Progression of Computing Knowledge & Skills

	EYFS	Year 1/2 Cycle A	Year 1/2 Cycle B	Year 3/4 Cycle A	Year 3/4 Cycle B / Year 4/5 Cycle A	Year 4/5 Cycle B / Year 5/6 Cycle A	Year 5/6 Cycle B
Computing Systems and Networks	Role play using technology. Help adults operate equipment around school. Operate simple equipment independently. Begin to identify technology in their environment.	**Unit:** Technology Around Us **LO: I can identify technology** - I can explain how these technology examples help us. - I can explain technology as something that helps us. - I can locate examples of technology in the classroom. **LO: I can identify a computer and its main parts** - I can name the main parts of a computer - I can switch on and log into a computer - I can use a mouse to click and drag **LO: I can use a mouse in different ways.** - I can click and drag to make objects on a screen - I can use a mouse to create a picture - I can use a mouse to open a program **LO: I can use a keyboard to type.**	**Unit:** IT Around Us **LO: I can recognise the uses and features of information technology.** - I can describe some uses of computers - I can identify examples of computers - I can identify that a computer is a part of information technology **LO: I can identify information technology in the home.** - I can explain the purpose of information technology in the home - I can move and resize images - I can open a file **LO: I can identify information technology beyond school.** - I can compare types of information technology - I can find examples of information technology - I can talk about uses of information technology **LO: I can explain how information technology benefits us.**	**Unit:** Connecting Computers **LO: I can explain how digital devices function.** - I can explain that digital devices accept inputs - I can explain that digital devices produce outputs - I can follow a process **LO: I can identify input and output devices.** - I can classify input and output devices - I can design a digital device - I can model a simple process **LO: I can recognise how digital devices can change the way we work.** - I can explain how I use digital devices for different activities - I can recognise similarities between using digital devices and non-digital devices - I can suggest differences between using digital devices and non-digital devices **LO: To explain how a computer network can**	**Unit:** The Internet **LO: I can describe how networks physically connect to other networks.** -I can demonstrate how information is shared across the internet -I can describe the internet as a network of networks -I can discuss why a network needs protecting **LO: I can recognise how networked devices make up the internet.** -I can describe the different networked devices and how they connect -I can explain how the internet allows us to view the World Wide Web -I can recognise that the World Wide Web is part of the internet that contains websites and web pages **LO: To outline how websites can be shared via the World Wide Web.** -I can describe how to access websites on the WWW	**Unit:** Systems and Searching **LO: I can explain that computers can be connected together to form systems.** -I can describe that a computer system features inputs, processes and outputs -I can explain that computer systems communicate with other devices -I can explain that systems are built using a number of parts **LO: I can recognise the role of computer systems in our lives.** -I can explain the benefits of a given computer system -I can identify tasks that are managed by computer systems -I can identify the human elements of a computer system **LO: I can recognise how information is transferred over the internet.** -I can explain that data is transferred over networks in packets	**Unit:** Communication and Collaboration **LO: I can Identify how to use a search engine.** - I can compare results from different search engines - I can complete a web search to find specific information - I can refine my search **LO: I can describe how search engines select results.** - I can explain why we need tools to find things online - I can recognise the role of web crawlers in creating an index - I can relate a search term to the search engine's index **LO: I can explain how search results are ranked.** - I can explain that a search engine follows rules to rank relevant pages - I can explain that search results are ordered - I can suggest some of the criteria that a search engine checks

