EYFS

It is important for EYFS to be aware of technology and the fact that you can use the computer to help and you can give instructions to make technology work. They should be introduced to this in nursery and then developed in Reception. Technology used in EYFS will include Beebots, IPads, playing games on the interactive board, remote controlled cars.

Nursery

- Be aware of devices that can be used to communicate with others

- Be aware to keep safe and tell their parents if they are worried about something.

- To know that devices have on and off switches.

- To know that if you press buttons they make things happen.

Reception

- To begin to use the mouse with control to make lines.
- To know how to give instructions to a machine to make it move (Beebot)
- To type their name to save or name their document

	COMPUTING SYSTEMS AND NETWORKS **Technology around us - Digital Literacy**	**CREATING MEDIA - IT**	**Digital Writing - IT**	**Data and Information - IT**	**Computer Science** PROGRAMMING A +B
Year 1	**To identify technology** ● Know how to explain technology as something that helps us ● Know how to locate examples of technology in the classroom ● Know how to explain how these technology examples help us **To identify a computer and its main parts** ● Know how to name the main parts of a computer • to switch on and log into a computer • to use a mouse to click and drag **To use a mouse in different ways** ● Know how to use a mouse to open a program ● Know how to click and drag to make objects on a screen ● Know how to use a mouse to create a picture	**To describe what different freehand tools do** ● Know how to make marks on a screen and explain which tools I used ● Know how to draw lines on a screen and explain which tools I used ● Know how to use the paint tools to draw a picture **To use the shape tool and the line tools** ● Know how to make marks with the square and line tools ● Know how to use the shape and line tools effectively ● Know how to use the shape and line tools to recreate the work of an artist **To make careful choices when painting a digital picture**	● Know how to open a word processor ● Know how to recognise keys on a keyboard ● Know how to identify and find keys on a keyboard **To add and remove text on a computer** ● Know how to enter text into a computer ● Know how to use letter, number, and Space keys ● Know how to use Backspace to remove text **To identify that the look of text can be changed on a computer** ● Know how to type capital letters ● Know how to explain what the keys	**To label objects** ● Know how to describe objects using labels ● Know how to match objects to groups ● Know how to identify the label for a group of objects **To identify that objects can be counted** ● Know how to count objects ● Know how to group objects ● Know how to count a group of objects **To describe objects in different ways** ● Know how to describe an object ● Know how to describe a	**To explain what a given command will do** ● Know how to predict the outcome of a command on a device ● Know how to match a command to an outcome ● Know how to run a command on a device **To act out a given word** ● Know how to follow an instruction ● Know how to recall words that can be acted out ● Know how to give directions **To combine 'forwards' and 'backwards' commands to make a sequence** ● Know how to compare forward and backward movements ● Know how to start a sequence from the same place ● Know how to predict the outcome of a sequence involving 'forwards' and 'backwards' commands

	To use a keyboard to type on a computer ● Know how to say what a keyboard is for ● Know how to type my name on a computer ● Know how to save my work to a file **To use the keyboard to edit text** ● Know how to open my work from a file ● Know how to use the arrow keys to move the cursor ● Know how to delete letters **To create rules for using technology responsibly** ● Know how to identify rules to keep us safe and healthy when we are using technology in and beyond the home ● Know how to give examples of some of these rules ● Know how to discuss how we benefit from these rules Technology, computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift,	● Know how to choose appropriate shapes ● Know how to make appropriate colour choices ● Know how to create a picture in the style of an artist **To explain why I chose the tools I used** ● Know how to explain that different paint tools do different jobs ● Know how to choose appropriate paint tools and colours to recreate the work of an artist ● Know how to say which tools were helpful and why **To use a computer on my own to paint a picture** ● Know how to make dots of colour on the page ● Know how to change the colour and brush sizes ● Know how to use dots of colour to create a	that I have already learnt about do ● Know how to identify the toolbar and use bold, italic, and underline **To make careful choices when changing text** ● Know how to select a word by double-clicking ● Know how to select all of the text by clicking and dragging ● Know how to change the font **To explain why I used the tools that I chose** ● Know how to say what tool I used to change the text ● Know how to decide if my changes have improved my writing ● Know how to use 'Undo' to remove changes **To compare typing on a computer to writing on paper**	property of an object ● Know how to find objects with similar properties **To count objects with the same properties** ● Know how to group similar objects ● Know how to group objects in more than one way ● Know how to count how many objects share a property **To compare groups of objects** ● Know how to choose how to group objects ● Know how to describe groups of objects ● Know how to record how many objects are in a group **To answer questions about groups of objects**	**To combine four direction commands to make sequences** ● Know how to compare left and right turns ● Know how to experiment with 'turn' and 'move' commands to move a robot ● Know how to predict the outcome of a sequence involving up to four commands **To plan a simple program** ● Know how to explain what my program should do ● Know how to choose the order of commands in a sequence ● Know how to debug my program **To find more than one solution to a problem** ● Know how to identify several possible solutions ● Know how to plan two programs ● Know how to use two different programs to get to the same place Programming – Introduction to Scratch Junior

