Subject Progression

Name of subject: Computing

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing systems and networks	**Personal, Social and Emotional Development** Remember rules without needing an adult to remind them. Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health and wellbeing: - sensible amounts of 'screen time'. Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Explain the reasons for rules, know right from wrong and try to behave accordingly. **Understanding the world** Explore how things work. **Physical development** Match their developing physical skills to tasks	I can explain technology as something that helps us I can locate examples of technology in the classroom I can explain how these technology examples help us 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 I can use a mouse to open a program I can click and drag to make objects on a screen I can use a mouse to create a picture I can say what a keyboard is for	I can identify examples of computers I can describe some uses of computers I can identify that a computer is a part of information technology I can explain the purpose of information technology in the home I can open a file I can move and resize images I can find examples of information technology I can talk about uses of information technology I can compare types of information technology	I can explain that digital devices accept inputs I can explain that digital devices produce outputs I can follow a process I can classify input and output devices I can model a simple process I can design a digital device I can explain how I use digital devices for different activities I can recognise similarities between using digital devices and non-digital tools I can suggest differences between using digital devices and non-digital tools	I can describe the internet as a network of networks I can demonstrate how information is shared across the internet I can discuss why a network needs protecting 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 the part of the internet that contains websites and web pages I can explain the types of media that can be shared	I can explain that systems are built using a number of parts I can describe that a computer system features inputs, processes, and outputs I can explain that computer systems communicate with other devices I can identify tasks that are managed by computer systems I can identify the human elements of a computer system I can explain the benefits of a given computer system I can recognise that data is transferred using agreed methods	I can complete a web search to find specific information I can refine my search I can compare results from different search engines 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 I can explain that search results are ordered I can explain that a search engine follows rules to

	and activities in the setting. Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	I can type my name on a computer I can save my work to a file I can open my work from a file I can use the arrow keys to move the cursor I can delete letters I can identify rules to keep us safe and healthy when we are using technology in and beyond the home I can give examples of some of these rules I can discuss how we benefit from these rules	I can demonstrate how information technology is used in a shop I can recognise that information technology can be connected I can explain how information technology helps people 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 I can identify the choices that I make when using information technology I can explain simple guidance for using information technology in different	I can recognise different connections I can explain how messages are passed through multiple connections I can discuss why we need a network switch I can recognise that a computer network is made up of a number of devices 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 identify how devices in a network are connected with one another I can identify networked devices around me I can identify the benefits of	on the World Wide Web (WWW) I can describe where websites are stored when uploaded to the WWW I can describe how to access websites on the WWW I can create media which can be found on websites I can recognise that I can add content to the WWW I can explain that new content can be created online I can explain that websites and their content are created by people I can suggest who owns the content on websites I can explain that there are rules to protect content I can explain that not everything on the World Wide Web is true.	I can explain that networked digital devices have unique addresses I can explain that data is transferred over networks in packets 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 I can explain that the internet allows different media to be shared I can suggest strategies to ensure successful group work I can make thoughtful suggestions on my group's work I can compare working online with working offline I can identify different ways of	rank relevant pages I can suggest some of the criteria that a search engine checks to decide on the order of results I can describe some of the ways that search results can be influenced I can recognise some of the limitations of search engines I can explain how search engines make money 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 I can choose methods of communication to suit particular purposes I can compare different methods

			environments and settings I can enjoy a variety of activities	computer networks	I can explain why some information I find online may not be honest, accurate, or legal. I can explain why I need to think carefully before I share or re share content	working together online I can recognise that working together on the internet can be public or private I can explain how the internet enables effective collaboration	of communicating on the internet I can decide when I should and should not share I can explain that communication on the internet may not be private
Creating media		I can make marks on a screen and explain which tools I used I can draw lines on a screen and explain which tools I used I can use the paint tools to draw a picture 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 I can choose appropriate shapes	I can recognise what devices can be used to take photographs I can talk about how to take a photograph I can explain what I did to capture a digital photo I can explain the process of taking a good photograph I can take photos in both landscape and portrait format I can explain why a photo looks better in portrait or landscape format I can identify what is wrong with a photograph	I can draw a sequence of pictures I can create an effective flip book—style animation I can explain how an animation/flip book works I can predict what an animation will look like I can explain why little changes are needed for each frame I can create an effective stop-frame animation I can break down a story into settings, characters and events	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 I can use a device to record audio and play back sound I can suggest how to improve my recording I can discuss what other people include when recording sound for a podcast	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 I can identify and name digital devices that can record video and sound I can choose the most suitable digital device for recording my project I can locate and identify the working features of a digital device that can record video	I can explore a website I can discuss the different types of media used on websites I know that websites are written in HTML I can recognise the common features of a web page I can suggest media to include on my page I can draw a web page layout that suits my purpose I can say why I should use copyright-free images