Progression of Computing Knowledge & Skills

		- I can save my work to file - I can tell you that writing on a computer is called typing - I can type my name in a computer **LO: I can use the keyboard to edit text.** - I can delete letters - I can open my work from a file - I can use the arrow keys to move the cursor **LO: I can create rules for using technology responsibly.** - I can discuss how we benefit from these rules - I can give examples of some of these rules - I can identify rules to keep us safe and healthy when we are using technology in and beyond the home	- I can demonstrate how information technology is used in a shop - I can explain how information technology helps people - I can recognise that information technology can be connected **LO: I can show how to use information technology safely.** - I can list different uses of information technology - I can recognise how to use information technology responsibly - I can say how those rules/guides can help me **LO: I can recognise that choices are made when using information technology.** - I can enjoy a variety of activities - I can explain simple guidance for using information technology - I can identify the choices that I make when using information technology	**be used to share information.** - I can discuss why we need a network switch - I can explain how messages are passed through multiple connections - I can recognise different connections **LO: I can explore how digital devices can be connected.** - I can demonstrate how information can be passed between devices - I can explain the role of a switch, server, and wireless access point in a network - I can recognise that a computer network is made up of a number of devices **LO: I can recognise the physical components of a network.** - I can identify how devices in a network are connected with one another - I can identify networked devices around me - I can identify the benefits of computer net	-I can describe where websites are stored when uploaded to the WWW -I can explain the types of media that can be shared on the WWW **LO: I can describe how content can be added and accessed on the World Wide Web.** -I can create media which can be found on the websites -I can explain that new content can be created online -I can recognise that I can add content to the WWW **LO: I can recognise how the content of the WWW is created by people.** -I can explain that there are rules to protect content -I can explain that websites and their content are created by people -I can suggest who owns the content on websites **LO: I can evaluate the consequences of unreliable content.** -I can explain that not everything on the WWW is true -I can explain why I need to think carefully	-I can explain that networked devices have unique addresses -I can recognise that data is transferred using agreed methods **LO: I can explain how sharing information online lets people in different places work together.** -I can explain that the internet allows different media to be shared -I can recognise that connected digital devices can allow us to access shared files stored online -I can send information over the internet in different ways **LO: I can contribute to a shared project online.** -I can compare working online with working offline -I can make thoughtful suggestions on my group's work -I can suggest strategies to ensure successful group work **LO: I can evaluate different ways of working together online.** -I can explain how the internet enables effective collaboration	to decide on the order of results **LO: I can recognise why the order of results is important, and to whom.** - I can describe some of the ways that search results can be influenced - I can explain how search engines make money - I can recognise some of the limitations of search engines **LO: I can recognise how we communicate using technology.** - I can choose methods of communications to suit particular purposes - I can explain the different ways in which people communicate - I can identify that there are a variety of ways of communicating over the internet **LO: I can evaluate different methods of online communication.** - I can compare different methods of communicating on the internet - I can decide when I should not share - I can explain that communication on the

Progression of Computing Knowledge & Skills

					before I share or re-share content -I can explain why some information I find online may not be honest, accurate or legal		-I can identify different ways of working together online -I can recognise that working together on the internet can be public or private	internet may not be private
	EYFS	**Year 1/2 Cycle A**	**Year 1/2 Cycle B**	**Year 3/4 Cycle A**	**Year 3/4 Cycle B**	**Year 4/5 Cycle A**	**Year 4/5 Cycle B**	**Year 5/6 Cycle A**	**Year 5/6 Cycle B**
Creating Media	Use age appropriate websites. Use a mouse to arrange objects on a screen. With support, use a keyboard for simple typing. Interact and explore their environment using different computing equipment e.g. cameras, microscopes, visualisers. Collect information, e.g., by taking photographs or collecting object	**Unit:** Digital painting **LO: I can describe what different freehand tools do.** - I can draw lines on a screen and explain which tools I used - I can make marks on a screen and explain which tools I used - I can use the paint tools to draw a picture **LO: I can use the shape tool and the line tools.** - I can make marks with the square and line tools - I can use the shape and line tools effectively - I can use the shape and line tools to recreate the work of an artist **LO: I can make careful choices when painting a digital picture.** - I can use appropriate shapes - I can create appropriate colour choices	**Unit:** Digital Photography **LO: I can know what devices can be used to take photographs.** - I can capture digital photos and talk about my experience - I can sort devices into old and new - I can talk about how to take a photograph **LO: I can use digital device to take a photograph.** - I can explain the process of taking a good photograph - I can explain why a photograph looks better in a portrait or landscape format - I can take photos in both landscape and portrait format **LO: I can describe what makes a good photograph.**	**Unit:** Desktop Publishing **LO: I can recognise how text and images convey information** - I can explain the difference between text and images - I can recognise that text and images can communicate messages clearly - I can identify the advantages and disadvantages of using text and images **LO: I can recognise that text and layout can be edited** - I can change font style, size, and colours for a given purpose - I can edit text - I can explain that text can be changed to communicate more clearly **LO: I can choose appropriate page settings**	**Unit:** Photo Editing **LO: I can explain that the composition of digital images can be changed** -I can improve an image by rotating it - I can explain why I might crop an image - I can use photo editing software to crop an image **LO: I can explain that colours can be changed in digital images** - I can explain that different colour effects make you think and feel different things -I can experiment with different colour effects - I can explain why I chose certain colour effects **LO: I can explain how cloning can be used in photo editing**		**Unit:** Webpage creation **LO: I can review existing website and consider the structure.** - I can discuss the different types of media used on websites - I can explore a website - I know that websites are written in HTML **LO: I can plan the features of a web page.** - I can draw a web page layout that suits my purpose - I can recognise the common features of a web page - I can suggest media to include on my page **LO: I can consider ownership and use of images (copyright).** - I can describe what is meant by the term 'fair use' - I can find copyright free images	**Unit:** Video Production **LO: I can recognise video as moving pictures which can include audio.** -I can explain that a video can include both visual and audio media -I can explain the benefits of adding audio to a video -I can plan a video project using a storyboard **LO: I can identify digital devices can record video.** -I can choose the most suitable digital device for recording my project -I can identify and name digital devices that can record video and sound -I can locate and identify the working features of a digital device that can record video

