Ulceby St Nicholas C.E Primary School Curriculum Overview

Cycle	Term	EYFS	Y1/2	Y3/4	Y4/5	6- Discreet Cycle
Cycle A	Autumn 1	***EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.***	**Networks:** **Y1 Technology all around us**	**Networks:** **Y3 Connecting Computers**	**Networks:** **Y4 The Internet**	**Networks:** **Y6 Communication**
			KS1 NC Objectives: • To Identify technology • To identify and name the main parts of a computer • To use a mouse/trackpad in different ways • To use a keyboard to type • To use the keyboard to edit text • To create rules for using technology responsibly	*KS2 NC Objectives:* • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way we work. • To explain how a computer network can be used to share information. • To explore how digital devices can be connected. • To recognise the physical components of a network.	*Ks2 NC Objectives* • To describe how networks physically connect to other networks. • To recognise how networked devices make up the internet. • To outline how website can be shared via the World Wide Web (WWW). • To describe how content can be added and accessed on the WWW. • To recognise how the content of the WWW is created by people. • To evaluate the consequences of unreliable content.	*KS2 NC Objectives:* • To identify how to use a search engine. • To describe how search engines select results. • To explain how search results are ranked. • To recognise why the order of results is important, and to whom. • To recognise how we communicate using technology. • To evaluate different methods of online communication.
			Why here? Why now? In EYFS children have experimented with a different range of technology. Pupils in year 1 and 2 will begin to develop skills using computer in order to prepare them for further learning.	*Why here? Why now?* From year 1/2 cycle A pupils will understand what a computer is and the wider world of digital technology. They will also have an understanding of E-safety. This lays the ground work for spring 2 unit in year 3/4 cycle A.	*Why here? Why now?* From year 3/4 pupils have learned about computer systems and networks and how computers can be connected together- particularly the switch/ server/ WAP – which lays the ground work for this unit.	*Why here? Why now?* Pupils have previously built up a knowledge of networks through looking at connecting computers and the internet. As well as, an understanding of E-safety.
			Key vocabulary: technology, computer, mouse/trackpad, keyboard, screen, click, drag, double click, draw, input device, shift, space bar, capital letter , full stop	Key vocabulary: digital device, input, output, process, program, connection, network, network switch, server, Wireless Access Point (WAP)	Key vocabulary Internet, network, router, security, network switch, server, Wireless Access Point (WAP), router, website, web page, web address, router, routing, route tracing, browser, World Wide Web, content, links, files, download, sharing, ownership, permission, information, accurate, honest, adverts	Key vocabulary: Search engine, Google, DuckDuckGo, index, crawler, bot, ranking, optimisation, links, web crawlers, content creator, selection, internet, one-way, two-way, one-to-one, one-to-many, SMS, Email, Whatsapp, blog, Youtube, Twitter

			Core Knowledge
			• Technology is a piece of equipment that helps us to do something.
			• The main parts of a computer are:
			  ○ Mouse
			  ○ Trackpad
			  ○ Keyboard
			  ○ Monitor
			  ○ Base unit
			  ○ Screen
			• To know I can click and drag using a trackpad/mouse.
			• To know I can use a keyboard to type.
			• To know I can use a keyboard to edit text.
			• The rules for using technology are:
			  ○ Hold your device carefully.
			  ○ Stop using your device when someone is talking to you.
			  ○ Take turns with your partner.
			  ○ Use only the apps you have been asked to used
				Core Knowledge
				• Digital devices accept and produce input.
				• To know digital devices must have an input, a process and an output.
				• An input device is:
				  ○ Keyboard
				  ○ Button (on a pedestrian crossing)
				  ○ Mouse
				  ○ Webcam
				  ○ Microphone
				• An output device is
				  ○ Speakers
				  ○ Screen
				  ○ Printer
				  ○ Traffic lights (on a pedestrian crossing)
				• To know that I use digital devices for different activities.
				• To know that a computer network is a group of two or more digital devices connected together.
				• To know that a computer network is made up of a number of devices.
				• To know that connecting networks together makes the internet.
					Core Knowledge
					• To know that the internet is a network of networks.
					• To know that networks need protecting to protect personal data.
					• To know the internet is connected by lots of routers and the WWW is part of the internet where we can visit web pages and websites.
					• To know that new content can be created online.
					• To know that websites and their content are created by people.
					• To know that not everything found on the WWW is true.
					• To know that some information found online may not be honest, legal or accurate.
					• To know that I need to think carefully before I share or reshare content.
						Core Knowledge
						• To know how to complete a web search to find specific information.
						• To know how to why we need tools to find things online.
						• To know that search results are ordered.
						• To know that a search engine follows rules to rank relevant pages.
						• To know some of the ways in which search results can be influenced.
						• To know some of the limitations of search engines.
						• To know some ways in which search engines make money.
						• To know different ways in which people can communicate.
						• To know there are a variety of ways to communicate using technology.
						• To know the different ways of communication through technology and their similarities and differences.
						• To know what information to share and not share using online communication.
						• To know that communication through the internet may not be private.

	Autumn 2	***EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.***	**Programming A: Y1 Moving a Robot (Beebots)**	**Programming A: Y3 Sequence in Music**	**Programming A: Y4 Repetition in Shapes**	**Programming A: Y6 Variables in Games**
			KS1 NC Objectives • To explain what a given command will do. • To act out a given word. • To combine forwards and backwards commands to make a sequence. • To combine four directions to make sequences. • To plan a simple program. • To fine more than one solution to a problem.	*KS2 NC Objectives* • To explore ne programming environment. • To identify that each sprite is controlled by the chosen commands. • To explain that a program has a start. • To recognise that a sequence of commands can have an order. • To change the appearance of the project. • To create a project from a task description.	*KS2 NC Objectives* • To identify that accuracy in programming is important. • To create a program in a text-based language. • To explain what repeat means. • To modify a count-controlled loop to produce a given outcome. • To decompose a program into parts. • To create a program that uses count-controlled loops produce a given outcome.	*KS2 NC Objectives* • To define a 'variable' as something that is changeable. • To explain why a variable is used in a program. • To choose how to improve a game using variables. • To design a project that builds on a given example. • To use my design to create a project. • To evaluate my project.
