		EYFS Curriculum Topics				
		Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
EYFS Topics		What's your superpower?	Castles, Knights and dragons	Zoom to the moon	Dinosaurs Rock	The wheels on the bus go round and round	Hullaballoo at the zoo
EYFS Statements related to Computing		Expressive Arts and Design (ELG) -Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. -Share their creations, explaining the process they have used. Use ipads and digital cameras to take self-portraits and portraits of others. Linked to Seydou Keita in BHM.	Communication and Language (ELG) -Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher. Use of voice recording microphones or ipads to self-evaluate spoken responses	Literacy (ELG) -Use and understand recently introduced vocabulary during discussions about stories, nonfiction, rhymes and poems and during role play -Write simple phrases and sentences that can be read by others Use of beebots to sequence steps, introduce new vocabulary and get children to retell and write a journey for the beebot (could be dressed as a ladybird and used to support What the Ladybird heard and a large version of the farmyard as a map).	Expressive Arts and Design (ELG) -Invent, adapt and recount narratives and stories with peers and their teacher. Use of technology in role play areas eg. old phones, laptops and keyboards to help develop narratives of Emergency service workers.	Physical Development (ELG) - Begin to show accuracy and care when drawing. Use of doodle buddy on the ipads to create digital minibeast artwork in provision And https://scratch.mit.edu/projects/645183811/fullscreen/ To support The Very Hungry Caterpillar and understanding of sequencing	Communication and Language (ELG) -Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions. -Make comments about what they have heard and ask questions to clarify their understanding. Use of unplugged activities (Barefoot computing) to give precise instructions to a robot to pack a suitcase for a holiday

Knowledge in red is aimed at year 1, Knowledge in green is aimed at year 2, Knowledge in black is aimed at both year 1 & 2

Year 1/2 CYCLE A	Advent 1	Advent 2	Lent 1
Topic	Computing Systems and Networks 1 **Technology around us**	Programming A1 **Moving a Robot**	Programming B1 **Introduction to animation**
Core Knowledge (National Curriculum)	-Know names and examples of information technology NC: - Recognise common uses of information technology beyond school - Use technology purposefully to **create**, organise, **store, manipulate** and retrieve digital content	-Know how to use individual commands to program a floor robot -Know that an algorithm is a set of instructions that tells to program what to do NC: - Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - Create and debug simple programs - Use logical reasoning to predict the behaviour of simple programs	-Know how to use programming blocks to use, modify and create programs -Know what a sprite is in Scratch Jnr -Know how to add programming blocks based on an algorithm NC: - Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - Create and debug simple programs - Use logical reasoning to predict the behaviour of simple programs
Wider Knowledge	-Know parts of a computer -Know some ways to use technology safely -Know how we might use examples of information technology	-Know that a computer program is the implementation of an algorithm on a digital device -Know that I can predict program outcomes by 'reading' the code -Know that I can debug a program by changing the code	-Know that an algorithm is a set of instructions that tells to program what to do -Build on knowledge from Programming A1
Skills	-Know how to use a mouse and keyboard - Know how to log on to a computer	-Know how to program a set of commands to make a sequence -Know that the command buttons are the input for the algorithm	-Know which commands move a sprite -Know how to join programming blocks together to join a series of commands together -Know how to start and run my program

		-Know how to start a sequence from the same place -Know how to choose the order of commands in a sequence	-Know how to change a value in certain programming blocks -Know how to change the background of my program -Know how to delete a sprite
Diversity Links	Dr. Mark Dean holds three of the original nine patents on the computer that all PCs are based upon		
Vocabulary	Technology, information technology, computer, mouse, keyboard, file, laptop, click, drag, screen, cursor, trackpad	Ask, design, code, algorithm, program, command, sequence, debug	Sprite, background, command, block, algorithm, program, code, debug
Evidence	L4- paintz.app typing L5- Poster L6- edited paintz.app typing	Photo of chn setting up route and entering commands. Saved to class file on server.	Project design worksheet lesson 5. Scanned in and saved to class folder on server