Progression of Computing Knowledge & Skills

		- I can create a picture in the style of an artist **LO: I can explain why I chose the tools I used** - I can choose appropriate paint tools and colours to recreate the work of an artist - I can use say which tools were helpful and why - I know that different paint tools do different jobs **LO: I can use a computer on my own to paint a picture.** - I can change the colour and brush sizes - I can make dots of colour on the page - I can use dots of colour to create pictures in the style of an artist on my own **LO: I can compare a painting a picture on a computer and on a paper.** - I can explain that pictures can be made in lots of different ways - I can say whether I prefer painting using a computer or using paper - I can spot the differences between painting on a computer and on paper	- I can discuss how to take a good photograph - I can identify what is wrong with a photograph - I can improve a photograph by retaking it **LO: I can decide how photographs can be improved.** - I can experiment with different light sources - I can explore the effect that light has on a photo - I can focus on an object **LO: I can use tools to change an image.** - I can explain my choices - I can recognise that images can be changed - I can use a tool to achieve a desired effect **LO: I can recognise that images can be changed.** - I can apply a range of photography skills to capture a photo - I can identify which images are real and which have been changed - I can recognise which images have been changed	I- can define the term 'page orientation' - I can recognise placeholders and say why they are important - I can create a template for a particular purpose **LO: I can choose appropriate page settings** I- can define the term 'page orientation' - I can recognise placeholders and say why they are important - I can create a template for a particular purpose **LO: I can consider how different layouts can suit different purposes** - I can identify different layouts - I can match a layout to a purpose - I can choose a suitable layout for a given purpose **LO: I can consider the benefits of desktop publishing** - I can identify the uses of desktop publishing in the real world - I can say why desktop publishing might be helpful - I can compare work made on desktop	-I can add to the composition of an image by cloning -I can identify how a photo edit can be improved -I can remove parts of an image using cloning **LO: To explain that images can be combined** -I can experiment with tools to select and copy part of an image - I can use a range of tools to copy between images -I can explain why photos might be edited **LO: I can combine images for a purpose** -I can describe the image I want to create -I can choose suitable images for my project -I can create a project that is a combination of other images LO: I can evaluate how changes can improve an image -I can review images against a given criteria - I can use feedback to guide making changes - I can combine text and my image to complete the project	- I can say why I should use copyright free images **LO: I can recognise the need to preview pages.** - I can add content to my own web page - I can evaluate what my web page looks like on different devices and suggest/make edits - I can preview what my web page looks like **LO: I can outline the need for a navigation path.** - I can describe why navigation paths are useful - I can explain what a navigation path is - I can make multiple web pages and link them using hyperlinks **LO: I can recognise the implications of linking to content owned by other people.** - I can create hyperlinks to link to other people's work - I can evaluate the user experience of a website - I can explain the implication of linking to content owned by others	**LO: I can capture video using a digital device.** -I can demonstrate suitable methods of using a digital device to capture my video -I can demonstrate the safe use and handling of devices -I can select a suitable device and software to capture my video **LO: I can recognise the features of an effective video** -I can explain why lighting and angle are important in creating an effective video -I can list some of the features of an effective video -I can record a video that demonstrates some of the features of an effective video **LO: I can identify that video can be improved reshooting and editing** -I can explain how to improve a video by reshooting and editing -I can select the correct tools to make edits to my video -I can store, retrieve, and export my recording to a computer **LO: I can consider the impact of the choices**