			Why here? Why now? From EYFS pupils are already familiar with the concepts of patterns, sequencing and algorithms. Here we get the pupils to experiment with commands to move the Beebots and build up to sequences of commands – leading to the concept of a simple program. This then sets the scene for Programming A: Y2 Robot Algorithms (Beebots) in term 5 of the cycle A for Y1/Y2.	*Why here? Why now?* Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different programming units and are secure in: work on sequences / programs / blocks / algorithms / embedding sprites into a program using a sequence of blocks AND how to improve it / debug it, they have also completed the Y2 making music unit. This unit takes all these skills and applies it to sequencing in music – which in turn lays the groundwork for repetition and audio editing work in the summer term of this cycle. There is again a re-visit to algorithms being implemented as code.	*Why here? Why now?* Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different programming units and are secure in: work on sequences / programs / blocks / algorithms / embedding sprites into a program using a sequence of blocks AND how to improve it / debug it. In the autumn term programming unit, they investigated sequencing in music. This unit takes all these skills and gets pupils to create a code snippet for a given purpose – takes the resulting program / algorithm and develops it into count-controlled loops. We also re-visit the skill of decomposing a program into parts.	*Why here? Why now?* Through the previous 6 years, pupils have built up a repertoire of programming skills. This unit gives pupils the chance to put these skills together (inc. artwork and algorithms) into a project (a game). Finally, there is a chance to debug the program.
			Key vocabulary: Forwards, backwards, turn, clear, go, commands, instructions, directions, plan, algorithm, program, route	Key vocabulary: Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in directions, go to, glide, sequence, event, task, design, run the code, algorithm, bug, debug	Key vocabulary Program, turtle, commands, code snippet, algorithm, design, debug, logo, pattern, repeat, repetition, count-controlled, loop, value, trace, decompose, procedure	Key vocabulary: Variable, value, event, algorithm, code, task, debug
			Core Knowledge • To know which command will lead to a certain outcome. • To know left ad right. • To know how to command a robot to move forward, backwards, left and right. • To know where a robot will end up based on its given instructions. • To know how to debug a program. • To know how to use and plan 2 programs.	**Core Knowledge** • To know how to use the objects in a Scratch project (sprite, backdrops). • To know that commands in scratch are represented as blocks. • To know how to create a program following a design. • To know how to start a program in different ways/ • To know that the objects in a project will respond exactly to the code created. • To know what a sequence is. • To know how to build a sequence of commands. • To know the objects needed for a project.	**Core Knowledge** • To know the effect of changing a value of a command. • To know how to test an algorithm in a text-based language. • To know how to write an algorithm to produce a given outcome. • To know that every day takes include repetition as part of sequencing e.g. brushing teeth, dance moves • To know how to identify patterns e.g. 'step 3 times' means the same as 'step, step, step'. • To know the effect of changing the number of times a task is repeated. • To know that a computer can repeatedly call a procedure. • To know how to develop a program by debugging it.	**Core Knowledge** • To know the way that a variable changes and how they can be defined. • To know that variables can hold letters and numbers. • To know that a variable has a name and a value. • To know that a value of a variable can be changed. • To know how to make use of an event in a program to set up a variable. • To know that the value of a variable can be used by a program. • To know how to create algorithms for a project. • To know how to choose a name that identifies the role of a variable. • To know how to test an ode I have written. • To know how to extend a game further using more variables. • To know how to identify ways that a game can be improved.

Cycle	Term	EYFS	Y1/2	Y3/4	Y4/5	6
Cycle A	Spring 1	***EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.***	**Media A** **Y1 Digital Painting**	**Media A** **Y3 Stop-Frame Animation**	**Media A** **Y4 Audio Editing**	**Media A** **Y6 Web Page Creation**
			KS1 NC Objectives: • To describe what different freehand tools can do. • To use the shape tool and the line tools. • To make careful choices when painting a digital picture • To explain why I chose the tools I used. • To use a computer on my own to paint a picture. • To compare painting a picture on a computer and on paper.	*KS2 NC Objectives:* • To explain that animation is a sequence of drawings or photographs. • To relate animated movement with a sequence of images • To plan an animation. • To identify the need to work consistently and carefully with animations. • To review and improve an animation. • To evaluate the impact of adding other media to animation.	*Ks2 NC Objectives* • To identify that sound can be digitally recorded. • To use a digital device to record sound. • To explain that a digital recording is stored as a file. • To explain that audio changed through editing. • To show that different types of audio can be changed through editing. • To show that different types of audio can be combined and played together. • To evaluate editing choices made.	*KS2 NC Objectives:* • To review an existing website and consider its structure. • To plan features of a web page • To consider the ownership and sue of images (copyright). • To recognise the need to preview pages. • To outline the need for a navigation path. • To recognise the implications of linking to content owned by other people.
			<u>*Why here? Why now?*</u> Pupils are familiar with the mouse / keyboard as inputs / editing for text from term 1. Here we introduce the tools needed to create and modify a digital image. Building on term 1 work. This sets the scene for Media A Y2 Digital Photography in term 6 of cycle A Y1/Y2 – where pupils will take and then modify digital images.	<u>*Why here? Why now?*</u> Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different media units (digital painting / digital photography / digital writing / making music) – they also from the programming work understand sprites and animations. This unit pulls all these skills together to develop stop frame animations – starting from a sequence of drawings or photographs and building up to creating the animations and adding other media (sound) It leads into audio editing in the summer term of Y3/4 cycle A	<u>*Why here? Why now?*</u> Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different media units (digital painting / digital photography / digital writing / making music) – they also from the programming work understand sprites and animations. Earlier this year in the stop-frame animation unit they pulled all these skills together to develop stop frame animations – starting from a sequence of drawings or photographs and building up to creating the animations and adding other media (sound).	<u>*Why here? Why now?*</u> Pupils bring together all their animation / video / audio / picture editing skills plus experience of desktop publishing. This gives them the skills to use the above to build a webpage. (Inc. previewing it). There is also reinforcement of e-safety and copyright issues.
			<u>Key vocabulary:</u> Tool, paintbrush, erase, fill, undo, shape tools, line tool, brush style, brush size	<u>Key vocabulary:</u> Animation, flip book, stop-frame, sequence, image, photograph, onion skimming, delete, frame, media, import, transition	<u>Key vocabulary</u> Audio, record, playback, microphone, speaker, headphones, input, output, sound, record, start, pause, stop, podcast, save, file, selection, open, edit, mixing, time-shift	<u>Key vocabulary:</u> Website, webpage, browser, media, hypertext, mark-up language (HTML), logo, layout, header, copyright, fair use, home page, device, google sites, breadcrumb trail, navigation, hyperlink, subpage, external link, embed
			<u>Core Knowledge</u> • To know which tools to use to make certain marks. • To know how to make marks with square and line tools. • To know how to choose shapes to create a picture. • To know that different paint tools do different jobs. • To know which tools are helpful for certain jobs and why. • To know that pictures can be made in lots of different ways.	**<u>Core Knowledge</u>** • To know how an animation flip book works. • To know how to break down a story into setting, characters, and events. • To know how to use onion skinning to help make small changes between frames. • To know different ways to make an animation better. • To know how to improve an improve an animation based on feedback. • To know that you can add other media to an animation. • To know the reasons for adding other media to an animation.	**<u>Core Knowledge</u>** • To know the digital devices that can record sound and play it back. • To know the inputs and outputs required to play audio and record sounds. • To know the range of sounds that can be recorded. • To know how to improve a recording. • To know what other people include when recording sound for a podcast. • To know why it is useful to be able to save digital recordings. • To know ways in which audio recordings can be altered. • To know the different sounds that can be combined. • To know the editing tools needed to arrange sections of audio. • To know that digital recordings need to be exported to share them.	**<u>Core Knowledge</u>** • To know that websites are written in HTML. • To know the different types of media used on websites. • To know the common features of a web page. • To know what is meant by the term 'fair use'. • To know why to use and where to find copyright-free images. • To know how to add content to a web page. • To know what a navigation path is. • To know why navigation paths are useful. • To know how to link pages using hyperlink. • To know the implications of linking content owned by others.