Year 1/2 CYCLE A	Lent 2	Pentecost 1	Pentecost 2
Topic	Computing systems and Networks 2 **IT around us**	Programming A2 **Robot Algorithms**	Programming B2 **Introduction to quizzes**
Core Knowledge (National Curriculum)	-To know examples of information technology around us and beyond school - To know how these bits of IT can be used NC: - Recognise common uses of information technology **beyond school** - Use technology purposefully to **create,** organise, **store, manipulate** and retrieve digital content	-Know how to sequence instructions -Know how to predict the outcome of a program -Know how to design an algorithm -Know how to debug a simple algorithm NC: - Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - Create and debug simple programs	- Know how to use different blocks of code to create a quiz - Know that sequences of commands have an outcome NC: - Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - Create and debug simple programs

		• Use logical reasoning to predict the behaviour of simple programs	Use logical reasoning to predict the behaviour of simple programs
Wider Knowledge	- Know that information technology can benefit and help us -Know that information technology can be connected -Know how to use information technology safely	- Know how to plan an algorithm to meet a goal -Know how to put different parts of a program in the correct order - Know directional vocabulary	- Know where the start of a sequence is - Know how to 'read' a sequence of commands and predict the outcome - Know how to edit features of a design such as background and character -Know that quiz questions need answers
Skills	Identify different examples of computers and information technology in shops, hospitals and the home. Explain how technology can be beneficial.	To develop and give clear, unambiguous instructions. Use logical reasoning to make predictions Test sequences to see how differences in the algorithm affect the outcome	Read, write and design simple sequences of code to create a desired outcome. Edit and debug simple algorithms. Manipulate features of program design. Build sequences of command blocks to match a design. Compare final project to design.
Diversity Links		Katherine Johnson Her work as a mathematician and "human computer" was critical to the success of the NASA US Space Programme in the 1950s and 60s. She was keen to learn quickly and asked lots of questions in her role at NASA, which led to her working on the project to get people into space. She researched using geometry for space travel and ultimately her analyses were used to send people to the Moon.	
Vocabulary	Device, information technology, computers, barcode,	Robot, beebot, command, instruction, sequence, algorithm, program, outcome, predict, debug, artefact, decomposition	Block, code, command, instructions, sequence, algorithm, program, debug, run, select, background, character, sprite, design, project
Evidence	L2- sorting of IT uses document L3- sorting of global IT uses L5- Matching of rules L6- Poster	L3- Predictions L6- Debugging worksheet	L6- give chn screenshot of their saved project printed out- chn to annotate

Year 1/2 CYCLE B	Advent 1	Advent 2	Lent 1
Topic	Creative Media 1a **Digital Painting**	Data and Information 1 **Grouping Data**	Creating Media 1b **Digital Writing**
Core Knowledge (National Curriculum)	-Know how to use paint tools to make a digital drawing -Know that different paint tools do different jobs NC: • Use technology purposefully to **create**, organise, **store manipulate and retrieve digital content** • Use technology safely and respectfully	- Know how to label different groups of data NC: • Use technology purposefully to create, organise, store manipulate and retrieve digital content • Use technology safely and respectfully	-Know how to use a keyboard to write on a keyboard -Know how to add and remove text on a computers -Know how to edit text font NC: • Use technology purposefully to create, organise, store manipulate and retrieve digital content • Use technology safely and respectfully
Wider Knowledge	Know how to change the colour of selected tool Know how to change dot size	-Know that work I create belongs to me -Know that computers are not intelligent-they need input from humans -Know that computers can group and present data -Build on knowledge from WRM Reception and Year 1 on counting and categorising	- Know where the toolbar is -Know that I can use keys to create capital letters -Build on knowledge from phonics and English to know how to write a sentence and that a sentence needs punctuation.
Skills	- Use shape and line tools -Reference other artist's work when creating own digital artwork ***EXTRA TIME IN FIRST 2 LESSONS TO PRACTISE LOGGING ON FOR YEAR 1 PUPILS***	-Name work so that others know it belongs to me	Use the keyboard to enter letters, numbers and spaces. Use the backspace key to remove text. Double click a word to select it. Change the font. Use the 'undo' button to remove changes

