	Computer systems and networks (understanding technology)	Creating media (digital literacy)	Creating media (digital literacy)	Data and information (digital literacy)	Programming – A	Programming - B
EYFS	- Learning how to explore and tinker with **hardware** to develop familiarity and introduce relevant vocabulary. - Recognising and identifying familiar letters and numbers on a **keyboard**.	- Recognise that a range of **techonology** is used for different purposes. - Learn to **log in** and **log out**. - To know that you can take a simple photo with a camera or iPad. - To know that you must hold the **camera** still and ensure that the subject is in the shot to take a **photo**.	- To know that a **mouse** can be used to click, drag and create simple drawings. - To know that to use a **computer** you need to log in to it and then log out at the end of your session. - To know that different types of technology can be found at home and in school.	- Represent **data** through sorting and categorising objects in unplugged scenarios. - Represent data through physical **pictograms**. - Explore branch databases through physical games. - To know that sorting objects into various categories can help you locate information. - To know that a pictogram is a way of sharing information.	- To know that being able to follow and give simple instructions is important in computing. - To understand that it is important for instructions to be in the right order. - To understand why a set of instructions may have gone wrong.	- To know that you can **program** a Bee-bot with some simple commands. - To understand that **debugging** means how to fix some simple programming errors. - To understand that an **algorithm** is a set of clear and precise instructions.

Year 1	**Topic:** Technology around us - Pupils know and can identify different types of **technology.** - Pupils know the main parts of a computer (on/off **switch, mouse/trackpad** to **click** and **drag**). - Pupils know how to use a **mouse/trackpad** in different ways (open a **program** and create a picture). - Pupils know how to use a **keyboard** to type on a **computer** and move the	**Topic:** digital painting -Pupils know what the different freehand **paint tools** do. -Pupils know how to use the **shape tool** and the **line tool.** -Pupils know how to change the colour and brush sizes. -Pupils knows how to make careful choices when painting a **digital picture** in the style of an artist.	**Topic:** Digital writing -Pupils know how use a **computer** to write using a **word processing**. -Pupils know and find **keys (space, back space, letters and numbers)** on a **keyboard.** -Pupils know how to **add** and **remove** text on a computer. -Pupils know that the look of **text** can be changed on a **computer.**	Topic: Grouping data -Pupils know objects can be labelled -Pupils know that objects can be counted. -Pupils know that we can describe objects in different ways. -Pupils know they can count objects with the same properties. -Pupils know they can compare groups of objects. -Pupils know they can group objects and	**Topic:** Moving a robot -Pupils know what a given command will do, predicting and matching it to an outcome. -Pupils know how to combine forwards and backwards commands to predict and make a sequence. -Pupils know how to use left and right commands to move a robot. -Pupils know how to **combine** four direction commands to	**Topic:** Introduction to animation -Pupils know how to choose a command for a given purpose (move a sprite). -Pupils know that a series of commands (blocks) can be joined together to create an algorithm. -Pupils know how to run and test a program using a start block. -Pupils know the effect of changing a value of a block.

	cursor and **delete** letters. -Pupils know how to use the **keyboard** to edit text. -Pupils know how to use **technology** responsibly.	-Pupils know which tools to choose and use. -Pupils know how to use a **computer** to paint a picture. -Pupils know how to compare painting a picture on a **computer** and on paper. the use of digital devices.	-Pupils know how to type a capital letter using **caps lock.** -Pupils know what the **tool bar** is and how to use **bold**, **italic**, and **underline.** -Pupils know how to make careful choices when changing **text** by **double-clicking** and dragging to select. -Pupils know how to change the **font**. -Pupils know how to improve their writing and can explain why they used the **tools** that they chose. Pupils	answer questions about these groups.	make sequences. -To know how to plan a simple program and debug the program, knowing what it should do. -Pupils know how to find more than one solution to a problem.	Create and debug simple programs -Pupils know that each **sprite** has its own instructions and how to add and **delete** more than 1 **sprite**. -Pupils know how to design the parts of a project. -Pupils know how to use algorithms to create a program and test what has been created.