	Spring 2	***EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.***	**Networks:** **Y2 Information Technology Around Us**	**Networks** **Y4 The Internet**	**Networks** **Y5 Sharing Information**	**Data** **Y6 Introduction to Spreadsheets**
			KS1 NC Objectives: • To recognise and use the features of IT. • To identify technology in the home. • To identify IT equipment beyond school. • To explain how information technology benefits us. • To show how to use IT safely. • To recognise that choices are made when using IT.	*KS1 NC Objectives:* • To describe how networks physically connect to other networks. • To recognise how networked devices make up the internet. • To outline how websites can be shared via the world wide web. • To describe how content can be added and accessed on the world wide web. • To recognise how the content of WWW is created by people. • To evaluate the consequences of unreliable content.	*KS1 NC Objectives:* • To explain that computers can be connected together to form systems. • To recognise the role of computer systems in our lives. • To recognise how information is transferred over the internet. • To explain how sharing information online lets people in different places work together. • To contribute to a shared project online. • To evaluate different ways of working together online.	*KS1 NC Objectives:* • To identify questions that can be answered using data. • To explain that objects can be described using data. • To explain that formula can be used to produce calculated data. • To apply formulas to data, including duplicating. • To create a spreadsheet to plan an event. • To choose suitable ways to present data.
			Why here? Why now? From terms 1 and 3 pupils have become familiar with using a computer – here we expand this with further work on opening / saving files and moving / resizing images. We then expand this work into the wider world of IT and networks focussing on the home and school. E-safety is focussed on (building from term 1) where we look at the rules / ways of staying safe online and the reasons for it. This lays the groundwork for a detailed look at the internet in the Y3/Y4 cycle A.	*Why here? Why now?* From Y1/Y2 cycle A pupils will understand what a computer is and the wider world of digital technology. They will also have an understanding of E-safety. In term 1 of this cycle, they learned about computer systems and networks and how computers can be connected together – particularly the switch / server / WAP – which lays the groundwork for spring 2 unit in Y3/Y4 cycle A – the internet. (THIS UNIT). It also further expands on e-safety issues around passing information between devices developed earlier in the year in the connecting computers unit and expands into copyright issues.	*Why here? Why now?* Pupils have built up their understanding of networks in the previous four networking units (IT / IT around us / connecting computers / the internet) This unit expands this to cover a re-visit of computer systems and the role they play in our lives. Before moving onto internet data transfer methods, unique IP addresses, data transfer by packets and online collaboration / shared working. There is also a refresh on copyright issues and using the work of others. This sets the scene for network communications in year six.	*Why here? Why now?* Pupils have previously built-up skills of collecting and analysing data – by looking at databases and keys. This unit is all about using excel spreadsheets (already encountered in the data logging unit) to create formulas in excel spreadsheets to calculate / answer questions etc. (this work has already been met in the Y5 units on databases.
			Key vocabulary: Information technology (IT), computer, barcode, scanner, scan	Key vocabulary: internet, network, router, security, network switch, server, wireless access point (WAP), router, website, web page, web address, routing, route tracing, browser, World Wide Web (www), content, links, files, download, sharing, ownership, permission, information, accurate, honest, adverts	Key vocabulary: System, connection, digital, input, process, output, protocol, address, packet, chat, slide deck, reuse, remix, collaboration	Key vocabulary: Spreadsheet, data, data heading, data set, cells, columns & rows, application, format, common attribute, formula, calculation, input, output, cell reference, operation, range, duplicate
			Core Knowledge • To know different types of computers. • To know the purpose of information technology in the home. • To know the different uses of information technology. • To know how information technology helps people. • To know how to use information technology responsibly. • To know that information technology has different guidance for usage in different settings.	**Core Knowledge** • To know the internet as a network of networks. • To know how information is shared across the internet. • To know why networks need protecting. • To know the different networked devices and how they connect. • To know the internet allows us to view the World Wide Web (WWW). • To know the WWW is the part of the internet that contains websites and webpages. • To know the different types of media shared on the WWW. • To know that new content can be created online. • To know websites and their content are created by people. • To know that some information online might not be accurate, honest or legal.	**Core Knowledge** • To know that systems are built using a number of parts. • To Know that there are human elements of a computer system. • To know that computer systems communicate with other devices. • To know that data is transferred using agreed methods. • To know that networked digital devices have unique addresses. • To know that data is transferred over networks in packets. • To know that connected digital devices can allow us to access shared files stored online. • To know that the internet allows different media to be shared. • To know the difference between working online and working offline. • To know different ways of working together online. • To know how the internet enables effective collaboration.	**Core Knowledge** • To know how to answer questions from an existing data set. • To know the relevance of data headings. • To know how to apply an appropriate number format to a cell. • To know how to build a data set in a spreadsheet application. • To know what an item of data is. • To know how to construct a formula in a spreadsheet. • To know the relevance of a cells data type. • To know how to identify the changing inputs changes outputs. • To know how to apply a formula to multiple cells by duplicating it. • To know how to create a formula which includes a range of cells. • To know how to apply a formula to calculate the data needed to answer questions. • To know when to use a table or a graph. • To know how to use a graph to show the answer to questions.

Cycle	Term	EYFS	Y1/2	Y3/4	Y4/5	6
Cycle A	Summer 1	**EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.**	**Programming A Y2 Robot Algorithms (Beebots)**	**Programming A Y4 Repetition in Shapes**	**Programming A Y5 Selection in Physical Computing**	**Programming B Y6 Sensing**
			KS1 NC Objectives: • To describe a series of instructions as a sequence. • To explain what happens when we change the order of instructions. • To use logical reasoning to predict the outcome of a program (series of commands). • To explain that programming projects can have code and artwork. • To design an algorithm. • To create and debug a program that I have written.	*KS2 NC Objectives:* • To identify that accuracy in programming is important. • To create a program in a text-based language. • To explain what repeat means. • To modify a count-controlled loop to produce a given outcome. • To decompose a program into parts. • To create a program that uses count-controlled loops to produce a given outcome.	*Ks2 NC Objectives* • To control a simple circuit connected to a computer. • To write a program that includes count-controlled loops. • To explain that a loop can be used to repeatedly check whether a condition has been met. • To conclude that a loop can be used to repeatedly check whether a condition has been met. • To design a physical project that includes selection. • To create a controllable system that includes selection.	*KS2 NC Objectives:* • To create a program on a controllable device. • To explain that selection can control the flow of a program. • To update a variable with a user input. • To use a conditional statement to compare a variable to a value. • To design a project that uses inputs and outputs on a controllable device. • To develop a program to use input and outputs on a controllable device.