Diversity Links	Look at https://www.africandigitalart.com/		
Vocabulary	Tool, select, dot, line, shape, colour	Property, data, group, label, data set, object,	Key, backspace, cursor, toolbar, text, font, undo
Evidence	Save paintings from lessons 3, 4 and 5 onto class server	J2e screenshots and worksheets scanned in	Saved word documents onto class server

Year 1/2 CYCLE B	Lent 2	Pentecost 1	Pentecost 2
Topic	Creating Media 2a **Digital Photography**	Creating Media 2b **Making music**	Data and Information 2 **Pictograms**
Core Knowledge (National Curriculum) Declarative Procedural	- To know that different devices can capture photographs -Know that images can be edited with software -Know that not all images they see are real NC: Use technology purposefully to **create,** organise, **store manipulate and retrieve digital content**	-To use a computer to create a musical pattern NC: Use technology purposefully to **create,** organise**, store manipulate and retrieve digital content**	-Know what data is -Know that I can use attributes to organise data -Know how to present data with a pictogram NC: Use technology purposefully to create, organise, store manipulate and retrieve digital content
Wider Knowledge	-Know what constitutes good photography composition -Know that light affects photos -Know that you can focus on an object	- Know that images can be linked with sounds on a computer -To link certain sounds and patterns with emotions -Know that work I create belongs to me	- Know that we collect data from the world around us -Know what an attribute is -Know that data can be organised and presented in different ways

			-Build on knowledge of Year 1 and 2 Maths (represent numbers using object and pictorial representations and interpret and construct simple pictograms and tally charts)
Skills	To use an ipad to take digital photos. To manipulate light and focus options to change the photograph. To take photos in both landscape and portrait	-Identify simple differences in music -Identify patterns in music -Learn how to save work	To recognise and categorise attributes. To record data on a computer using tally charts and pictograms. To use pictograms and tally charts to answer questions
Diversity Links	James Barnor. Black British photographer who mixed photojournalism with fashion photography- great composition of photos for the children to look at. @JoeKenneth_ Captivating pictures from around the globe, Joe Kenneth's Instagram feed is nothing short of a millennial cultural trip; from classic London to gondolas in Venice and every beautiful thing in between.	Link to Pharrell Williams- own music and producer	
Vocabulary	Photograph, device, camera, landscape, portrait, focus, light, edit, composition, adjust, effect, flash, artificial light, image	Rhythm, pattern, music,	Data, attribute, object, tally chart, pictogram
Evidence	Photos saved to class server	Assessment only	Worksheets and J2e screenshots

Year 3/4 CYCLE A	Advent 1	Advent 2	Lent 1
Topic	Computing systems and Networks 3 **Connecting Computers**	Programming A3 **Sequence in Music**	Programming B3 **Events and Actions**
Core Knowledge (National Curriculum)	- Know that digital devices accept inputs -Know that digital devices produce outputs -Know that a computer network is made up of a number of devices NC: • **Understand computer networks** including the internet; how they can provide multiple services, such as the World Wide Web; and the **opportunities they offer for communication and collaboration**	- Know how to join blocks of code together - Know how to sequence commands to create a desired outcome NC: • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • **Use sequence, selection** and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work, and to detect an correct errors in algorithms and programs	- Know that actions will cause events - Know that problems in a program are called bugs - Know that bugs in programs can be fixed and thus produce the desired outcome or event NC: • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • **Use sequence, selection** and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work, and to detect an correct errors in algorithms and programs
Wider Knowledge	Know that digital devices and networks can help us.	Know that commands in Scratch are represented by blocks	Know that events are caused by an action Know what a maze is