	spacebar, capital letter, full stop, safely, responsibly	picture in the style of an artist on my own **To compare painting a picture on a computer and on paper** ● Know how to explain that pictures can be made in lots of different ways ● Know how to spot the differences between painting on a computer and on paper ● Know how to say whether I prefer painting using a computer or using paper Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, George Seurat, Pointillism, prefer, dislike, like	● Know how to make changes to text on a computer ● Know how to explain the differences between typing and writing ● Know how to say why I prefer typing or writing Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar	● Know how to decide how to group objects to answer a question ● Know how to compare groups of objects ● Know how to record and share what I have found Object, label, group, search, image, colour, shape, property, value, data set, less, most, fewest, the same	**To choose a command for a given purpose** ● Know how to find the commands to move a sprite ● Know how to use commands to move a sprite ● Know how to compare different programming tools **To show that a series of commands can be joined together** ● Know how to use more than one block by joining them together ● Know how to use a Start block in a program ● Know how to run my program **To identify the effect of changing a value** ● Know how to find blocks that have numbers ● Know how to change the value ● Know how to say what happens when I change a value **To explain that each sprite has its own instructions** ● Know how to show that a project can include more than one sprite ● Know how to delete a sprite

					● Know how to add blocks to each of my sprites **To design the parts of a project** ● Know how to choose appropriate artwork for my project ● Know how to decide how each sprite will move ● Know how to create an algorithm for each sprite **To use my algorithm to create a program** ● Know how to use sprites that match my design ● Know how to add programming blocks based on my algorithm ● Know how to test the programs I have created Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program Scratch Jr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block,

					instructions, appropriate, design
Year 2	**IT all around us**	**Creating Media – Making music**	**Creating Media - Taking digital Photographs**	**Data and Information – Creating pictograms**	**Programming A – Robot algorithms** **Programming B – An introduction to quizzes**
	To recognise the uses and features of information technology ● I know identify examples of computers ● I know describe some uses of computers ● I know identify that a computer is a part of IT To identify the uses of information technology in the school ● I know identify examples of IT ● I know sort school IT by what it's used for ● I know identify that some IT can be used in more than one way To identify information technology beyond school ● I know find examples of information technology	To say how music can make us feel ● I know identify simple differences in pieces of music ● I know describe music using adjectives ● I know say what I do and don't like about a piece of music To identify that there are patterns in music ● I know create a rhythm pattern ● I know play an instrument following a rhythm pattern ● I know explain that music is created and played by humans To experiment with sound using a computer	To use a digital device to take a photograph ● I know recognise what devices can be used to take photographs ● I know talk about how to take a photograph ● I know explain what I did to capture a digital photo To make choices when taking a photograph ● I know explain the process of taking a good photograph ● I know take photos in both landscape and portrait format ● I know explain why a photo looks	To recognise that we can count and compare objects using tally charts ● I know record data in a tally chart ● I know represent a tally count as a total ● I know compare totals in a tally chart To recognise that objects can be represented as pictures ● I know enter data onto a computer ● I know use a computer to view	To describe a series of instructions as a sequence ● I know follow instructions given by someone else ● I know choose a series of words that can be acted out as a sequence ● I know give clear instructions To explain what happens when we change the order of instructions ● I know use the same instructions to create different algorithms ● I know use an algorithm to program a sequence on a floor robot ● I know show the difference in outcomes between two sequences that

