



Computing Systems and Networks		
	Skills	Knowledge
EYFS	- Choose a piece of technology to do a job - Identify the main parts of a computer - Use a keyboard to type their name on a computer - Turn on the computer and log on with an aid - Use a mouse in different ways – click, select and drag - Use the keyboard to edit text and delete letters - Demonstrate that they can use technology safely	- Identify examples of technology and explain how they can help us - Recognise that a computer is an example of technology - Describe what a keyboard is for - Know a computer stores work in files - Give examples of rules to keep them safe and healthy when they are using technology in and beyond the home
Year1/2	- Describe some uses of computers - Identify information technology in school - Identify information technology beyond school - Show how to use information technology safely	- Recognise different types of computer used in school - Identify that a computer is a part of information technology - Recognise the features of information technology - Talk about uses of information technology - Say how rules for using information technology can help us - Explain how information technology benefits us - Recognise that choices are made when using information technology
Year 3/4	Consolidation of Year 1/2 skills	- Describe how networks connect to other networks - Outline how information can be shared via the World Wide Web - Recognise that the World Wide Web is part of the internet - Explain that the global interconnection of networks is the internet - Recognise the need for security on the internet - Describe how to access the World Wide Web - Describe the types of content/media that can be added, created and shared on the World Wide Web - Explain how the content of the World Wide Web is created, owned and shared by people.



		- To explain that the internet enables us to view the World Wide Web - Explain that the World Wide Web comprises of websites and web pages - Describe the current limitations of World Wide Web media - Evaluate the reliability of content and consequences of unreliable content - Explain the benefits of the World Wide Web
Year 5/6	- Describe the input and output of a search engine - Demonstrate that different search terms produce different results - Evaluate the results of search terms	- Recognise that a system is a set of interconnected parts which work together - Explain that computers can be connected together to form IT systems - Identify that data can be transferred between IT systems - Recognise inputs, processes and outputs in large IT systems - Describe the role of a particular IT system in their lives - Relate that search engines are examples of large IT systems - Explain why search engines create indices, and that they are different for each search engine - Explain the role of web crawlers in creating an index - Explain how search results are selected - Explain that ranking orders search results to make them more useful - Explain how ranking is determined by rules, and that different search engines use different rules - Explain why the order of results is important and to whom - Explain how search engines make money by selling targeted advertising space - Identify some of the limitations of search engines
Creating Media		
	Skills	Knowledge
EYFS	- Choose appropriate paint tools to recreate a picture - Use freehand tools, changing the colour and brush size - Use shape and line tools for precision, changing the size, shape and colour	- Explain what different freehand tools do - Recognise that computers can be used to create a range of art - Recognise a tool can be adjusted



	• Use the undo button to correct mistakes • Use the fill tool to colour an enclosed area	
Year1/2	• Take a photograph using a simple camera or device that has been set up in camera mode • Identify some of the reasons why a photograph may be good or bad • Experiment when taking photos with different light sources • Identify a photo that has been enhanced using tools when asked questions • use different tools to change how a photograph looks • Know that a keyboard is used to enter text into a computer • Know that the appearance of text can be changed	• Explain some aspects of taking a good photograph • Know that a photo can be portrait or landscape • Recognise some keys and use them to enter text on to a computer/device including some basic punctuation • Add spaces between most words using a space bar • Use the backspace key to delete text only as far as the section to be edited • Use the toolbar to find and use the bold, italic, and underline tool
Year 3/4	• Movement is smooth • The animation follows the storyboard • Make some improvements • Add some additional media • Select images and combine them into one • Use a range of tools to create their image • Add relevant text to their publication	• Explain the key requirements of the task • Storyboard has a clear beginning, middle and end. • Identify the types of image needed in relation to their chosen theme • Outline how the images will be used together • Suggest colours and effects that might suit their scene
Year 5/6	• Add and remove objects to create a drawing of a chosen artefact • Use copy and paste to maintain consistency within the drawing • Manipulate an object's size, colour, and proportion to represent a chosen artefact • Purposefully position and rotate objects • Move objects to different layers to create a specific aspect of a drawing	• Identify that a vector drawing comprises separate objects • Recognise that each object in a drawing is in its own layer • Explain how alignment and size guides can help create a more consistent drawing • Recognise that objects can be modified in groups • Recognise that vector images can be scaled without impact on quality • Consider the impact of choices made • Recognise the relationship between HTML and visual display • Recognise that web pages can contain different media types • Recognise that web pages are