			know how to use **'Undo'** to remove changes. -Pupils know the similarities and difference between writing on paper and on a **computer** and can say why they prefer typing or writing.			
Year 2	**<u>Topic</u>** IT around us -Pupils know the uses of **information technolo**gy in	**<u>Topic</u>** Digital photography -Pupils know which digital device to use to	**<u>Topic</u>** Making Music -Pupils know how music can make us feel and	**<u>Topic:</u>** Pictograms -Pupils know how to describe the properties of	**<u>Topic</u>** Robot Algorithms -Pupils know how to describe a series of	**<u>Topic</u>** Programming quizzes -Pupils know that a sequence of commands

	school and beyond. -Pupils know how **information technology** helps us. -Pupils know how to use information technology **safely.** -Pupils know that choices are made when using **information technology.**	capture a digital photo. -Pupils know how to use a digital device to take a photograph in either portrait or landscape. -Pupils know how to make choices when taking a photograph. -Pupils know what makes a good photograph. -Pupils know how photographs can be improved. -Pupils know how to use tools	identify simple differences in pieces of music. -Pupils know that there are patterns in music and can follow and create a rhythm patterns. -Pupils know how to change pitch using a computer and using images to create sounds. -Pupils know how to use a computer to create a musical pattern using sequences of notes. -Pupils know how create	an object, count and compare them. Pupils know how to count and compare objects using tally charts. -Pupils know that objects can be represented as pictures. -Pupils know how to create a pictogram. -Pupils know how to select objects by attribute and make comparisons. -Pupils know that people can be described by attributes.	instructions to create a sequence. -Pupils know how to explain what happens when we change the order of instructions. -Pupils know how to program and predict a sequence for a floor robot. -Pupils know that programming projects can have code and artwork -Pupils know how to design an algorithm. -Pupils know how to create	has a start and know how to run a program. -Pupils know that a sequence of commands has an outcome and the outcome can be changed. -Pupils know how to create a program using a given design, creating algorit for a sprite's actions using a sequence of blocks. -Pupils know how to change a given design. -Pupils know how to create a program using their own design.

		to change an image -Pupils know that photos can be changed	music/rhythm for a purpose. -Pupils know how to review and refine their computer work and explain how they changed it.	-Pupils know how to explain that we can present information using a computer.	and debug a program that has been created.	-Pupils know how improve their project by adding features and debugging.
Year 3	**Topic** Connecting Computers -Pupils know how digital devices function, using input and output. - Pupils know the physical components of **a network and** that a computer network is made up of multiple devices. -Pupils know how digital devices	**Topic** Stop-frame animation -Pupils know that animation is a sequence of drawings or photographs. -Pupils know how to relate animated movement with a sequence of images.	**Topic** Desktop Publishing -Pupils know how text and images convey information. -Pupils know the difference between text and images and the advantages and disadvantages of using text and images. -Pupils know that text and	**Topic** Branching Databases -Pupils know how to create questions with yes/no answers. -Pupils know how to identify the attributes needed to collect data about an object. -Pupils know how to create a branching database.	**Topic** Sequencing Sounds -Pupils know how to use the programming environment of Scratch. -Pupils know that commands in Scratch are represented in blocks have an outcome. -Pupils know how to create a program using a	**Topic** Events and Actions in Programs -Pupils know how a sprite moves in an existing project using blocks. -Pupils know how to program movement using a sequence of commands and create a program to move a sprite in four directions.

	can change the way we work.	-Pupils know how to plan an animation. -Pupils know how to create a flip-book style animation, explaining how it works. -Pupils know how to work consistently and carefully. -Pupils know how to review and improve an animation. -Pupils know how to evaluate the impact of adding other media to an animation.	layout can be edited (font style, size, and colours for a given purpose). -Pupils know how to choose the appropriate page settings (templates, 'page orientation,' placeholders). -Pupils know how to add content to a desktop publishing publication. -Pupils know how different layouts can suit different purposes and choose a suitable layout	-Pupils know how to explain why it is helpful for a database to be well structured. -Pupils know how to plan the structure of a branching database. -Pupils know how to independently create an identification tool.	design and sequence. -Pupils know that sprites are controlled by commands. -Pupils know that a sequence of commands can have an order. -Pupils know how to create a project from a task description using sprites controlled by movement commands and sound commands. - Pupils know how to change the appearance of a project.	-Pupils know how to adapt a program to a new context using program extensions and blocks. -Pupils know how to develop a program by adding features from a given set of blocks and choose suitable keys to turn on additional features. -Pupils know how to fix bugs in a program. -Pupils know how to design and create a maze-based challenge.