	● I know sort IT by where it is found ● I know talk about uses of information technology To explain how information technology helps us ● I know recognise common types of technology ● I know demonstrate how IT devices work together ● I know say why we use IT To explain how to use information technology safely ● I know list different uses of information technology ● I know talk about different rules for using IT ● I know say how rules can help keep me safe To recognise that choices are made when using information technology ● I know identify the choices that I make when using IT ● I know use IT for different types of activities ● I know explain the need to use IT in different ways	● I know connect images with sounds ● I know use a computer to experiment with pitch ● I know relate an idea to a piece of music To use a computer to create a musical pattern ● I know identify that music is a sequence of notes ● I know explain how my music can be played in different ways ● I know refine my musical pattern on a computer To create music for a purpose ● I know create a rhythm which represents an animal I've chosen ● I know create my animal's rhythm on a computer ● I know add a sequence of notes to my rhythm To review and refine our computer work ● I know review my work	better in portrait or landscape format To describe what makes a good photograph ● I know identify what is wrong with a photograph ● I know discuss how to take a good photograph ● I know improve a photograph by retaking it To decide how photographs can be improved ● I know explore the effect that light has on a photo ● I know experiment with different light sources ● I know explain why a picture may be unclear To use tools to change an image ● I know recognise that images can be changed	data in a different format ● I know use pictograms to answer simple questions about objects To create a pictogram ● I know organise data in a tally chart ● I know use a tally chart to create a pictogram ● I know explain what the pictogram shows To select objects by attribute and make comparisons ● I know tally objects using a common attribute ● I know create a pictogram to arrange objects by an attribute ● I know answer 'more than'/'less than' and 'most/least'	consist of the same instructions To use logical reasoning to predict the outcome of a program ● I know follow a sequence ● I know predict the outcome of a sequence ● I know compare my prediction to the program outcome To explain that programming projects can have code and artwork ● I know explain the choices that I made for my mat design ● I know identify different routes around my mat ● I know test my mat to make sure that it is usable To design an algorithm ● I know explain what my algorithm should achieve ● I know create an algorithm to meet my goal ● I know use my algorithm to create a program To create and debug a program that I have written

	Information technology (IT), computer, barcode, scanner/scan	● I know explain how I changed my work ● I know listen to music and describe how it makes me feel Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, instrument, create, open, edit	● I know use a tool to achieve a desired effect ● I know explain my choices To recognise that photos can be changed ● I know apply a range of photography skills to capture a photo ● I know recognise which photos have been changed ● I know identify which photos are real and which have been changed Device, camera, photograph, capture, image, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject, matter, flash, focus, background, foreground, editing,	questions about an attribute To recognise that people can be described by attributes • I know choose a suitable attribute to compare people ● I know collect the data I need ● I know create a pictogram and draw conclusions from it To explain that we can present information using a computer ● I know use a computer program to present information in different ways ● I know share what I have found out using a computer	● I know test and debug each part of the program ● I know plan algorithms for different parts of a task ● I know put together the different parts of my program Programming B To explain that a sequence of commands has a start ● I know identify the start of a sequence ● I know identify that a program needs to be started ● I know show how to run my program To explain that a sequence of commands has an outcome ● I know predict the outcome of a sequence of commands ● I know match two sequences with the same outcome ● I know change the outcome of a sequence of commands To create a program using a given design ● I know work out the actions of a sprite in an algorithm

			filter, Pixl, changed, real	● I know give simple examples of why information should not be shared More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular	● I know decide which blocks to use to meet the design ● I know build the sequences of blocks I need To change a given design ● I know choose backgrounds for the design ● I know choose characters for the design ● I know create a program based on the new design To create a program using my own design ● I know choose the images for my own design ● I know create an algorithm ● I know build sequences of blocks to match my design To decide how my project can be improved ● I know compare my project to my design ● I know improve my project by adding features ● I know debug my program Instruction, sequence, clear, unambiguous, algorithm, program, order, commands,

					prediction, artwork, design, route, mat, debugging command, run, start, predict, blocks, actions, sprite, modify, match, debug, features, evaluate
Year 3	**Connecting Computers**	**Animation**	**Desktop publishing**	**Branching Databases**	**Programming A and B**
	To explain how digital devices function ● I know explain that digital devices accept inputs ● I know explain that digital devices produce outputs ● I know follow a process To identify input and output devices ● I know classify input and output devices ● I know describe a simple process ● I know design a digital device To recognise how digital devices can change the way that we work ● I know explain how I use digital devices for different activities ● I know recognise similarities between using digital devices and using non-digital tools	To explain that animation is a sequence of drawings or photographs ● I know draw a sequence of pictures ● I know create an effective flip book—style animation ● I know explain how an animation/flip book works To relate animated movement with a sequence of images ● I know predict what an animation will look like ● I know explain why little changes are needed for each frame ● I know create an effective stop-frame animation To plan an animation	To recognise how text and images convey information ● I know explain the difference between text and images ● I know recognise that text and images can communicate messages clearly ● I know identify the advantages and disadvantages of using text and images To recognise that text and layout can be edited ● I know change font style, size, and colours for a given purpose ● I know edit text	To create questions with yes/no answers ● I know investigate questions with yes/no answers ● I know make up a yes/no question about a collection of objects ● I know create two groups of objects separated by one attribute To identify the attributes needed to collect data about an object ● I know select an attribute to separate objects into groups	To explore a new programming environment ● I know identify the objects in a Scratch project (sprites, backdrops) ● I know explain that objects in Scratch have attributes (linked to) ● I know recognise that commands in Scratch are represented as blocks To identify that commands have an outcome ● I know identify that each sprite is controlled by the commands I choose ● I know choose a word which describes an on-screen action for my plan ● I know create a program following a design To explain that a program has a start ● I know start a program in different ways

