programs

Year Group	Unit	Objectives	Skills / Knowledge Children at the expected standard can…
	KEY VOCABULARY: *Variable, repetition, debug, sequence*		