Progression of Computing Knowledge & Skills

				publishing to work created by hand **Unit:** Audio Production **LO: I can identify that sound can be digitally recorded.** -I can identify digital devices that can record sound and play it back -I can identify the inputs and outputs required to play audio or record sound -I can recognise the range of sounds that can be recorded **LO: I can use digital device to record sound.** -I can discuss what other people include when recording sound for a podcast -I can suggest how to improve my recording -I can use a device to record audio and play back sound **LO: I can explain that a digital recording is stored as a file.** -I can discuss why it is useful to be able to save digital recordings -I can plan and write the content for a podcast -I can save a digital recording as a file	**Unit:** Stop-frame Animation **LO: I can explain that animation is a sequence of drawings or photographs.** - I can create an effective flip book animation - I can draw a sequence of pictures - I can explain how an animation/flip book works **LO: I can relate animated movement with a sequence of images.** - I can create an effective stop-frame animation - I can explain why little changes are needed for each frame - I can predict what an animation will look like **LO: I can plan an animation.** - I can break down a story into setting, characters and events - I can create a story board - I can describe an animation that is achievable on screen **LO: I can identify the need to work consistently and carefully.**		**made when making and sharing a video.** -I can evaluate my video and share my opinions -I can make edits to my video and improve the final outcome -I can recognise that my choices when making a video will impact on the quality of the final outcome

Progression of Computing Knowledge & Skills

				LO: I can explain that audio can be changed through editing. -I can discuss ways in which audio recordings can be altered -I can edit sections of an audio recording -I can open a digital recording from a file **LO: I can show that different types of audio can be combined and played together.** -I can choose suitable sounds to include in a podcast -I can discuss sounds that other people combine -I can use editing tools to arrange sections of audio	- I can evaluate the quality of my animation - I can review a sequence of frames to check my work - I can onion skinning to help me make small changes between frames **LO: I can review and improve an animation.** - I can evaluate another learner's animation - I can explain ways to make my animation better - I can improve my animation based on feedback **LO: I can evaluate the impact of adding other media to an animation.** -I can add other media to my animation -I can evaluate my final film -I can explain why I added other media to my animation		
	EYFS	**Year 1/2 Cycle A**	**Year 1/2 Cycle B**	**Year 3/4 Cycle A**	**Year 3/4 Cycle B** / **Year 4/5 Cycle A**	**Year 4/5 Cycle B** / **Year 5/6 Cycle A**	**Year 5/6 Cycle B**
Programming A	Explore a variety of controlled and programmable devices. Explore simple simulations, finding out what happened.	**Unit:** Moving a robot **LO: I can explain what a given command will do.** - I can match a command to an outcome	See Programming B	**Unit:** Sequencing Sounds **LO I can explore a new programming environment.**	**Unit:** Repetition in Shapes **LO: I can identify that accuracy in programming is important.**	**Unit:** Variables in Games **LO: I can define a 'variable' as something that is changeable.** - I can explain that the way that a variable	**Unit:** Selection in Physical Computing **LO: I can control a simple circuit connected to the computer.**