	● I know suggest differences between using digital devices and using non-digital tools To explain how a computer network can be used to share information ● I know recognise different connections ● I know explain how messages are passed through multiple connections ● I know discuss why we need a network switch To explore how digital devices can be connected ● I know recognise that a computer network is made up of a number of devices ● I know demonstrate how information can be passed between devices ● I know explain the role of a switch, server, and wireless access point in a network To recognise the physical components of a network ● I know identify how devices in a network are connected together ● I know identify networked devices around me	● I know break down a story into settings, characters and events ● I know describe an animation that is achievable on screen ● I know create a storyboard To identify the need to work consistently and carefully ● I know use onion skinning to help me make small changes between frames ● I know review a sequence of frames to check my work ● I know evaluate the quality of my animation To review and improve an animation ● I know explain ways to make my animation better ● I know evaluate another learner's animation ● I know improve my animation based on feedback	● I know explain that text can be changed to communicate more clearly To choose appropriate page settings ● I know explain what 'page orientation' means ● I know recognise placeholders and say why they are important ● I know create a template for a particular purpose To add content to a desktop publishing publication ● I know choose the best locations for my content ● I know paste text and images to create a magazine cover ● I know make changes to content after I've added it	● I know create a group of objects within an existing group ● I know arrange objects into a tree structure To create a branching database ● I know select objects to arrange in a branching database ● I know group objects using my own yes/no questions ● I know test my branching database to see if it works To explain why it is helpful for a database to be well structured ● I know create yes/no questions using given attributes ● I know compare two	● I know create a sequence of connected commands ● I know explain that the objects in my project will respond exactly to the code To recognise that a sequence of commands can have an order ● I know explain what a sequence is ● I know combine sound commands ● I know order notes into a sequence To change the appearance of my project ● I know build a sequence of commands ● I know decide the actions for each sprite in a program ● I know make design choices for my artwork To create a project from a task description ● I know identify and name the objects I will need for a project ● I know relate a task description to a design ● I know implement my algorithm as code

	● I know identify the benefits of computer networks Digital device, input, output, process, program, connection, network, network switch, server, wireless access point (WAP)	To evaluate the impact of adding other media to an animation ● I know add other media to my animation ● I know explain why I added other media to my animation ● I know evaluate my final film Animation, flip book, stop frame, animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, delete, frame, media, import, transition	To consider how different layouts can suit different purposes ● I know identify different layouts ● I know match a layout to a purpose ● I know choose a suitable layout for a given purpose To consider the benefits of desktop publishing ● I know identify the uses of desktop publishing in the real world ● I know say why desktop publishing might be helpful ● I know compare work made on desktop publishing to work created by hand Text, images, advantages, disadvantages, communicate, font, style, template, desktop publishing,	branching database structures ● I know explain that questions need to be ordered carefully to split objects into similarly sized groups To plan the structure of a branching database ● I know independently create questions to use in a branching database ● I know create questions that will enable objects to be uniquely identified ● I know create a physical version of a branching database To independently create an identification tool ● I know create a branching	To explain how a sprite moves in an existing project ● I know explain the relationship between an event and an action ● I know choose which keys to use for actions and explain my choices ● I know identify a way to improve a program To create a program to move a sprite in four directions ● I know choose a character for my project ● I know choose a suitable size for a character in a maze ● I know program movement To adapt a program to a new context ● I know use a programming extension ● I know consider the real world when making design choices ● I know choose blocks to set up my program To develop my program by adding features

			copy, paste, layout, purpose, benefits	database that reflects my plan ● I know work with a partner to test my identification tool ● I know suggest real-world uses for branching databases Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, j2data, selecting, pictogram, information, decision tree, questions	● I know identify additional features (from a given set of blocks) ● I know choose suitable keys to turn on additional features ● I know build more sequences of commands to make my design work To identify and fix bugs in a program ● I know test a program against a given design ● I know match a piece of code to an outcome ● I know modify a program using a design To design and create a maze-based challenge ● I know make design choices and justify them ● I know implement my design ● I know evaluate my project Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, event, task, design, code, run the