			<u>*Why here? Why now?*</u> Building from EYFS and Y1/Y2 cycle A term 2: We reinforce work on commands / logical reasoning / sequences / concept of a simple program / algorithms – before using the Beebots to demonstrate these concepts: Year 2 algorithms: Series of simple instructions – change order of instructions (& explain) – use logical reasoning to predict outcome – design an algorithm – debug the program (concept of debugging introduced in term 6 of EYFS).	<u>*Why here? Why now?*</u> Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different programming units and are secure in: work on sequences / programs / blocks / algorithms / embedding sprites into a program using a sequence of blocks AND how to improve it / debug it. In the autumn term programming unit, they investigated sequencing in music. This unit takes all these skills and gets pupils to create a code snippet for a given purpose – takes the resulting program / algorithm and develops it into count-controlled loops. We also re-visit the skill of decomposing a program into parts.	<u>*Why here? Why now?*</u> This is the 12th programming unit. It re-visits previous work on loops and through this, pupils connect and control a simple circuit using the computer. This is then built up to "the do until loop" / the true or false condition and programming a microcontroller and finally using a loop to check if a true / false condition has been met. There is also the opportunity to test / de-bug the completed system. This lays the ground work for the Y6 unit on sensing.	<u>*Why here? Why now?*</u> . Pupils have built up experience of programming, including selection in Y4 and Y5. Pupils are already familiar with connecting and controlling devices by computer e.g. programming a microcontroller.
			<u>Key vocabulary:</u> Instructions, sequence, clear, unambiguous, algorithm, program, sequence, order, commands, prediction, route, debugging	<u>Key vocabulary:</u> Program, turtle, commands, code snippet, algorithm, design, debug, logo, pattern, repeat, repetition, countcontrolled loop, value, trace, decompose, procedure	<u>Key vocabulary</u> Microcontroller, components, LED, program, repetition, infinite loop, output devices, count-controlled loop, switch, condition, true, false, input, selection, action, debug	<u>Key vocabulary:</u> Microbit, make code, input, process, output, USB, condition, If then else Variable, Random, input, selection, sensing, navigation, compass, algorithm, task, code, debug
			<u>Core Knowledge</u> • To know a series of that can be enacted as a sequence. • To know that there are different algorithms for a range of sequences (using the same commands.) • To know the differences in outcomes between two sequences that consist of the same commands. • To know the choices, I made for my mat design. • To know what my algorithm should achieve. • To know how to test and debus each part of the program.	**<u>Core Knowledge</u>** • To know the effect of changing a value of a command. • To know how to test an algorithm in a text-based language. • To know how to write an algorithm to produce a given outcome. • To know that every day takes include repetition as part of sequencing e.g. brushing teeth, dance moves • To know how to identify patterns e.g. 'step 3 times' means the same as 'step, step, step'. • To know the effect of changing the number of times a task is repeated. • To know that a computer can repeatedly call a procedure. • To know how to develop a program by debugging it.	**<u>Core Knowledge</u>** • To know why to use an infinite loop. • To know to connect more than one output devi e to a microcontroller. • To know that a condition is something that can either be true or false (e.g., whether a value is more than 10, or whether a button has been pressed.) • To know that a condition being met can start an action. • To know that a writing an algorithm can control lights and a motor.	**<u>Core Knowledge</u>** • To know how to apply knowledge of programming to a new environment. • To know how to determine the flow of a program using selection. • To know that if you read a variable, the value remains. • To know how to use a condition to change a variable. • To know the importance of the order of conditions in else is statements. • To know I can modify a program to achieve a different outcome. • To know how to design a program flow for a project. • To know how to create a program based on a design. • To know that I can use a range of approaches to find and fix bugs.

			Media A Y2 Digital Photography	Media A Y4 Audio Editing	Media A Y5 Video Editing	Media B Y6 3D Modelling
	Summer 2	**EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.**	*KS1 NC Objectives:* • To know that devices can be used to take photographs. • To use a digital device to take a photograph. • To describe what makes a good photograph. • To decide how photographs can be improved. • To use tools to change an image. • To recognise that images can be changed.	*KS2 NC Objectives:* • To identify that sound can be digitally recorded. • To use a digital device to record sound. • To explain that a digital recording is stored as a file. • To explain that audio changed through editing. • To show that different types of audios can be changed through editing. • To show that different types of audios can be combined and played together. • To evaluate editing choices made.	*Ks2 NC Objectives* • To recognise video as moving pictures which can include audio. • To identify digital devices that can record video. • To capture video using a digital device. • To recognise features of an effective video. • To identify that video can be improved through reshooting and editing. • To consider the impact of the choices made when making and sharing a video.	*KS2 NC Objectives:* • To use a computer to create and manipulate 3D digital objects. • To compare working digitally with 2D and 3D graphics. • To construct a digital 3D model of a physical object. • To identify that physical objects can be broken down into a collection of 3D shapes. • To design a digital model by combining 3D objects. • To develop and improve a digital 3D model.
			Why here? Why now? Terms 1&3 plus 2&4 have built up knowledge and skills in using computers / inputting & modifying text and pictures / saving & opening files. We now take the skills of the Y1 digital paining unit and apply them to taking and modifying a digital image – using the tools on the computer. We explore how to evaluate the image and explain what makes a good photo / how to improve the photo. We build on E-safety work – with the concepts of fake images / manipulated images and how to identify them. Finally, this unit lays the groundwork for Y1/Y2 cycle B digital writing and making music.	*Why here? Why now?* Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different media units (digital painting / digital photography / digital writing / making music) – they also from the programming work understand sprites and animations. Earlier this year in the stop-frame animation unit they pulled all these skills together to develop stop frame animations – starting from a sequence of drawings or photographs and building up to creating the animations and adding other media (sound). The above leads into audio editing in the summer term of Y3/4 cycle A (this unit) – this in turns supports cycle B work on desktop publishing and photo editing.	*Why here? Why now?* Pupils have previously embedded a range of "media" skills in 9 media units – ranging from simple digital painting, writing, music and photography, through to stop frame animation, audio editing, desktop publishing and photo editing. We now tackle video editing – which combines the visual and audio media. Pupils capture video using a digital device and explore what makes an effective video, the role of re-shooting and editing and finally choices that can be made when making and sharing videos. This will be combined with cycle B work on vector drawing to lay the foundation for web page creation and 3D modelling in Y6.	*Why here? Why now?* This unit expands previous media work on editing audio / photo / video and gives pupils the tools to do this for drawings they have created. It builds on the Y4/Y5 cycles work on vector drawing and including using the zoom tool to add detail alignment grids / re-size handles to modify the drawings.