Progression of Computing Knowledge & Skills

	Discuss what happens when a floor robot is controlled.	- I can predict the outcome of a command on a device - I can run a command on a device **LO: I can act out a given word.** - I can follow an instruction - I can give directions - I can recall words that can be acted out **LO: I can combine forwards and backwards commands to make a sequence**. - I can compare forwards and backwards movements - I can predict the outcome of a sequence involving forwards and backwards commands - I can start a sequence from the same place **LO: I can combine four directions commands to make sequences.** - I can compare left and right turns - I can experiment with turn and move commands to move a robot - I can predict the outcome of a sequence involving up to four commands **LO: I can plan a simple program.**		-I can explain that objects in Scratch have attributes -I can identify the objects in Scratch project (sprites and backdrops) -I can recognise that commands in Scratch are represented as blocks **LO: I can identify that each sprite is controlled by the commands I choose.** -I can choose a word which describes an on-screen action for my design -I can create a program following a design -I can identify that each sprite is controlled by the commands I choose **LO: I can explain that a program has a start.** -I can create a sequence of connected commands -I can explain that the objects in my project will respond exactly to the code -I can start a program in different ways **LO: I can recognise that a sequence of commands can have an order.**	-I can create a code snippet for a given purpose -I can explain the effect of changing a value of a command -I can program a computer by typing commands **LO: I can create a program in a text-based language.** -I can test my algorithm in a text-based language -I can use a template to create a design for my program -I can write an algorithm to produce a given outcome **LO: I can explain what 'repeat' means.** -I can identify everyday tasks that include repetition as part of a sequence e.g. brushing teeth, dance moves -I can identify patterns in a sequence e.g. step 3 times means the same as step, step, step -I can use a count-controlled loop to produce a given outcome **LO: I can modify a count-controlled loop to produce a given outcome.**	changes can be defined - I can identify examples of information that is variable - I can identify that variables can hold numbers or letters **LO: I can explain why a variable is used in a program.** - I can explain that a variable has a name and a value - I can identify a program variable as a placeholder in memory for a single value - I can recognise that the value of a variable can be changed **LO: I can choose how to improve a game by using variables.** - I can decide where in a program to change a variable - I can make use of an event in a program to set a variable - I can recognise that the value of a variable can be used by a program **LO: I can design a project that builds on a given example.** - I can choose the artwork for my project	-I can build a simple circuit to connect a microcontroller to a computer -I can explain why I used an infinite loop -I can program a microcontroller to light an LED **LO: I can write a program that includes count-controlled loops.** -I can connect more than one output device to a microcontroller -I can decide which input devices I control with a count-controlled loop -I can design sequences for given output devices **LO: I can explain that a loop can stop when a condition is met.** -I can experiment with a 'do until' loop -I can explain that a condition is something that can either be true or false -I can program a microcontroller to respond to an input **LO: I can conclude that a loop can be used to repeatedly check whether a condition has been met.**

Progression of Computing Knowledge & Skills

		- I can choose the order of commands in a sequence - I can debug my program - I can explain what my program should do **LO: I can find more than one solution to a problem.** - I can identify several possible solutions - I can plan two programs - I can use two different programs to get to the same place **Unit:** Robot Algorithms **LO: I can describe a series of instructions as a sequence.** - I can choose a series of words that can be enacted as a sequence - I can follow instructions given by someone else - I can give clear and unambiguous instructions **LO: I can explain what happens when we change the order of instructions.** - I can create different algorithms for a range of sequences (using the same commands) - I can show the difference in outcomes between two sequences		-I can combine sound commands -I can explain what a sequence is -I can order notes into a sequence **LO: I can change the appearance of my project.** -I can build a sequence of commands -I can describe the actions for each sprite in a program -I can make my design choices for my artwork **LO: I can create a project from a task description.** -I can identify and name the objects I will need for a project -I can implement my algorithm as a code -I can relate a task description to a design	-I can choose which values to change in a loop -I can identify the effect of changing the number of times a task is repeated -I can predict the outcome of a program containing a count-controlled loop **LO: I can decompose a program into parts.** -I can explain that a computer can repeatedly call a procedure -I can identify 'chunks' of actions in the real world -I can use a procedure in a program **LO: I can create a program that uses count-controlled loops to produce a given outcome.** -I can design a program that includes count-controlled loops -I can develop my program by debugging it -I can make use of my design to write a program	- I can create algorithms for my project - I can explain my design choices **LO: I can use my design to create a project.** - I can choose a name that identifies the role of a variable - I can create the artwork for my project - I can test the code that I have written **LO: I can evaluate my project.** - I can extend my game further using more variables - I can identify ways that my game could be improved - I can share my game with others	-I can explain that a condition being met can start an action -I can identify a condition and an action in my project -I can use selection to direct the flow of a program **LO: I can design a physical project that includes selection.** -I can create a detailed drawing of my project -I can describe what my project will do -I can identify a condition to start an action **LO: I can create a controllable system that includes selection.** -I can test and debug my project -I can use selection to produce an intended outcome -I can write an algorithm to control lights and a motor

		that consist of the same commands - I can use an algorithm to program a sequence on a floor robot **LO: I can use logical reasoning to predict the outcome of a program (series of commands).** - I can compare my prediction to the program outcome - I can follow a sequence - I can predict the outcome of a sequence **LO: I can explain that programming projects can have code and artwork.** - I can explain the choices I made for my mat design - I can identify different routes around my mat - I can test my mat to make sure that it is usable **LO: I can design an algorithm.** - I can create an algorithm to meet my goal - I can explain what my algorithm should achieve - I can use my algorithm to create a program **LO: I can create and debug a program that I have written.**					