	- Manipulate multiple objects concurrently Group objects to make them easier to work with - Review an existing website (navigation bars, header) - Create a new blank web page - Add text to a web page - Set the style of text on a web page - Change the appearance of text - Embed media in a web page - Add web pages to a website - Preview a web page (different screen sizes) - Insert hyperlinks between pages - Insert hyperlinks to another site	written by people - Recognise that a website is a set of hyperlinked web pages - Recognise components of a web page layout - Consider the ownership and use of images (copyright) - Recognise the need to preview pages (different screens/ devices) - Recognise the need for a navigation path - Recognise the implications of linking to content owned by others
Programming		
	Skills	Knowledge
EYFS	- Predict the outcome of a command on a device - Run a command on a floor robot - Choose a command for a given purpose - Choose a series of words that can be enacted as a program - Build a sequence of commands in steps from a given starting point - Combine commands in a program - Run a program on a device Debug a program to correct errors	- Explain what a given command does - Predict the outcome of a sequence involving up to four commands - Match a command to an outcome - Understand that a program is a set of commands that a computer can run Know that a series of instructions can be issued before they are enacted
Year1/2	- Predict the outcome of a command - List commands that can be used on a device - Match a command to an outcome - Recognise how to run a command	- Explain what a sprite is - Compare different programming blocks - Know a series of commands can be joined together to form a program - Understand that a program is a set of commands a computer can run - Understand a series of instructions



	• Run different commands for different sprites • Choose a command for a given purpose • Build a sequence of commands in steps • Use the start command to initialise a program • Debug a program • Follow sequences of instructions including moving forwards and backwards, and turning left and right. • Plan a series of instructions for someone else to follow • Plan a mat layout with several possible routes • Plan and execute a program to reach a goal and debug as needed	• Understand different algorithms by changing the sequence of commands • Predict what a sequence of commands will do
Year 3/4	• Relate what 'repeat' means • Identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves • Explain that we can use a loop command in a program to repeat instructions • Identify patterns in a sequence • Identify a loop within a program • Explain that in programming there are indefinite loops and count-controlled loops • Explain that an indefinite loop will run until the program is stopped • Explain that you can program a loop to stop after a specific number of times • Identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step' • Justify when to use a loop and when not to • Explain the importance of instruction order in a loop	• List an everyday task as a set of instructions including repetition • Use an indefinite loop to produce a given outcome • To use a count-controlled loop to produce a given outcome • Plan a program that includes appropriate loops to produce a given outcome • Recognise tools that enable more than one process to be run at the same time (currency) • Create two or more sequences that run at the same time



	Recognise that not all tools enable more than one process to be run at once.	
Year 5/6	- Choose a condition to use in a program - Create a condition-controlled loop - Use a condition in an 'if...then...' statement to start an action - Use selection to switch program flow - To use 'If...then... else...' to switch program flow in one of two ways	- Explain that a condition can only be true or false - To relate that a count-controlled loop contains a condition - Compare a count controlled loop with a condition-controlled loop - Explain that a condition-controlled loop will stop when a condition is met - Explain that when a condition is met a loop will complete a cycle before it stops - Explain that selection can be used to branch the flow of a program - Explain that a loop can be used to repeatedly check whether a condition has been met - Explain the importance of instruction order in 'if...then...else...' statement
Data and Information		
	Skills	Knowledge
EYFS		
Year1/2	- Show I can enter data onto a computer - Recognise that people, animals and objects can be described by attributes - Use a computer to view data in different formats - Use pictograms to answer single-attribute questions - Use a computer to answer comparison questions (graphs, tables)	- Use a tally chart to collect data - Compare objects that have been grouped by attribute - Suggest appropriate headings for tally charts and pictograms - Construct (complete) a given comparison question, e.g Are there more _____ balls than _____ balls? - Use a computer program to present information in different ways - Explain that we can present information using a computer



		● Give simple examples of why some information should not be shared
Year 3/4	● Create questions with yes/no answers ● Choose questions that will divide objects into evenly sized subgroups ● Repeatedly create subgroups of objects ● Identify an object using a branching database ● Retrieve information from different levels of the branching database	● Investigate questions with yes/no answers ● Identify attributes that you can ask yes/no questions about ● Select an attribute to separate objects into two similarly sized groups ● Explain that a branching database is an identification tool ● Recognise that a data set can be structured using yes/no questions ● Explain that a well-structured branching database will enable you to identify objects using fewer questions ● Relate two levels of a branching database using AND ● Suggest real-world applications for branching databases
Year 5/6	● Calculate data using a formula for each operation ● Use functions to create new data ● Use existing cells within a formula ● Choose suitable ways to present spreadsheet data	● Identify questions that can be answered using spreadsheet data ● Explain what an item of data is in a spreadsheet ● Outline that there are different software tools to work with data ● Explain how the data type determines how a spreadsheet can process the data ● Explain that formulas can be used to produce calculated data ● Recognise cells can be linked ● Explain why data should be organised in a spreadsheet ● Recognise that a cell's value automatically updates when the value in a linked cell is changed ● Evaluate results in comparison to the question asked