			Key vocabulary: Device, camera, photograph, capture, images, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, framing, focal point, subject, compose, natural lighting, artificial lighting, flash, focus, background, foreground, editing tools, filter	Key vocabulary: Audio, record, playback, microphone, speaker, headphones, input, output, sound, record, start, pause, stop, podcast, save, file, selection, open, edit, mixing, time shift	Key vocabulary Video, audio/sound recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audio-visual), videographer, video techniques: zoom, pan, tilt, angle, lighting, setting, you tuber, content, camera angle, export, Split, trim/clip, edit, end credits, timeline, transitions, retake/reshoot, special effects, title screen	Key vocabulary: 2D, 3D, view, space, resize, rotate, position, select, duplicate, dimensions, modify
			Core Knowledge • To know how to capture digital photos. • To know the process of taking a good photograph. • To know why a photo looks better in portrait or landscape format. • To know that the light can affect a photograph. • To know that images can be changed. • To know what tools can be used to change an image.	**Core Knowledge** • To know the digital devices that can record sound and play it back. • To know the inputs and outputs required to play audio and record sounds. • To know the range of sounds that can be recorded. • To know how to improve a recording. • To know what other people include when recording sound for a podcast. • To know why it is useful to be able to save digital recordings. • To know ways in which audio recordings can be altered. • To know the different sounds that can be combined. • To know the editing tools needed to arrange sections of audio. • To know that digital recordings need to be exported to share them.	**Core Knowledge** • To know that a video can include both visual and audio media. • To know the benefits of adding audio to a video. • To know the digital devices that can record film and sound. • To know how to choose the most suitable digital device for recording a project. • To know the features of an effective video. • To know why lighting and angles are important in creatin and effective video. • To know what tools to use to improve a video. • To know how to improve a video by reshooting and editing. • To know the impact of choices when making a video will impact on the quality of the final outcome.	**Core Knowledge** • To know the similarities and differences between 2D and 3D shapes. • To know why we might represent 3D objects on a computer. • To know how graphical objects can be modified. • To know what tools are needed to resize and change the colour of a 3D object. • To know what tool are needed to rotate, reposition, and duplicate 3D objects. • To know which 3D shapes are needed to create a model of a real-world object. • To know how to group a digital 3D shape and a placeholder to create a hole in an object. • To know what is needed to improve a model of a real-world object using 3D shapes.

Cycle	Term	EYFS	Y1/2	Y3/4	Y4/5	6
Cycle B	Autumn 1	**EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.**	**Data** **Y1 Grouping Data** *KS1 NC Objectives:* • To label objects. • To identify that objects can be counted. • To describe objects in different ways. • To count objects with the same properties. • To compare groups of objects. • To answer questions about groups of objects. *Why here? Why now?* In cycle A - we focussed on networks / programming / media – building on the EYFS work "computational thinking". We now introduce the concept of data (Y1 grouping data) – how it can be described / grouped / counted / compared / used to answer questions. This lays the groundwork for the Y2 unit data / information & pictograms in term 4 for Y1/Y2 cycle B. Key vocabulary: Object, label, group, search, image, property, data set, value, less, most, fewest, same **Core Knowledge** • To know how to describe objects using labels. • To know the best way to count objects is by grouping. • To know the properties of objects. • To know how to group objects by their properties. • To know that there is more than one way to group objects. • To know how to compare groups of objects.	**Data** **Y3 Branching Databases** *KS2 NC Objectives:* • To create questions with yes / no answers. • To identify the object attributes needed to collect relevant data. • To create a branching database/ • To identify objects using a branching database. • To explain why it is helpful for a database to be well-structured. • To compare the information shown in a pictogram with a branching database. *Why here? Why now?* In cycle B of Y1/Y2 we looked at Y1 grouping data - how it can be described / grouped / counted / compared / used to answer questions AND the Y2 data unit – collecting / analysing of data, understanding that data can be counted and compared using tally charts then represented as a pictogram (on a computer) – moving onto making comparisons / describing people by their attributes – then representing the data using a computer program (MS excel.) This unit builds on this work by creating branching databases AND critically comparing the same information in a branching database with a pictogram (from Y1/Y2 cycle B.) Key vocabulary: Attribute, value, questions, table, objects, branching database, compare, organise, pictogram, decision tree **Core Knowledge** • To know how to create two groups of objects separated by one attribute. • To know how to create a group of objects withing an existing group. • To know how to group objects using yes/no questions. • To know how to create questions and apply them to a tree structure. • To know that questions need to be ordered carefully to split objects into similarly sized groups. • To know what a pictogram is telling me.	**Data** **Y4 Data Logging** *Ks2 NC Objectives* • To explain that data gathered over time can be used to answer questions. • To use a digital device to collect data automatically. • To explain that a data logger collects "data points" from sensors over time. • To use data collected over a long duration to find information. • To identify the data needed to answer questions. • To use collected data to answer questions. *Why here? Why now?* Pupils are already secure in the concepts of collecting and analysing data from the previous 3 data units. Here they start by analysing data already collected over a long period and understand how the data has been collected. They import / sort the data and look at it in different ways. Finally, they use a data logger to collect / interpret and analyse using a computer the data. (This could be linked to a science investigation.) Key vocabulary Data, Table (layout), input device, sensor, data logger, logging, data point, interval, analyse, data set, import, export, logged, collection, review, conclusion **Core Knowledge** • To know how to choose a data set to answer a question. • To know how to answer questions using a given data set. • To know that sensors are input devices. • To know what the data I have captured is telling me. • To know how to use a computer program to sort data. • To be able to propose a question that can be answered using logged data. • To know the benefits of using a data logger.	**No cycle B for Y6 as a single year group**
	Autumn 2	**EYFS is a separate spiral curriculum based upon children's**	**Programming B** **Y1 Programming Animations (Scratch)** *KS1 NC Objectives:* • To choose a command for a given purpose. • To show that a series of commands can be joined together. • To identify the effect of changing a value. • To explain that each sprite has its own instructions. • To design the parts of a project. • To use my algorithm to create a program.	**Programming B** **Y3 Events and Actions** *KS2 NC Objectives:* • To explain how a sprite moves in an existing project. • To create a program to move a sprite in four directions. • To adapt a program to a new context. • To develop my program by adding features. • To identify and fix bugs in a program. • To design and create a maze-based challenge.	**Programming B** **Y4 Repetition in Games** *Ks2 NC Objectives* • To develop the use of countcontrolled loops in a different programming environment. • To explain that in programming there are infinite loops and count controlled loops. • To develop a design which includes two or more loops which run at the same time. • To modify an infinite loop in a given program. • To design a project that includes repetition. • To create a project that includes repetition.	**No cycle B for Y6 as a single year group**