Progression of Computing Knowledge & Skills

		- I can plan algorithms for different parts of a task - I can put together the different parts of my program - I can test and debug each part of the program						
	EYFS	**Year 1/2 Cycle A**	**Year 1/2 Cycle B**	**Year 3/4 Cycle A**	**Year 3/4 Cycle B**	**Year 4/5 Cycle A**	**Year 4/5 Cycle B**	**Year 5/6 Cycle A**	**Year 5/6 Cycle B**
Programming B	Explore a variety of controlled and programmable devices. Explore simple simulations, finding out what happened. Discuss what happens when a floor robot is controlled.	See Programming A	**Unit**: Programming Animations **LO: I can choose a command for a given purpose** - I can find which commands to move a sprite - I can use commands to move a sprite - I can compare different programming tools **LO: I can show that a series of commands can be joined together** - I can use more than one block by joining them together - I can use a Start block in a program - I can run my program **LO: I can show that a series of commands can be joined together** - I can use more than one block by joining them together	**Unit**: Events and Actions in Programs **LO: I can explain how a sprite moves in an existing project** - I can explain the relationship between an event and an action - I can choose which keys to use for actions and explain my choices - I can identify a way to improve a program **LO: I can create a program to move a sprite in four directions** - I can choose a character for my project - I can choose a suitable size for a character in a maze - I can program movement **LO: I can adapt a program to a new context**	**Unit**: Repetition in Games LO: I can develop the use of count-controlled loops in a different programming environment - I can list an everyday task as a set of instructions including repetition - I can predict the outcome of a snippet of code - I can modify a snippet of code to create a given outcome **LO: I can explain that in programming there are infinite loops and count controlled loops** - I can modify loops to produce a given outcome - I can choose when to use a count-controlled and an infinite loop - I can recognise that some programming languages enable more		**Unit**: Sensing Movement **LO: I can create a program to run on a controllable device** - I can apply my knowledge of programming to a new environment - I can test my program on an emulator - I can transfer my program to a controllable device **LO: I can explain that selection can control the flow of a program** - I can identify examples of conditions in the real world - I can use a variable in an if, then, else statement to select the flow of a program - I can determine the flow of a program using selection **LO: I can update a variable with a user input**		**Unit**: Selection in Quizzes **LO: I can explain how selection is used in computer programs** - I can recall how conditions are used in selection - I can identify conditions in a program - I can modify a condition in a program **LO: I can relate that a conditional statement connects a condition to an outcome** - I can use selection in an infinite loop to check a condition - I can identify the condition and outcomes in an 'if... then… else...' statement - I can create a program with different outcomes using selection **LO: I can explain how selection directs the flow of a program**

Progression of Computing Knowledge & Skills

			- I can use a Start block in a program - I can run my program **LO: I can identify the effect of changing a value** - I can find blocks that have numbers - I can change the value - I can say what happens when I change a value **LO: I can explain that each sprite has its own instructions** - I can show that a project can include more than one sprite - I can delete a sprite - I can add blocks to each of my sprites **LO: I can design the parts of a project** - I can choose appropriate artwork for my project - I can decide how each sprite will move - I can create an algorithm for each sprite **LO: I can use my algorithm to create a program** - I can use sprites that match my design	- I can use a programming extension - I can consider the real world when making design choices - I can choose blocks to set up my program **LO: I can develop my program by adding features** - I can identify additional features (from a given set of blocks) - I can choose suitable keys to turn on additional features - I can build more sequences of commands to make my design work **LO: I can identify and fix bugs in a program** - I can test a program against a given design - I can match a piece of code to an outcome - I can modify a program using a design **LO: I can design and create a maze-based challenge** - I can make design choices and justify them - I can implement my design - I can evaluate my project	than one process to be run at once **LO: I can develop a design that includes two or more loops which run at the same time** - I can choose which action will be repeated for each object - I can explain what the outcome of the repeated action should be - I can evaluate the effectiveness of the repeated sequences used in my program **LO: I can modify an infinite loop in a given program** - I can identify which parts of a loop can be changed - I can explain the effect of my changes - I can re-use existing code snippets on new sprites **LO: I can design a project that includes repetition** - I can evaluate the use of repetition in a project - I can select key parts of a given project to use in my own design - I can develop my own design explaining what my project will do	- I can use a condition to change a variable - I can experiment with different physical inputs - I can explain that checking a variable doesn't change its value **LO: I can use a conditional statement to compare a variable to a value** - I can use an operand (e.g. <>=) in an if, then statement - I can explain the importance of the order of conditions in else, if statements - I can modify a program to achieve a different outcome **LO: I can design a project that uses inputs and outputs on a controllable device** - I can decide what variables to include in a project - I can design the algorithm for my project - I can design the program flow for my project **LO: I can develop a program to use inputs and outputs on a controllable device**	- I can explain that program flow can branch according to a condition - I can design the flow of a program which contains 'if… then… else…' - I can show that a condition can direct program flow in one of two ways **LO: I can design a program which uses selection** - I can outline a given task - I can use a design format to outline my project - I can identify the outcome of user input in an algorithm **LO: I can create a program which uses selection** - I can implement my algorithm to create the first section of my program - I can test my program - I can share my program with others **LO: I can evaluate my program** - I can identify ways the program could be improved