					code, order, note, chord, algorithm, bug, debug
Year 4	**The Internet (Digital Literacy) Online Safety**	**Audio Editing IT**	**Photo Editing IT**	**Data and Information – Data Logging IT**	**Repetition in shapes (Computer Science) Online Safety Repetition in Games (Computer Science)**
	To describe how networks physically connect to other networks ● I know describe the internet as a network of networks ● I know demonstrate how information is shared across the internet ● I know discuss why a network needs protecting To recognise how networked devices make up the internet ● I know describe networked devices and how they connect	To identify that sound can be recorded ● I know identify the input and output devices used to record and play sound ● I know use a computer to record audio ● I know explain that the person who records the sound can say who is allowed to use it To explain that audio recordings can be edited	To explain that digital images can be changed ● I know identify changes that we can make to an image ● I know explore how images can be changed in real life ● I know explain the effect that editing can have on an image To change the composition of an image ● I know explain what has changed in an edited image	To explain that data gathered over time can be used to answer questions ● I know choose a data set to answer a given question ● I know suggest questions that can be answered using a given data set ● I know identify data that can be gathered over time To use a digital device to collect data automatically	To identify that accuracy in programming is important ● I know program a computer by typing commands ● I know explain the effect of changing a value of a command ● I know create a code snippet for a given purpose To create a program in a text-based language ● I know use a template to draw what I want my program to do

	● I know explain that the internet is used to provide many services ● I know recognise that the World Wide Web contains websites and web pages To outline how websites can be shared via the World Wide Web (WWW) ● I know explain the types of media that can be shared on the WWW ● I know describe where websites are stored when uploaded to the WWW ● I know describe how to access websites on the WWW To describe how content can be added and accessed on the World Wide Web (WWW) ● I know explain what media can be found on websites ● I know recognise that I know add content to the WWW ● I know explain that internet services can be used to create content online	● I know re-record my voice to improve my recording ● I know inspect the soundwave view to know where to trim my recording ● I know discuss what sounds can be added to a podcast To recognise the different parts of creating a podcast project ● I know explain how sounds can be combined to make a podcast more engaging ● I know save my project so the different parts remain editable ● I know plan appropriate content for a podcast To apply audio editing skills independently ● I know record content following my plan	● I know change the composition of an image by selecting parts of it ● I know consider why someone might want to change the composition of an image To describe how images can be changed for different uses ● I know talk about changes made to images ● I know choose effects to make my image fit a scenario ● I know explain why my choices fit a scenario To make good choices when selecting different tools ● I know identify how an image has been retouched ● I know give examples of positive and negative effects that retouching can have on an image	● I know explain what data can be collected using sensors ● I know use data from a sensor to answer a given question ● I know identify that data from sensors can be recorded To explain that a data logger collects 'data points' from sensors over time ● I know recognise that a data logger collects data at given points ● I know identify the intervals used to collect data ● I know talk about the data that I have captured To recognise how a computer can help us analyse data ● I know view data at different levels of detail ● I know sort data to find information ● I know explain that there are different ways to view data	● I know write an algorithm to produce a given outcome ● I know test my algorithm in a text-based language To explain what 'repeat' means ● I know identify repetition in everyday tasks ● I know identify patterns in a sequence ● I know use a count-controlled loop to produce a given outcome To modify a count-controlled loop to produce a given outcome ● I know identify the effect of changing the number of times a task is repeated ● I know predict the outcome of a program containing a count-controlled loop ● I know choose which values to change in a loop To decompose a task into small steps