		predictable interests. See separate EYFS curriculum.	*Why here? Why now?* Autumn 2 and summer 1 covered the Y1 and Y2 programming A – building on the EYFS work on sequencing / algorithms / etc. and the programming A (Y1 and Y2) change order of instructions (& explain) – use logical reasoning to predict outcome – design an algorithm – debug the program (concept of debugging introduced in term 6 of EYFS and reinforced in cycle A Y1/Y2) As an introduction to animation: We now introduce different programming tools / sprites (a two-dimensional image or animation that is integrated into a larger scene) Commands to move a sprite – joining a series of commands together to make a program – changing values / blocks / instructions – leading to a simple animation using programming / algorithm / sprites Sets scene for media A in Y3/Y4 cycle A	*Why here? Why now?* This unit re-visits sprites and debugging these concepts have been introduced in Y1/Y2 cycle A and B work plus the Y3/Y4 cycle A work. Pupils explain how a sprite can moves an existing object – then create a program to move it in all 4 directions. They then adapt and develop the program and de-bug / re-test it. This sets the scene for summer term work on repetition in games.	*Why here? Why now?* This is the 8th programming unit after EYFS. Previously this year pupils have revisited sprites and de-bugging these concepts have been introduced in Y1/Y2 cycle A and B work plus the Y3/Y4 cycle A work. Pupils explained how a sprite can moves an existing object – then create a program to move it in all 4 directions. They then adapt and develop the program and de-bug / re-test it. Now they use their knowledge of loops & snippets of code to create a design, which has 2 or more loops running at the same time. They practice modifying and evaluating this. (This again reinforces algorithms and de-bugging concepts)	
			Key vocabulary: ScratchJr, Bee-Bot, command, sprite, compare, programming, block, joining, start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions	Key vocabulary: Motion, sprite, event, algorithm, logic, move, resize, extension block, pen up, set up, action, pen, design, debugging, errors, setup, code, test	Key vocabulary Scratch, programming, sprite, blocks, code, loop, repeat, value, block, forever, infinite loop, count-controlled loop, costume, repetition, animate, event block, duplicate, modify, algorithm, debug, refine	
			Core Knowledge • To know the differences between programming tools. • To know how to use more than one block by joining them together. • To know what happens when I change a value. • To know that a project can include more than one sprite. • To know how to create an algorithm for each sprite. • To know how to ass programming blocks based on my own algorithm.	**Core Knowledge** • To know the relationship between and even and an action. • To know how to improve a program. • To know how to choose a suitable size for a sprite. • To know how to program movement. • To know to consider the real world when making design choices. • To know how to use a programming extension. • To know I can build more sequences of commands to make a design work. • To know how to chose suitable keys to turn on additional features. • To know how to match a piece of code to an outcome. • To know how to modify a program using a design. • To know hot to test a program against a given design. • To know how to make design choices and justify them.	**Core Knowledge** • To know how to modify a snippet of code to create a given outcome. • To know that some programming languages enable more than one process to be run at once. • To know the effectiveness of the repeated sequences used in a program. • To know what the outcome of a repeated action should be. • To know the effect of changes in a loop. • To know that I can re-use an existing code snippet on new sprites. • To know what a design of a project will do. • To know the key parts of a given project and use it to improve a design. • To know how to refine the algorithm in a design.	

Cycle	Term	EYFS	Y1/2	Y3/4	Y4/5	6
Cycle B	Spring 1	**EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.**	**Media B** **Y1 Digital Writing** *KS1 NC Objectives:* • To use a computer to write. • To add and remove text on a computer. • To identify that the look of text can be changed on a computer. • To make careful choices when changing text. • To explain why I used the tools that I chose. • To compare writing on a computer with writing on paper. *Why here? Why now?* Cycle A covered media A (Y1 digital painting & Y2 digital photography.) This unit is all about developing pupils skills with MS word to produce / edit / modify documents – it builds on cycle A work on using computers, plus the media A referenced above. It sits with Media B (Y2 unit) making music in term 6 of cycle B for Y1/Y2 – thus completing all work required to move into Y3/Y4 cycle A – step frame animation and audio editing. Key vocabulary: Word processor, keyboard, keys, letters, Microsoft word, google docs, numbers, space, backspace, text, curser, capital letters, toolbar, bold, italic, underline, font, undo **Core Knowledge** • To know how to use the keys on a keyboard. • To know how to enter text into a computer, using letter, number, space and backspace keys. • To know what the keys that I have learnt about already do. • To know what the toolbar is used for and how to use it to change text. • To know the difference between using a computer to type and using a pencil and paper to write.	**Media B** **Y3 Desktop Publishing** *KS2 NC Objectives:* • To recognise how text and images convey information. • To recognise that text and layout can be edited. • To choose appropriate page settings. • To add content to a desktop publishing publication. • To consider how different layouts can suit different purposes. • To consider the benefits of desktop publishing. *Why here? Why now?* Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different media units (digital painting / digital photography / digital writing / making music.) Here pupils pull all these skills together to create a magazine cover moving, pasting images, and modifying text. Key vocabulary: Text, images, communicate, font, style, template, landscape, portrait, orientation, placeholder, desktop, publishing, copy, paste, layout **Core Knowledge** • To know the difference between text and images. • To know that text and images can communicate messages clearly. • To know that text can be changes to communicate more clearly. • To know the term 'page orientation' means whether the page is landscape or portrait. • To know why placeholders are important. • To know the best locations for specific content and how to edit it once it's been added. • To know why desktop publishing is helpful. • To know the difference between using publisher and doing the work by hand.	**Media B** **Y4 Photo Editing** *Ks2 NC Objectives* • To explain that digital images can be changed. • To change the composition of an image. • To describe how images can be changed for different uses. • To make good choices when selecting different tools. • To recognise that not all images are real. • To evaluate how changes can improve an image. *Why here? Why now?* Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different media units (digital painting / digital photography / digital writing / making music.) Earlier in this, year / cycle pupils pulled all these skills together to create a magazine cover moving, pasting images, and modifying text. They now develop skills of photo editing to improve the composition of digital images and modify their magazine designs. (Links to Y4/5 cycle on video editing) E-safety work around fake images is also emphasised here. Key vocabulary Image, edit, arrange, select, digital, crop, undo, save, search, copyright, composition, pixels, rotate, flip, hue / saturation, sepia, illustrator, vignette, retouch, clone, recolour, magic wand, select, adjust, sharpen, brighten, fake, real, composite, cut, copy, paste, alter, background, foreground, publication, original, font style, layer, border **Core Knowledge** • To know how to make changes to an image. • To know the effect that editing can have on an image. • To know which parts on an image to select to change the composition of it. • To know why someone might want to change the composition of an image. • To know how an image has been retouched. • To know the positive and negative effects that retouching can have on an image. • To know which tools are best for retouching certain images. • To know how to recognise 'fake' or 'real' images. • To know the effects of adding other elements to my own work.	**No cycle B for Y6 as a single year group**

	Spring 2	**EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.**	**Data** **Y2 Pictograms**	**Data** **Y4 Data Logging**	**Data** **Y5 Flat File Databases**	**No cycle B for Y6 as a single year group**
			KS1 NC Objectives: • To recognise that we can count and compare objects using tally charts. • To recognise that objects can be represented as pictures. • To create a pictogram. • To select objects by attribute and make comparisons. • To recognise that people can be described by attributes. • To explain that we can present information using a computer.	*KS2 NC Objectives:* • To explain that data gathered over time can be used to answer questions. • To use a digital device to collect data automatically. • To explain that a data logger collects "data points" from sensors over time. • To use data collected over a long duration to find information. • To identify the data needed to answer questions. • To use collected data to answer questions.	*Ks2 NC Objectives* • To use a form to record information. • To compare paper and computer-based databases. • To apply my knowledge of a database to ask and answer real world questions. • To explain that tools can be used to select data to answer questions. • To apply my knowledge of a data base to ask and answer real-world questions. • To apply my knowledge of a database to ask and answer real-world questions.	