Progression of Computing Knowledge & Skills

			- I can add programming blocks based on my algorithm - I can test the programs I have created **Unit**: Programming Quizzes **LO: I can explain that a sequence of** commands has a start - I can identify the start of a sequence - I can identify that a program needs to be started - I can show how to run my program **LO: I can explain that a sequence of commands has an outcome** - I can predict the outcome of a sequence of commands - I can match two sequences with the same outcome - I can change the outcome of a sequence of commands **LO: I can create a program using a given design** - I can work out the actions of a sprite in an algorithm		**LO: I can create a project that includes repetition** - I can refine the algorithm in my design - I can build a program that follows my design - I can evaluate the steps I followed when building my project	- I can create a program based on my design - I can test my program against my design - I can use a range of approaches to find and fix bugs	- I can identify the setup code I need in my program - I can extend my program further

Progression of Computing Knowledge & Skills

			- I can decide which blocks to use to meet the design - I can build the sequences of blocks I need **LO: I can change a given design** - I can choose backgrounds for the design - I can choose characters for the design - I can create a program based on the new design **LO: I can create a program using my own design** - I can choose the images for my own design - I can create an algorithm - I can build sequences of blocks to match my design **LO: I can decide how my project can be improved** - I can compare my project to my design - I can improve my project by adding features - I can debug my program						
	EYFS	**Year 1/2 Cycle A**	**Year 1/2 Cycle B**	**Year 3/4 Cycle A**	**Year 3/4 Cycle B**	**Year 4/5 Cycle A**	**Year 4/5 Cycle B**	**Year 5/6 Cycle A**	**Year 5/6 Cycle B**

Progression of Computing Knowledge & Skills

Data and information	Begin to sort, classify or group various objects progressing from practical activities to the use of computing e.g., practically sorting fruit into colours, types or shapes, and then on-screen. Use technology to sort and sequence objects on a screen or interactive whiteboard. Produce simple pictograms with help.	**Unit**: Grouping Data **LO: I can label objects** - I can describe objects using labels - I can match objects to groups - I can identify the label for a group of objects **LO: I can identify that objects can be counted** - I can count objects - I can group objects - I can count a group of objects **LO: I can describe objects in different ways** - I can describe an object - I can describe a property of an object - I can find objects with similar properties **LO: I can count objects with the same properties** - I can group similar objects - I can group objects in more than one way - I can count how many objects share a property **LO: I can compare groups of objects** - I can choose how to group objects - I can describe groups of objects - I can record how many objects are in a group	**Unit**: Pictograms **LO: I can recognise that we can count and compare objects using tally charts** - I can record data in a tally chart - I can represent a tally count as a total - I can compare totals in a tally chart **LO: I can recognise that objects can be represented as pictures** - I can enter data onto a computer - I can use a computer to view data in a different format - I can use pictograms to answer simple questions about objects **LO: I can create a pictogram** - I can organise data in a tally chart - I can use a tally chart to create a pictogram - I can explain what the pictogram shows **LO: I can select objects by attribute and make comparisons** - I can tally objects using a common attribute - I can create a pictogram to arrange objects by an attribute	**Unit**: Data Logging **LO: I can explain that data gathered over time can be used to answer questions** - I can choose a data set to answer a given question - I can suggest questions that can be answered using a given data set - I can identify data that can be gathered over time **LO: I can use a digital device to collect data automatically** - I can explain what data can be collected using sensors - I can use data from a sensor to answer a given question - I can identify that data from sensors can be recorded **LO: I can explain that a data logger collects 'data points' from sensors over time** - I can recognise that a data logger collects data at given points - I can identify the intervals used to collect data - I can talk about the data that I have captured	**Unit**: Branching Databases **LO: I can create questions with yes/no answers** - I can investigate questions with yes/no answers - I can make up a yes/no question about a collection of objects - I can create two groups of objects separated by one attribute **LO: I can identify the attributes needed to collect data about an object** - I can select an attribute to separate objects into groups - I can create a group of objects within an existing group - I can arrange objects into a tree structure **LO: I can create a branching database** - I can select objects to arrange in a branching database - I can group objects using my own yes/no questions - I can test my branching database to see if it works	**Unit**: Flat-File Databases **LO: I can use a form to record information** - I can create a database using cards - I can explain how information can be recorded - I can order, sort, and group my data cards **LO: I can compare paper and computer-based databases** - I can explain what a field and a record is in a database - I can navigate a flat-file database to compare different views of information - I can choose which field to sort data by to answer a given question **LO: I can compare paper and computer-based databases** - I can explain what a field and a record is in a database - I can navigate a flat-file database to compare different views of information - I can choose which field to sort data by to answer a given question **LO: I can outline how you can answer questions by grouping and then sorting data**	**Unit**: Introduction to Spreadsheets **LO: I can create a data set in a spreadsheet** - I can collect data - I can suggest how to structure my data - I can enter data into a spreadsheet **LO: I can build a data set in a spreadsheet** - I can explain what an item of data is - I can choose an appropriate format for a cell - I can apply an appropriate format to a cell **LO: I can explain that formulas can be used to produce calculated data** - I can explain which data types can be used in calculations - I can construct a formula in a spreadsheet - I can identify that changing inputs changes outputs **LO: I can apply formulas to data** - I can calculate data using different operations