	To recognise how the content of the WWW is created by people ● I know explain that websites and their content are created by people ● I know suggest who owns the content on websites ● I know explain that there are rules to protect content To evaluate the consequences of unreliable content ● I know explain that not everything on the World Wide Web is true ● I know explain why some information I find online may not be honest, accurate, or legal ● I know explain why I need to think carefully before I share or reshare content Internet, network, router, network security, network switch, wireless access point (WAP), router, website, web page, web address, router, routing, route tracing,	● I know review the quality of my recordings ● I know improve my voice recordings To combine audio to enhance my podcast project ● I know open my project to continue working on it ● I know arrange multiple sounds to create the effect I want ● I know explain the difference between saving a project and exporting an audio file To evaluate the effective use of audio ● I know listen to an audio recording to identify its strengths ● I know suggest improvements to an audio recording ● I know choose appropriate edits to improve my podcast	● I know choose appropriate tools to retouch an image To recognise that not all images are real ● I know sort images into 'fake' or 'real' and explain my choices ● I know combine parts of images to create new images ● I know talk about fake images around me To evaluate how changes can improve an image ● I know consider the effect of adding other elements to my work ● I know compare the original image with my completed publication ● I know evaluate the impact of my publication on others through feedback Image, edit, arrange, select, digital, crop,	To identify the data needed to answer questions ● I know propose a question that can be answered using logged data ● I know plan how to collect data using a data logger ● I know use a data logger to collect data To use data from sensors to answer questions ● I know interpret data that has been collected using a data logger ● I know draw conclusions from the data that I have collected ● I know explain the benefits of using a data logger Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion	● I know identify 'chunks' of actions in the real world ● I know use a procedure in a program ● I know explain that a computer can repeatedly call a procedure To create a program that uses count-controlled loops to produce a given outcome ● I know design a program that includes count-controlled loops ● I know make use of my design to write a program ● I know develop my program by debugging it Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, animate,

	browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, accurate, honest, adverts	Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback	undo, save, search, copyright, composition, save, pixels, rotate, flip, adjustments, effects, colours, hue/saturation, sepia, version, illustrator, clone, recolour, magic wand, sharpen, brighten, fake, real, composite, background, foreground, retouch, paste, alter, publication, elements, original, font style, border, layer		costume, event block, duplicate, modify, debug, refine, evaluate, algorithm
Year 5	**Sharing Information (Digital Literacy**	**Vector drawing IT**	**Video Editing IT**	**Data and Information – flat file databases IT**	**Selection in physical computing (Computer Science) Selection in Quizzes (Computer Science)**
	To explain that computers can be connected together to form systems ● I know explain that systems are built using a number of parts ● I know describe that a computer system features inputs, processes, and outputs	To identify that drawing tools can be used to produce different outcomes ● I know recognise that vector drawings are made using shapes	To explain what makes a video effective ● I know explain that video is a visual media format ● I know identify features of videos ● I know compare features in different videos	To use a form to record information ● I know create a database using cards ● I know explain how information can be recorded ● I know order, sort, and group my data cards	To control a simple circuit connected to a computer ● I know create a simple circuit and connect it to a microcontroller ● I know program a microcontroller to make an LED switch on ● I know explain what an infinite loop does

	● I know explain that computer systems communicate with other devices To recognise the role of computer systems in our lives ● I know identify tasks that are managed by computer systems ● I know identify the human elements of a computer system ● I know explain the benefits of a given computer system To recognise how information is transferred over the internet ● I know recognise that data is transferred using agreed methods ● I know explain that networked digital devices have unique addresses ● I know explain that data is transferred over networks in packets To explain how sharing information online lets people in different places work together	● I know experiment with the shape and line tools ● I know discuss how vector drawings are different from paper-based drawings To create a vector drawing by combining shapes ● I know identify the shapes used to make a vector drawing ● I know explain that each element added to a vector drawing is an object ● I know move, resize, and rotate objects I have duplicated To use tools to achieve a desired effect ● I know use the zoom tool to help me add detail to my drawings ● I know explain how alignment grids and resize handles can be used to improve consistency	To use a digital device to record video ● I know identify and find features on a digital video recording device ● I know experiment with different camera angles ● I know make use of a microphone To capture video using a range of techniques ● I know suggest filming techniques for a given purpose ● I know capture video using a range of filming techniques ● I know review how effective my video is To create a storyboard ● I know outline the scenes of my video ● I know decide which filming techniques I will use ● I know create and save video content To identify that video can be improved	To compare paper and computer-based databases ● I know explain what a field and a record is in a database ● I know navigate a flat-file database to compare different views of information ● I know choose which field to sort data by to answer a given question To outline how you can answer questions by grouping and then sorting data ● I know explain that data can be grouped using chosen values ● I know group information using a database ● I know combine grouping and sorting to answer specific questions To explain that tools can be used to select specific data ● I know choose which field and value are	To write a program that includes count-controlled loops ● I know connect more than one output component to a microcontroller ● I know use a count-controlled loop to control outputs ● I know design sequences that use count-controlled loops To explain that a loop can stop when a condition is met ● I know explain that a condition is either true or false ● I know design a conditional loop ● I know program a microcontroller to respond to an input To explain that a loop can be used to repeatedly check whether a condition has been met ● I know explain that a condition being met can start an action