			for a given purpose. -Pupils know the benefits of desktop publishing and can compare work made on desktop publishing to work created by hand.			
Year 4	**Topic** The Internet -Pupils know how networks physically connect to other networks. -Pupils know how networked devices make up the internet. -Pupils know how websites can be shared via the	**Topic** Audio Production -Pupils know that sound can be recorded. -Pupils know that input and output devices are used to record and play sound.	**Topic** Photo editing -Pupils know that the composition of digital images can be changed by rotating, cropping an image and changing colours.	**Topic** Data Logging -Pupils know that data gathered over time can be used to answer questions. -Pupils know how to use a digital device to collect data automatically.	**Topic** Repetition in shapes -Pupils know that accuracy in programming is important. -Pupils know how to create a program on a computer by typing in commands in a text-based language.	**Topic** Repetition in games -Pupils know how to use count controlled and infinite loops in a different programming environment. -Pupils know that in programming there are infinite loops and count

	World Wide Web (WWW). -Pupils know how content can be added and accessed on the World Wide Web (WWW). -Pupils know how the content of the WWW is created by people. -Pupils know that there are rules to protect content on the WWW. -Pupils know that not everything on the WWW is true, and why it may not be honest, accurate or legal.	-Pupils know how to use a computer to record audio. -Pupils know that audio recordings can be edited/trimmed and saved as an editable document. -Pupils know how to combine audio to enhance their podcast project. -Pupils know how to evaluate the effective use of audio.	-Pupils know how cloning and colour effects can be used in photo editing. -Pupils know that images can be combined using tools to select and copy part of an image. -Pupils know how to combine images for a purpose. -Pupils know how changes can improve an image.	-Pupils know that a data logger collects 'data points' from sensors over time. -Pupils know how to view and sort data. -Pupils know how a computer can help us analyse data. -Pupils know how to identify the data needed to answer questions. -Pupils know how to use data from sensors to answer questions.	-Pupils know how to write an algorithm to achieve an outcome. -Pupils know what 'repeat' means. -Pupils know how to write a code and change the value of a command. - Pupils know how to use and modify a count-controlled loop, knowing which values to change to produce a given outcome. -Pupils know how to decompose a	controlled loops. -Pupils know how to develop a design that includes two or more loops which run at the same time and know that more than one process can run at once. -Pupils know how to modify an infinite loop in a given program. -Pupils know how to design a project that includes repetition. -Pupils know how to evaluate the steps they followed when

					task into small steps. -Pupils know how to use a procedure in a program and develop the program by debugging it.	building their project. -Pupils know how to use existing code on new sprites.
Year 5	**Topic** Systems and searching -Pupils know and can explain that computers can be connected together to form systems, and that these feature inputs, outputs and processes. -Pupils know the role of computer systems in our lives.	**Topic** Video production -Pupils know what makes a video effective. -Pupils know which digital devices can record video. -Pupils know the features on a digital video recording device, including a microphone.	**Topic** Vector graphics -Pupils know that drawing tools can be used to produce different outcomes and that vector drawings are made using shapes or objects. -Pupils know how to create a vector drawing by combining shapes, resizing,	**Topic** Flat-file database -Pupils know how to use a form to record information. -Pupils know how to compare paper and computer-based databases. -Pupils know how to navigate a flat fil database to	**Topic** Selection in physical computing -Pupils know how to control a simple circuit and connect it to a microcontroller controlling an LED. -Pupils know what an infinite loop does. -Pupils know how to connect more than	**Topic** Selection in quizzes -Pupils know how to create a program to run on a controllable device and test the program on an emulator. -Pupils know that programs can be transferred to a controllable device.

