Computing Progression Framework

	Year 3	Year 4	Year 5	Year 6
Computer Systems and Networks				
	Connecting Computers	**The Internet**	**Systems and Searching**	**Communication and Collaboration**
Local Device	Pupils know how digital devices function, using inputs and outputs. Pupils know how to follow a process. Pupils can classify input and output devices. Pupils know how to follow a process. Pupils can classify input and output devices.		Pupils know that computers can be connected together to form systems, and that these feature inputs, outputs and processes. Pupils know that systems are built using a number of parts.	
Internet and Network	Pupils know how a network can be used to share information, including how messages are passed through multiple connections. Pupils know how digital devices can be connected, including how information can be passed between them. Pupils know the role of a switch, server and wireless access point in a network. Pupils know that a computer network is made up of multiple devices.	Pupils know that the internet is a network of networks. Pupils know how information is shared across the internet. Pupils know how devices can connect to create a network. Pupils know how to access websites on the World Wide Web (WWW). Pupils know where websites are stored on the WWW. Pupils know that different media can be shared on the WWW, and these are created by people.	Pupils know that computer systems communicate with other devices. Pupils know how to use a search engine to find specific information, refining their results. Pupils know how to compare results from different search engines. Pupils know that web crawlers create indexes.	Pupils know how computers use addresses to access websites, and that devices also have addresses. Pupils know how data packets transfer information over the internet. Pupils know that the internet allows media to be shared. Pupils know how to access shared files, stored online. Pupils know how to send information over the internet in different ways. Pupils know how to collaborate online, and that this can be done publically or privately. Pupils know how to compare ways of communicating on the internet,

				deciding when to share information as they understand it may not be private.
Internet Safety	To know how to make a secure password. To know how to use emojis respectfully online.	Pupils know that there are rules to protect content on the WWW. Pupils know that not everything on the WWW is true, and why it may not be honest, accurate or legal. Pupils know why a network needs protecting.	Pupils know that search engines follow rules to rank results, knowing how they can be influenced. Pupils know how search engines make money, knowing their limitations.	
	Programming			
	A: Sequencing Sounds	**A: Repetition in Shapes**	**A: Selection in Physical Computing**	**A: Variables in Games**
	Pupils know that objects in Scratch have attributes, identifying them in a project. Pupils know that commands in Scratch are represented as blocks. Pupils know how to create a program using a design and sequence. Pupils know that sprites are controlled by commands. Pupils know how to use sound commands.	Programme: Turtle AcademyPupils know how to write code, changing the value of a command. Pupils know how to program a computer by typing commands. Pupils know how to write an algorithm to achieve an outcome. Pupils know how to use a count controlled loop, knowing which values to change. Pupils know how to use a procedure in a program, and debug.	Pupils know how to create a simple circuit and connect it to a microcontroller, controlling an LED. Pupils know what an infinite loop does. Pupils know how to connect more than 1 output device to a microcontroller. Pupils know that count controlled loops can control outputs. Pupils know how to create a conditional loop, that is either true or false. Pupils know that a condition being met can start an action. Pupils know that a condition (if, then) can control a program. Pupils know how to debug their program.	Pupils know that variables can hold numbers or letters, knowing that they have names and values. Pupils know that program variables can hold the place of a single variable. Pupils know that events in a program can set variables. Pupils know how to create algorithms for a program, and test code. Pupils will explore the concept of variables in programming through games in Scratch.

	B: Events and Actions in Programs	**B: Repetition in Games**	**B: Selection in Quizzes**	**B: Sensing Movement**
	Pupils know the relationship between an event and action. Pupils know how to program movement, using a sequence of commands. Pupils know how to match a piece of code to an outcome.	Programme: ScratchPupils know how to use count controlled and infinite loops, modifying them to create a given outcome. Pupils know that more than one process can run at once. Pupils know how to use existing code on new sprites.	Pupils know, and can modify, conditions in a program, knowing how they are used in selection. Pupils know the outcomes in an 'if…then…else' statement, including within infinite loops. Pupils know that a program can branch based on a condition. Pupils know how to share their program with others. Pupils use j2e data website	Pupils know that emulators can be used to test programs and transferred to controllable devices. Pupils know that if, then and else statements can be used to control the flow of a program, knowing the importance of the order of these. Pupils know that operands (<>=) can be used in if, then statements. Pupils know that conditions can be used to change variables. Pupils know how to find and fix bugs in their programs. Pupils will use a physical device - the micro:bit - to test several projects.

	Creating Media (Text)			
	Desktop Publishing			**Web Page Creation**
	Pupils know the difference between text and images. Pupils know how to edit text, changing font size and colour. Pupils know the meaning of page orientation. Pupils know how to paste text and images, to create a magazine cover. To recognise that text and images can communicate messages clearly. To create a template for a magazine cover To make changes to content after it's been added. To consider how different layouts can suit a different purpose I can say how desktop publishing may be helpful in the real world To compare work created on desktop publishing and by hand.			Pupils know the different types of media used on websites. Pupils know that websites are written in HTML. Pupils know the common features of a web page. Pupils know the term fair use, and can find copyright free images. Pupils create their own webpage using google sites. Pupils know how to add content to a webpage and preview it. Pupils know what a navigation path is, and can link webpages using hyperlinks.

		Photo Editing	**Introduction to Vector Graphics**	**3D Modelling**
		Programme: Paint.netPupils know how to use software to crop and rotate an image. Pupils know how to use cloning and colour effects to edit an image. Pupils know how to combine text and an image.	Pupils know that vector graphics are made using shapes, or objects. using Google application, word or method draw vector website Pupils know how to move, rotate, resize and duplicate objects, using the shape and line tools. Pupils know that alignment grids and resize handles are used to improve consistency. Pupils know how to use the zoom tool and can reorder layers, grouping and ungrouping objects.	Pupils know how to add, move, lift/lower, resize, recolour, duplicate, group, rotate and view 3D objects. Pupils know how to use the Tinkercad software to create a range of 3D objects.
	Creating Media (Video)			
	Stop Frame Animation		**Video Production**	
	Pupils know how to create a flip-book style animation, explaining how it works. To create an effective stop-frame animation with little changes. I can create a storyboard using settings, characters and events I can describe an animation which is achievable on screen. I can use onion skinning to make small changes across a sequence of frames. I can evaluate mine and other learners animations. To add other media to my animation and evaluate the impact.		Pupils know the features on a digital video recording device, including a microphone. Pupils know how to save, retrieve and export video content. Pupils know the tools used to edit their video. Pupils use i-pads and the video app i-movie to edit.	

	Creating Media (Audio)			
		Audio Production		
		Pupils know that input and output devices are used to record and play sound. Pupils know how to use a computer to record audio. Pupils can add sounds to a podcast. Pupils know how to trim a sound recording and save an editable document. Pupils know how to open files and export audio files.		
	Data and Information			
	Branching Databases To create questions with yes/no answers to sort groups To identify the attributes needed to collect data about an object to sort into groups To create and test a branching database I can compare two branching database structures I can explain that questions need to be ordered carefully to split objects into similarly sized groups To plan the structure of a branching database using questions so objects can be uniquely identified. I can create a branching database that reflects my plan		**Data - Graphs and charts** This unit looks at how a flat-file database can be used to organise data in records. Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others.Pupils use j2e data website	**Introduction to spreadsheets** Pupils will be able to organise data into columns and rows to create their own data set. Pupils will be introduced to formulas and begin to understand how to produce calculated data. Pupils will understand how to apply formulas to a range of cells. Pupils will use a spreadsheet to plan an event.

	I can suggest real-world uses for branching databases			