	● I know recognise that connected digital devices can allow us to access shared files stored online ● I know send information over the internet in different ways ● I know explain that the internet allows different media to be shared To contribute to a shared project online ● I know suggest strategies to ensure successful group work ● I know make thoughtful suggestions on my group's work ● I know compare working online with working offline To evaluate different ways of working together online ● I know identify different ways of working together online ● I know recognise that working together on the internet can be public or private	● I know modify objects to create a new image To recognise that vector drawings consist of layers ● I know identify that each added object creates a new layer in the drawing ● I know change the order of layers in a vector drawing ● I know use layering to create an image To group objects to make them easier to work with ● I know copy part of a drawing by duplicating several objects ● I know recognise when I need to group and ungroup objects ● I know reuse a group of objects to further develop my vector drawing	through reshooting and editing ● I know store, retrieve, and export my recording to a computer ● I know explain how to improve a video by reshooting and editing ● I know select the correct tools to make edits to my video To consider the impact of the choices made when making and sharing a video ● I know make edits to my video and improve the final outcome ● I know recognise that my choices when making a video will impact the quality of the final outcome ● I know evaluate my video and share my opinions	required to answer a given question ● I know outline how 'AND' and 'OR' can be used to refine data selection ● I know choose multiple criteria to answer a given question To explain that computer programs can be used to compare data visually ● I know select an appropriate chart to visually compare data ● I know refine a chart by selecting a particular filter ● I know explain the benefits of using a computer to create charts To use a real-world database to answer questions ● I know ask questions that will need more than one field to answer ● I know refine a search in a real-world context	● I know identify a condition and an action in my project ● I know use selection (an 'if…then…' statement) to direct the flow of a program To design a physical project that includes selection ● I know identify a real-world example of a condition starting an action ● I know describe what my project will do ● I know create a detailed drawing of my project To create a program that controls a physical computing project ● I know write an algorithm that describes what my model will do ● I know use selection to produce an intended outcome ● I know test and debug my project **B** To explain how selection is used in computer programs

	● I know explain how the internet enables effective collaboration System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	To apply what I have learned about vector drawings ● I know create a vector drawing for a specific purpose ● I know reflect on the skills I have used and why I have used them ● I know compare vector drawings to freehand paint drawings Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives	Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback	● I know present my findings to a group Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation	● I know recall how conditions are used in selection ● I know identify conditions in a program ● I know modify a condition in a program To relate that a conditional statement connects a condition to an outcome ● I know use selection in an infinite loop to check a condition ● I know identify the condition and outcomes in an 'if… then… else…' statement ● I know create a program that uses selection to produce different outcomes To explain how selection directs the flow of a program ● I know explain that program flow can branch according to a condition ● I know design the flow of a program that contains 'if… then… else…' ● I know show that a condition can direct

					program flow in one of two ways To design a program that uses selection ● I know outline a given task ● I know use a design format to outline my project ● I know identify the outcome of user input in an algorithm To create a program that uses selection ● I know implement my algorithm to create the first section of my program ● I know test my program ● I know share my program with others To evaluate my program ● I know identify ways the program could be improved ● I know identify the setup code I need in my program ● I know extend my program further Microcontroller, crumble controller, components,

					LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive
Year 6	**Communication (Digital Literacy)**	**3d Modelling IT**	**Website creations IT**	**Data and Information – Spreadsheets IT**	**Variables in games (Computer Science) Senses**

					(Computer Science)
	To identify how to use a search engine ● I know complete a web search to find specific information ● I know refine my search ● I know compare results from different search engines To describe how search engines select results ● I know explain why we need tools to find things online ● I know recognise the role of web crawlers in creating an index ● I know relate a search term to the search engine's index To explain how search results are ranked ● I know explain that search results are ordered ● I know explain that a search engine follows rules to rank relevant pages ● I know suggest some of the criteria that a search engine checks to decide on the order of results	To recognise that you can work in three dimensions on a computer ● I know add 3D shapes to a project ● I know view 3D shapes from different perspectives ● I know move 3D shapes relative to one another To identify that digital 3D objects can be modified ● I know resize an object in three dimensions ● I know lift/lower 3D objects ● I know recolour a 3D object To recognise that objects can be combined in a 3D model ● I know rotate objects in three dimensions ● I know duplicate 3D objects	To review an existing website and consider its structure ● I know explore a website ● I know discuss the different types of media used on websites ● I know that websites are written in HTML To plan the features of a web page ● I know recognise the common features of a web page ● I know suggest media to include on my page ● I know draw a web page layout that suits my purpose To consider the ownership and use of images (copyright) ● I know say why I should use copyright-free images ● I know find copyright-free images	To create a data set in a spreadsheet ● I know collect data ● I know suggest how to structure my data ● I know enter data into a spreadsheet To build a data set in a spreadsheet ● I know explain what an item of data is ● I know choose an appropriate format for a cell ● I know apply an appropriate format to a cell To explain that formulas can be used to produce calculated data ● I know explain which data types can be used in calculations ● I know construct a formula in a spreadsheet ● I know identify that changing inputs changes outputs To apply formulas to data	To define a 'variable' as something that is changeable ● I know identify examples of information that is variable ● I know explain that the way a variable changes can be defined ● I know identify that variables can hold numbers or letters To explain why a variable is used in a program ● I know identify a program variable as a placeholder in memory for a single value ● I know explain that a variable has a name and a value ● I know recognise that the value of a variable can be changed To choose how to improve a game by using variables ● I know decide where in a program to change a variable ● I know make use of an event in a program to set a variable