Progression of Computing Knowledge & Skills

		LO: I can answer questions about groups of objects - I can decide how to group objects to answer a question - I can compare groups of objects - I can record and share what I have found	- I can answer 'more than'/'less than' and 'most/least' questions about an attribute **LO: I can recognise that people can be described by attributes** - I can choose a suitable attribute to compare people - I can collect the data I need - I can create a pictogram and draw conclusions from it **LO: I can explain that we can present information using a computer** - I can use a computer program to present information in different ways - I can share what I have found out using a computer - I can give simple examples of why information should not be shared	**LO: I can recognise how a computer can help us analyse data** - I can view data at different levels of detail - I can sort data to find information - I can explain that there are different ways to view data **LO: I can identify the data needed to answer questions** - I can propose a question that can be answered using logged data - I can plan how to collect data using a data logger - I can use a data logger to collect data **LO: I can use data from sensors to answer questions** - I can interpret data that has been collected using a data logger - I can draw conclusions from the data that I have collected - I can explain the benefits of using a data logger	**LO: I can explain why it is helpful for a database to be well structured** - I can create yes/no questions using given attributes - I can compare two branching database structures - I can explain that questions need to be ordered carefully to split objects into similarly sized groups **LO: I can plan the structure of a branching database** - I can independently create questions to use in a branching database - I can create questions that will enable objects to be uniquely identified - I can create a physical version of a branching database **LO: I can independently create an identification tool** - I can create a branching database that reflects my plan - I can work with a partner to test my identification tool - I can suggest real-world uses for branching databases	- I can explain that data can be grouped using chosen values - I can group information using a database - I can combine grouping and sorting to answer specific questions **LO: I can explain that tools can be used to select specific data** - I can choose which field and value are required to answer a given question - I can outline how 'AND' and 'OR' can be used to refine data selection - I can choose multiple criteria to answer a given question **LO: I can explain that computer programs can be used to compare data visually** - I can select an appropriate chart to visually compare data - I can refine a chart by selecting a particular filter - I can explain the benefits of using a computer to create charts **LO: I can use a real-world database to answer questions**	- I can create a formula which includes a range of cells - I can apply a formula to multiple cells by duplicating it **LO: I can create a spreadsheet to plan an event** - I can use a spreadsheet to answer questions - I can explain why data should be organised - I can apply a formula to calculate the data I need to answer questions **LO: I can choose suitable ways to present data** - I can produce a chart - I can use a chart to show the answer to questions - I can suggest when to use a table or chart

Progression of Computing Knowledge & Skills

						- I can ask questions that will need more than one field to answer - I can refine a search in a real-world context - I can present my findings to a group	