			Why here? Why now? In term 1 of cycle B (Y1/Y2) – we introduced the concept of data (and how it can be described / grouped / counted / compared / used to answer questions) using the Y1 data unit. We now expand this work with the Y2 data unit – collecting / analysing of data, understanding that data can be counted and compared using tally charts then represented as a pictogram (on a computer) – moving onto making comparisons / describing people by their attributes – then representing the data using a computer program (MS excel). This lays the foundations for Y3/Y4 cycle B work on branching databases and data logging.	*Why here? Why now?* Pupils are already secure in the concepts of collecting and analysing data from the previous 3 data units. Here they start by analysing data already collected over a long period and understand how the data has been collected. They import / sort the data and look at it in different ways. Finally, they use a data logger to collect / interpret and analyse using a computer the data. (This could be linked to a science investigation.)	*Why here? Why now?* From previous cycles pupils are already familiar with data – how to group it and compare it, they have also created branching databases and data loggers – with data loggers they have collected and analysed data. A flat-file database is a database stored in a file called a flat file. Records follow a uniform format, and there are no structures for indexing or recognizing relationships between records. The file is simple. A flat file can be a plain text file (e.g. csv, txt or tsv), or a binary file. Relationships can be inferred from the data in the database, but the database format itself does not make those relationships explicit. Pupils will create such a database and learn how to extract information from it using AND / OR to refine data selection.	
			Key vocabulary: Organise, data, object, tally, chart, votes, total, pictogram, compare, count, more than, less than, explain, most common, least common, attribute, block diagram	Key vocabulary: Data, Table (layout), input device, sensor, data logger, logging, data point, interval, analyse, data set, import, export, logged, collection, review, conclusion	Key vocabulary Database, data, information, record, field, sort, order, group, field, record, search, criteria, graph, chart, axis, compare, filter, presentation	
			Core Knowledge • To know how to record data in a tally chart. • To know how to represent a tally count as a total. • To know how to use a computer to view data in a different format. • To know how to use pictograms to answer simple questions about objects. • To know how to use a tally chart to create a pictogram. • To know what a pictogram shows. • To know how to tall objects using a common attribute. • To know how to draw conclusions from a pictogram. • To know how to use a computer program to present information in different ways and how to share this. • To know reasons why some information should not be shared.	**Core Knowledge** • To know which data set to choose to answer a given question. • To know what data can be gathered over time. • To know what questions to ask using a given set of data. • To know that sensors are input devices. • To know that data from sensors can be recorded. • To know how to use data from a sensor to answer a given question. • To know suitable places to collect data. • To know the intervals used to collect data. • To know how to talk about data I have captures. • To know how to import a data set. • To know which computer program to use to sort data. • To know how to view data in different way in different ways. • To know how to collect data using a data logger. • To know the benefits of using a data logger. • To know how to interpret data that has been collected using a data logger.	**Core Knowledge** • To know how information can be recorded. • To know how to navigate a flat-file database to compare different views of information. • To know what a 'field' and a 'record' is in a database. • To know which field to sort data by to answer a given question. • To know how information can be grouped. • To know how to group information to answer questions. • To know how to combine grouping and sorting to answer more specific questions. • To know which field and value are required to answer a given question. • To know which criteria to choose to answer a given question. • To know which chart is best to visually compare data. • To know how to refine a chart by selecting a particular filter. • To know the benefits of using a computer to create graphs. • To know how to refine a search in a real-world contect.	

Cycle	Term	EYFS	Y1/2	Y3/4	Y4/5	6
Cycle B	Summer 1	**EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.**	**Programming B** **Y2 An Introduction to Quizzes (Scratch)**	**Programming B** **Y4 Repetition in Games**	**Programming B** **Y5 Selection in Quizzes**	**No cycle B for Y6 as a single year group**
			KS1 NC Objectives: • To explain that a sequence of commands has a start. • To explain that a sequence of commands has an outcome. • To create a program using a given design. • To change a given design. • To create a program using my own design. • To decide how my project can be improved.	*KS2 NC Objectives:* • To develop the use of countcontrolled loops in a different programming environment. • To explain that in programming there are infinite loops and count controlled loops. • To develop a design which includes two or more loops which run at the same time. • To modify an infinite loop in a given program. • To design a project that includes repetition. • To create a project that includes repetition.	*Ks2 NC Objectives* • To explain how selection is used in computer programs. • To relate that a conditional statement connects a condition to an outcome. • To explain how selection directs the flow of a program. • To design a program which uses selection. • To create a program which uses selection. • To evaluate my program.	
			Why here? Why now? Builds on cycle A programming and cycle B - programming animations (see term 2 why here / why now?) Y2 programming unit (this unit) – reinforces / revisits the work on sequences / programs / blocks / algorithms and extends this into embedding sprites into a program using a sequence of blocks AND how to improve it (inc. a re-visit of de-bugging.) This lays the groundwork for Y3/Y4 cycle A work on programming using sequences in music and repetition in shapes.	*Why here? Why now?* This is the 8th programming unit after EYFS. Previously this year pupils have revisited sprites and de-bugging these concepts have been introduced in Y1/Y2 cycle A and B work plus the Y3/Y4 cycle A work. Pupils explained how a sprite can moves an existing object – then create a program to move it in all 4 directions. They then adapt and develop the program and de-bug / re-test it. Now they use their knowledge of loops & snippets of code to create a design, which has 2 or more loops running at the same time. They practice modifying and evaluating this. (This again reinforces algorithms and de-bugging concepts)	*Why here? Why now?* This unit is all about selection – it builds on previous programming units where pupils looked at selection in physical computing – it expands selection using loops (again already visited) – looking at if / then / else statements and combines this to create program flows using branching according to condition. Finally, it gives pupils the chance to implement the algorithm to create the first selection of the program (reenforcing previous work on algorithms). This sets the scene for the variables in games unit in year 6.	