	To recognise why the order of results is important, and to whom ● I know describe some of the ways that search results can be influenced ● I know recognise some of the limitations of search engines ● I know explain how search engines make money To recognise how we communicate using technology ● I know explain the different ways in which people communicate ● I know identify that there are a variety of ways of communicating over the internet ● I know choose methods of communication to suit particular purposes To evaluate different methods of online communication ● I know compare different methods of communicating on the internet	● I know group 3D objects To create a 3D model for a given purpose ● I know accurately size 3D objects ● I know show that placeholders can create holes in 3D objects ● I know combine a number of 3D objects To plan my own 3D model ● I know analyse a 3D model ● I know choose objects to use in a 3D model ● I know combine objects in a design To create my own digital 3D model ● I know construct a 3D model based on a design ● I know explain how my 3D model could be improved	● I know describe what is meant by the term 'fair use' To recognise the need to preview pages ● I know add content to my own web page ● I know preview what my web page looks like ● I know evaluate what my web page looks like on different devices and suggest/make edits. To outline the need for a navigation path ● I know explain what a navigation path is ● I know describe why navigation paths are useful ● I know make multiple web pages and link them using hyperlinks To recognise the implications of linking to content owned by other people	● I know calculate data using different operations ● I know create a formula which includes a range of cells ● I know apply a formula to multiple cells by duplicating it To create a spreadsheet to plan an event ● I know use a spreadsheet to answer questions ● I know explain why data should be organised ● I know apply a formula to calculate the data I need to answer questions To choose suitable ways to present data ● I know produce a chart ● I know use a chart to show the answer to a question ● I know suggest when to use a table or chart	● I know recognise that the value of a variable can be used by a program To design a project that builds on a given example ● I know choose the artwork for my project ● I know create algorithms for my project ● I know explain my design choices To use my design to create a project ● I know create the artwork for my project ● I know choose a name that identifies the role of a variable ● I know test the code that I have written To evaluate my project ● I know identify ways that my game could be improved ● I know use variables to extend my game ● I know share my game with others **B** To create a program to run on a controllable device

	● I know decide when I should and should not share ● I know explain that communication on the internet may not be private Search, search engine, Google, Bing, Yahoo, Swisscows, DuckDuckGo, refine. index, crawler, bot, optimisation, links, web crawlers, content creator, ranking, communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	● I know modify my 3D model to improve it 2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve	● I know explain the implication of linking to content owned by others ● I know create hyperlinks to link to other people's work ● I know evaluate the user experience of a website Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation, hyperlink, subpage, implication, external link, embed	Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results, comparisons, questions, software, tools, data, propose	● I know apply my knowledge of programming to a new environment ● I know test my program on an emulator ● I know transfer my program to a controllable device To explain that selection can control the flow of a program ● I know identify examples of conditions in the real world ● I know use a variable in an if, then, else statement to select the flow of a program ● I know determine the flow of a program using selection To update a variable with a user input ● I know use a condition to change a variable ● I know experiment with different physical inputs ● I know explain that checking a variable doesn't change its value

					To use an conditional statement to compare a variable to a value ● I know use an operand (e.g. <>=) in an if, then statement ● I know explain the importance of the order of conditions in else, if statements ● I know modify a program to achieve a different outcome To design a project that uses inputs and outputs on a controllable device ● I know decide what variables to include in a project ● I know design the algorithm for my project ● I know design the program flow for my project To develop a program to use inputs and outputs on a controllable device ● I know create a program based on my design ● I know test my program against my design

					● I know use a range of approaches to find and fix bugs Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share Micro-bit, MakeCode, input, process, output, flashing, USB, selection, condition, if… then… else, variable, random, navigation, design, task, step counter, plan, create, code, test, debug