		I can make appropriate colour choices I can create a picture in the style of an artist I know that different paint tools do different jobs I can choose appropriate paint tools and colours to recreate the work of an artist I can say which tools were helpful and why I can make dots of colour on the page I can change the colour and brush sizes I can use dots of colour to create a picture in the style of an artist on my own I can explain that pictures can be made in lots of different ways I can spot the differences between painting	I can discuss how to take a good photograph I can improve a photograph by retaking it I can explore the effect that light has on a photo I can experiment with different light sources I can explain why a picture may be unclear I can recognise that images can be changed I can use a tool to achieve a desired effect I can explain my choices I can apply a range of photography skills to capture a photo I can recognise which photos have been changed I can identify which photos are real and which	I can describe an animation that is achievable on screen I can create a storyboard I can use onion skinning to help me make small changes between frames I can review a sequence of frames to check my work I can evaluate the quality of my animation I can explain ways to make my animation better I can evaluate another learner's animation I can improve my animation based on feedback I can add other media to my animation I can explain why I added other media to my animation	I can plan and write the content for a podcast I can discuss why it is useful to be able to save digital recordings I can save a digital recording as a file I can open a digital recording from a file I can discuss ways in which audio recordings can be altered I can edit sections of an audio recording I can discuss sounds that other people combine I can choose suitable sounds to include in a podcast I can use editing tools to arrange sections of audio I can explain that digital recordings need to be exported to share them	I can select a suitable device and software to capture my video 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 list some of the features of an effective video I can record a video that demonstrates some of the features of an effective video I can explain why lighting and angle are important in creating an effective video I can store, retrieve, and export my recording to a computer I can explain how to improve a video by reshooting and editing	I can find copyright-free images I can describe what is meant by the term 'fair use' I can add content to my own web page I can preview what my web page looks like I can evaluate what my web page looks like on different devices and suggest/make edits. I can explain what a navigation path is I can describe why navigation paths are useful I can make multiple web pages and link them using hyperlinks I can explain the implication of linking to content owned by others I can create hyperlinks to link

		on a computer and on paper I can say whether I prefer painting using a computer or using paper	have been changed	I can evaluate my final film	I can discuss the features of a digital recording I like I can suggest improvements to a digital recording	I can select the correct tools to make edits to my video 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 I can evaluate my video and share my opinions	to other people's work I can evaluate the user experience of a website
Data and information		I can describe objects using labels I can match objects to groups I can identify the label for a group of objects I can count objects I can group objects I can count a group of objects I can describe an object	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 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	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 I can select an attribute to separate objects into groups I can create a group of objects within an existing group	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 I can explain that sensors are input devices I can use data from a sensor to answer a given question	I can create multiple questions about the same field I can explain how information can be recorded I can order, sort, and group my data cards I can navigate a flat-file database to compare different views of information I can explain what a 'field' and a 'record' is in a database	I can explain the relevance of data headings I can answer questions from an existing data set I can ask simple relevant questions which can be answered using data I can explain what an item of data is I can apply an appropriate number format to a cell