			Key vocabulary: Sequence, command, program, run, start, outcome, predict, blocks, sprite, algorithm, design, actions, project, modify, debug	Key vocabulary Scratch, programming, sprite, blocks, code, loop, repeat, value, block, forever, infinite loop, count-controlled loop, costume, repetition, animate, event block, duplicate, modify, algorithm, debug, refine	Key vocabulary Selection, condition, true, false, countcontrolled loop, outcomes, conditional, statement, algorithm, program, debug, answer, task, input, implement, test, run, condition	
			Core Knowledge • To know that a program needs to be started. • To know how to identify the star of a sequence. • To know how to change an outcome of a sequence of commands. • To know the actions of a sprite in an algorithm. • To know how to create a program based on a new design. • To know how to build a sequence of blocks to match a design. • To know how to create an algorithm. • To know how to debug. • To know how to improve a project by adding features.	**Core Knowledge** • To know how to modify a snippet of code to create a given outcome. • To know that some programming languages enable more than one process to be run at once. • To know the effectiveness of the repeated sequences used in a program. • To know what the outcome of a repeated action should be. • To know the effect of changes in a loop. • To know that I can re-use an existing code snippet on new sprites. • To know what a design of a project will do. • To know the key parts of a given project and use it to improve a design. • To know how to refine the algorithm in a design.	**Core Knowledge** • To know conditions in a program. • To know how to modify a condition in a program. • To know how to create a program with different outcomes using a selection. • To know how to us a selection in an infinite loop to check a condition. • To know that a program flow can branch according to a condition. • To know that a condition can direct a program flow in one of two ways. • To know how to identify the outcome of a used input in an algorithm. • To know how to implement an algorithm to create the first selection of a program. • To know how to identify ways a program can be improved. • To know how to extend a program further. • To know how to identify what setup code a project needs.	

	Summer 2	**EYFS is a separate spiral curriculum based upon children's predictable interests. See separate EYFS curriculum.**	**Media B** **Y2 Making Music**	**Media B** **Y4 Photo Editing**	**Media B** **Y5 Vector Drawing**	**No cycle B for Y6 as a single year group**
			KS1 NC Objectives: • To say how music can make us feel. • To identify that there are patterns in music. • To describe how music can be used in different ways. • To show music is made from a series of notes. • To create music for a purpose. • To review and refine our computer work on music.	*Ks2 NC Objectives* • To explain that digital images can be changed. • To change the composition of an image. • To describe how images can be changed for different uses. • To make good choices when selecting different tools. • To recognise that not all images are real. • To evaluate how changes can improve an image.	*Ks2 NC Objectives* • To identify that drawing tools can be used to produce different outcomes. • To create a vector drawing by combining shapes. • To use tools to achieve a desired effect. • To recognise that vector drawings consist of layers. • To group objects to make them easier to work with. • To evaluate my vector drawing.	
			Why here? Why now? This unit (Media B – Y2 Making Music) combines with the other 3 Media A / B units in Y1/Y2 cycle A / cycle B to give pupils all the skills needed to access Y3 / Y4 cycle A work especially – sequencing in music and audio editing. It helps pupils identify patterns in music, which allow them to link this to notes – it also allows pupils to play / modify / review work on music using a computer. Finally, it re-visits rhythm and patterns work and allows pupils to link this with images & sounds. (Again supporting Y3/4 cycle A work.)	*Why here? Why now?* Across Y1 / Y2 cycles A & B pupils have been exposed to 4 different media units (digital painting / digital photography / digital writing / making music.) Earlier in this, year / cycle pupils pulled all these skills together to create a magazine cover moving, pasting images, and modifying text. They now develop skills of photo editing to improve the composition of digital images and modify their magazine designs. (Links to Y4/5 cycle on video editing) E-safety work around fake images is also emphasised here.	*Why here? Why now?* This unit is about using drawing tools to create vectors (made of shapes) – including using the zoom tool to add detail alignment grids / re-size handles to modify the drawings. It expands previous media work on editing audio / photo / video and gives pupils the tools to do this for drawings they have created. This lays the foundations for the 3D modelling unit in Y6.	
			Key vocabulary: Music, pattern, rhythm, pulse, tempo, pitch, notes, instrument, open, edit	Key vocabulary Image, edit, arrange, select, digital, crop, undo, save, search, copyright, composition, pixels, rotate, flip, hue / saturation, sepia, illustrator, vignette, retouch, clone, recolour, magic wand, select, adjust, sharpen, brighten, fake, real, composite, cut, copy, paste, alter, background, foreground, publication, original, font style, layer, border	Key vocabulary Vector, drawing tools, shapes, object, icons, toolbar, vector drawing, move, resize, rotate, duplicate / copy, zoom, select, rotate, alignment grid	
			Core Knowledge • To describe how music makes me feel e.g. happy or sad • To know how to identify simple differences in pieces of music. • To know that music is create and played by humans. • #To know how to relate an idea to a piece of music. • To know how to change pitch a duration using a computer. • To know that music is sequence of notes. • To know how to use a computer to create a musical pattern using three notes. • To know how to save a piece of work. • To know how to make my work better. • To know how to reopen work.	**Core Knowledge** • To know how to make changes to an image. • To know the effect that editing can have on an image. • To know which parts on an image to select to change the composition of it. • To know why someone might want to change the composition of an image. • To know how an image has been retouched. • To know the positive and negative effects that retouching can have on an image. • To know which tools are best for retouching certain images. • To know how to recognise 'fake' or 'real' images. • To know the effects of adding other elements to my own work.	**Core Knowledge** • To know that vector drawings are made using shapes. • To know what the main drawing tools are. • To know the difference between a vector drawing and a hand drawn drawing. • To know how to identify the shapes used to make a vector drawing. • To know that each element added to a vector drawing is an object. • I know how to move, resize and rotate objects that have been duplicated. • I know how to use the zoom to help me add detail to my own drawings. • I know how alignment grids and resize handles can be used to improve consistency. • I know how to modify object to create different effects. • I know that each added object creates a new layer in the drawing. • I know that I can reuse a group of objects to further develop my vector drawing. • I know how to create alternatives to vector drawings. • I know how to make improvements to a ector drawing from what I have learnt.	