	-Pupils know how to use search engines. -Pupils know how search engines select results. -Pupils know how search results are ranked and recognise why the order of results is important, and to whom.	-Pupils know how to capture video using a range of techniques. -Pupils know how to create a storyboard. -Pupils know that video can be improved through reshooting and editing and know which tools to use. -Pupils know the impact of the choices made when making and sharing a video. -Pupils know how to save, retrieve and	rotating and duplicating objects. -Pupils know which tools to use to achieve a desired effect and improve consistency including zoom, alignment grids and resize handles. -Pupils recognise that vector drawings consist of layers and how to add a new layer, change the order of layers. -Pupils know how to group and ungroup objects to make them easier to work with by	compare information -Pupils know how you can answer questions by grouping and then sorting data. -Pupils know how 'and and or' can be used to refine data. Pupils know how filters can refine data and charts -Pupils know that tools can be used to select specific data -Pupils know that computer programs can be used to compare data visually. -Pupils know how to use a	one output device to a microcontroller. Pupils know how to write a program that includes countcontrolled loops and that these control the output. -Pupils know that a loop can stop when a condition is met. - Pupils know that a loop can be used to repeatedly check whether a condition has been met and that if it has can start an action. -Pupils know that a condition (if, then) can control a program.	-Pupils know that if, then and else statements can be used to control the flow of a program, knowing the importance of the order of these. -Pupils know how to update a variable with a user input and that conditions can be used to change variables. -Pupils know how to use a conditional statement to compare a variable to a value and use operands (<>=) in an if, then statement.

		export video content.	copying part of a drawing and duplicating several objects -Pupils know how to apply what they have learned about vector drawings to create a vector drawing for a specific purpose and reflect on the skills they have used and why they have used them.	real-world database to answer questions.	-Pupils know how to design a physical project that includes selection. -Pupils know how to create a program that controls a physical computing project. -Pupils know how to test and debug the project.	-Pupils know how to design a project that uses inputs and outputs on a controllable device. -Pupils know how to develop a program to use inputs and outputs on a controllable device and use a range of approaches to find and fix bugs.
Year 6	**Topic** Internet Communication -Pupils know the importance of internet addresses and	**Topic** Webpage creation Pupils know the different types of media used on websites.	**Topic** 3d Modelling -Pupils know that you can work in three dimensions on a	**Topic** Introduction to spreadsheets -Pupils know how to create a data set in a spreadsheet.	**Topic** Variables in games -Pupils know that a variable is used in a	**Topic** Sensing Movement -Pupils know how to create a program to run on a

	know how these are used to access websites. -Pupils know how data is transferred across the internet. -Pupils know how sharing information online can help people to work together and can evaluate different ways of working together online. -Pupils know how we communicate using technology and can evaluate different methods of online communication.	-Pupils know that websites are written in HTML. -Pupils know how to review an existing website and consider its structure. -Pupils know the common features of a web page. -Pupils know about the ownership and use of images (copyright). -Pupils know the term fair use and can find copyright free images.	computer and add 3D shapes to a project. -Pupils can move 3D shapes relative to one another. -Pupils know that digital 3D objects can be modified by resizing, lifting, lowering and recolouring a 3D object. -Pupils know that objects and models can be combined, grouped, rotated and duplicated in a 3D model. -Pupils know how to create a 3D model for a given purpose.	-Pupils know the inputs and outputs in a spreadsheet. -Pupils know how to build a data set in a spreadsheet. -Pupils know that formulas and operations can be used to calculated data. -Pupils know how to apply formulas to data. -Pupils know how to create a spreadsheet to plan an event. -Pupils know to choose suitable ways to present data.	program and these can hold a number of letters, knowing that they have names and values. -Pupils know that program variables can hold the place of a single variable. -Pupils know that events in a program can set variables. -Pupils know how to improve a game by using variables. -Pupils know how to design a project that builds on a given example.	controllable device and test the program on an emulator. -Pupils know that programs can be transferred to a controllable device. -Pupils know that if, then and else statements can be used to control the flow of a program, knowing the importance of the order of these. -Pupils know how to update a variable with a user input and that conditions can be used to

	-Pupils know how to access shared files stored online.	-Pupils know how to add content to a webpage and preview it. -Pupils know that there is a need for a	-Pupils know how to accurately size the 3D objects and show that placeholders can create holes in 3D objects. -Pupils know how to plan and create their own 3D model and explain how it could be improved and modified.		-Pupils know how to use a design to create a project. -Pupils know how to evaluate their project.	change variables. -Pupils know how to use a conditional statement to compare a variable to a value and use operands (<>=) in an if, then statement. -Pupils know how to design a project that uses inputs and outputs on a controllable device. -Pupils know how to develop a program to use inputs and outputs on a controllable device and use a range of

						approaches to find and fix bugs.