		I can describe a property of an object I can find objects with similar properties I can group similar objects I can group objects in more than one way I can count how many objects share a property I can choose how to group objects I can describe groups of objects I can record how many objects are in a group 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	questions about objects 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 I can tally objects using a common attribute I can create a pictogram to arrange objects by an attribute I can answer 'more than'/'less than' and 'most/least' questions about an attribute 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 I can use a computer program to present	I can arrange objects into a tree structure I can select objects to arrange in a branching database I can group objects using my own yes/no questions I can prove my branching database works I can create yes/no questions using given attributes I can explain that questions need to be ordered carefully to split objects into similarly sized groups I can compare two branching database structures I can select a theme and choose a variety of objects I can create questions and apply them to a tree structure	I can identify that data from sensors can be recorded I can identify a suitable place to collect data I can identify the intervals used to collect data I can talk about the data that I have captured I can import a data set I can use a computer to view data in different ways I can use a computer program to sort data 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 I can interpret data that has been collected using a data logger	I can choose which field to sort data by to answer a given question I can explain how information can be grouped I can group information to answer questions I can combine grouping and sorting to answer more specific questions 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 I can select an appropriate chart to visually compare data I can refine a chart by selecting a particular filter	I can build a data set in a spreadsheet application I can explain the relevance of a cell's data type I can construct a formula in a spreadsheet I can identify that changing inputs changes outputs I can recognise that data can be calculated using different operations I can create a formula which includes a range of cells I can apply a formula to multiple cells by duplicating it 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

			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	I can use my branching database to answer questions I can explain what a pictogram tells me I can explain what a branching database tells me I can compare two ways of presenting information	I can draw conclusions from the data that I have collected I can explain the benefits of using a data logger	I can explain the benefits of using a computer to create graphs 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	need to answer questions I can produce a graph I can use a graph to show the answer to questions I can suggest when to use a table or graph
Programming		I can find the commands to move a sprite I can use commands to move a sprite I can compare different programming tools 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 I can find blocks that have numbers	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 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 I can work out the actions of a sprite in an algorithm	I can identify the objects in a Scratch project (sprites, backdrops) I can explain that objects in Scratch have attributes (linked to) I can recognise that commands in Scratch are represented as blocks I can identify that each sprite is controlled by the commands I choose I can choose a word which describes an on-	I can program a computer by typing commands I can explain the effect of changing a value of a command I can create a code snippet for a given purpose I can use a template to draw what I want my program to do I can write an algorithm to produce a given outcome I can test my algorithm in a text-based language	I can build a simple circuit to connect a microcontroller to a computer I can program a microcontroller to light an LED I can explain why I used an infinite loop I can connect more than one output device to a microcontroller I can design sequences for given output devices I can decide which output devices I	I can identify examples of information that is variable I can explain that the way that a variable change can be defined I can identify that variables can hold numbers or letters I can identify a program variable as a placeholder in memory for a single value I can explain that a variable has a name and a value I can recognise that the value of a

		I can change the value I can say what happens when I change a value 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 I can choose appropriate artwork for my project I can decide how each sprite will move I can create an algorithm for each sprite I can use sprites that match my design I can add programming blocks based on my algorithm I can test the programs I have created	I can decide which blocks to use to meet the design I can build the sequences of blocks I need I can choose backgrounds for the design I can choose characters for the design I can create a program based on the new 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 I can compare my project to my design I can improve my project by adding features I can debug	screen action for my design I can create a program following a design I can start a program in different ways 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 explain what a sequence is I can combine sound commands I can order notes into a sequence I can build a sequence of commands I can decide the actions for each sprite in a program I can make design choices for my artwork I can identify and name the objects I	I can identify repetition in everyday tasks I can identify patterns in a sequence I can use a count-controlled loop to produce a given outcome 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 I can choose which values to change in a loop I can identify 'chunks' of actions in the real world I can use a procedure in a program I can explain that a computer can repeatedly call a procedure	control with a count controlled loop I can explain that a condition is something that can be either true or false (eg whether a value is more than 10, or whether a button has been pressed) I can experiment with a 'do until' loop I can program a microcontroller to respond to an input 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 (an 'if… then…' statement) to direct the flow of a program I can identify a condition to start an action (real world)	variable can be changed 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 I can choose the artwork for my project I can explain my design choices I can create algorithms for my project I can create the artwork for my project I can choose a name that identifies the role of a variable I can test the code that I have written I can identify ways that my game could be improved

				will need for a project I can relate a task description to a design I can implement my algorithm as code	I can design a program that includes count-controlled loops I can make use of my design to write a program I can develop my program by debugging it	I can describe what my project will do (the task) I can create a detailed drawing of my project I can write an algorithm to control lights and a motor I can use selection to produce an intended outcome I can test and debug my project	I can extend my game further using more variables I can share my game with others