	Know that we use a computer network and the internet in school.	Know that code can be copied Know that different inputs (motion and sound) can be combined in one sequence	Know that keys can be used as an action input to cause and event
Skills	To be able to follow a process, explain how messages are passed through multiple connections. Draw, fill and edit on digital painting software.	Edit the appearance of sprites with their 'costumes' Create a design based on a task description. Select relevant objects and commands needed for a program to work. Connect sequences of code to implement their algorithm	Evaluate existing programs and suggest improvements Debug existing programs Select appropriate attributes of a sprite (eg size) for a design Evaluate their own work
Diversity Links	Mark Dean Mark Dean worked at IBM for over 30 years, and was a key pioneer in the invention of PCs and their ability to communicate with other devices. His work also led to the development of computer plug-ins such as disk drives and printers. He holds 20 patents and made computing accessible to all.	Look at Rodney Jerkins	
Vocabulary	Input, process, output, connections, network, server, wireless access point	Blocks, motion block, sound block, event block, sequence, sprite, algorithm, code, program, design	Events, action, sequence, sprite, pen block, code
Evidence	Exploring inputs and outputs worksheet School network scavenger hunt worksheet	Saved scratch project	Saved scratch project

Year 3/4 CYCLE A	Lent 2	Pentecost 1	Pentecost 2
Topic	Computing systems and Networks 4 **The Internet**	Programming A4 **Repetition in Shapes**	Programming B4 **Repetition in Games**

Core Knowledge (National Curriculum)	- Know that the internet is a network of networks - Know that the world wide web is part of the internet - Know that the content of the WWW is created by people NC: • Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration	- Know that you can program a computer by typing commands - Know that you can use a repeat command in code as part of a sequence - Know what a count-controlled loop is -Know how to use a repeat command NC: • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • **Use sequence, selection and repetition in programs;** work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work, and to detect an correct errors in algorithms and programs	- Know what infinite loops are - Know the difference between count-controlled loops and infinite loops - Know where repetition is useful in an algorithm of my own design -Know how to use repetition in an algorithm NC: • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • **Use sequence, selection and repetition in programs;** work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work, and to detect an correct errors in algorithms and programs
Wider Knowledge	Know that one network can share messages with another network to form the internet Know that networks need to be kept secure Know that different types of media can be shared on the internet Know that not everything they see on the internet is true	Know that you can 'test' an algorithm to help find bugs. Know that repetition of code blocks helps make an algorithm more efficient Know that a count-controlled loop can produce a given outcome	Know that you can reuse existing code snippets on different/multiple sprites
Skills	Access the internet, create media which can be found on websites	Debug code and test and review their own algorithms. Identify patterns and repetition in sequences e.g. brushing teeth	Predict and modify outcomes of snippets of code Think about where count controlled and infinite loops might be useful

		Predict the outcome of a program containing a count- controlled loop Design own program that includes count-controlled loops	Design a game based on a model project Produce a design and algorithm for sprites. Evaluate their design and modify it as necessary Create a project that includes repetition
Diversity Links	Link to Alan Emtage. The Black Technologist who invented ARCHIE, the first Internet search engine (Also mentioned in Year 5/6 unit)		Link to Clarence 'Skip' Ellis. Contributed to object based programming software.
Vocabulary	Network, internet, world wide web, router, website, secure	Logo, repeat, algorithm, code, debug , procedure, count-controlled loop, chunk, code snippets,	Repetition, infinite loop, count controlled loop
Evidence	Features of a website worksheet Who does this belong to worksheet Summative assessment	Project saved from scratch onto class server	Project saved from scratch onto class server

Year 3/4 CYCLE B	Advent 1	Advent 2	Lent 1
Topic	Creating Media 3a **Animation**	Data and Information 3 **Branching Databases**	Creating Media 3b **Desktop Publishing**
Core Knowledge (National Curriculum)	- Know what stop frame animation is -Know that a series of images can be combined to make an animation - Know how to create consistent frames and edit them to create a stop frame animation NC:	-Know what a branching database is -Know that attributes can be used to sort or group data - Know that objects can be identified by using a branching database NC:	- Know the difference between text and images - Know how to change font style, size and colour -Know what desktop publishing is used for and what it's benefits are NC:

	• **Select, use** and **combine a variety of software** (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully and responsibly	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information
Wider Knowledge	Know that an animation, like a story, needs characters, setting and events Know that stop frame animations happen with a series of tiny changes between frames. Know how to search online for content which can be reused by others.	Know what an attribute is Know that questions need to be ordered carefully to split objects into the correct group	Know what placeholders are and why they are important. Know how to draft non-narrative material. Know how to use simple organisational devices. Know how to use search engines safely.
Skills	To create a storyboard of appropriate length for a stop frame animation. Break a story down into settings, characters and events. Draft a storyboard and review how achievable it is. Review own work and evaluate the quality of an animation.	Create questions with yes/no answers. Group objects/data by one attribute. Arrange objects into a tree structure. Explain why it's helpful for databases to be well-structured. Select a theme and design appropriate questions for this theme.	Choose the best location, orientation and layout of content. Copy and paste text and images. Match layouts to purpose
Diversity Links	Handel Euguene- helped with the animation on Spider-man Homecoming, and Black Panther		When searching for images online for the magazine front cover, link to Alan Emtage. The Black Technologist who invented ARCHIE, the first Internet search engine
Vocabulary	Animation, stop frame animation, frame, onion skinning, sequence, consistent, character, event, setting	Database, branching database, attributes, pictogram	Text, images, font, templates, orientation, placeholders
Evidence	iMotion video on ipads	Screenshots/annotations of j2e database	Saved publisher document onto class server

Year 4	Lent 2	Pentecost 1	Pentecost 2
Topic	Creating Media 4a **Audio Editing**	Creating Media 4b **Photo Editing**	Year 4 – Data and Information **Data Logging**
Core Knowledge (National Curriculum)	- Know that you can record sound digitally -Know how to use a digital device to record sound Know how to use editing tools to arrange sections of audio NC: • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully and responsibly	- Know that digital images can be edited - Know that not all digital images are real - Know how to edit images including retouching NC: • Use search technologies safely • Use technology safely, respectfully and responsibly • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information	- Know that data can be collected over time using sensors - Know that not all data can answer all questions - Know how to collect data with a data loggers - Know how to download data from a data logger and analyse the data NC: • Use sequence, selection and repetition in programs; work with variables and various forms of **input** and output • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals,

			including collecting, analysing, evaluating, and presenting data and information
Wider Knowledge	To choose suitable sounds to include in a podcast Know that digital recordings need to be exported to share them To suggest improvements to a digital recording	- Know ways in which people might make themselves look different online - Know that ownership of content needs to be considered before reusing it	- Know that sensors can be connect to data loggers which can collect data whilst not attached to a computer Know that data from a data logger can be downloaded for later use
Skills	identify the inputs and outputs required to play audio or record sound Plan and write the content for a podcast Save a digital recording as a file Edit sound files	Use the clone stamp, recolour tool, magic wand, cropping tool and lasso select tool with digital images. Identify changes that have been made to images and why people would alter images in that way. Explain positive and negative effects of retouching Consider what fake images they may encounter in real life	Discern what can and can't be answered by collecting and using available data. Reflect on the importance the importance of collecting the right data Use software to find out key information about a data set Import a data set Use software to sort data
Diversity Links	Give example of Black in Science- a podcast dedicated to celebrating the work and lives of black people in the sciences	Look at art work from Jade Purple Brown- great examples of using colour effectively.	
Vocabulary	Logo, repeat, algorithm, code, debug , procedure, count-controlled loop, chunk, code snippets,	Digital image, retouch, original vs edited, text, light, colour, border, shape, crop, clone stamp,	Data, information, sensor, data points, data sets, logging intervals
Evidence	Podcast segments saved from audacity to server	Photos saved onto class server	Data saved onto Arduino/Google Science journal Data collection report L6

Year 5/6 CYCLE A	Advent 1	Advent 2	Lent 1
Topic	Computer systems and Networks 5	Programming A5	Programming B5

	Systems and searching	Selection in physical computing	Selection in quizzes
Core Knowledge (National Curriculum)	- Know what a system is -Know how information is transferred between systems and devices - Know that working together on the internet can be public or private - Know that search engines rank results NC: • Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration • **Design**, write, and debug programs that accomplish specific goals, including **controlling or simulating physical systems**; solve problems by decomposing them into smaller parts • Select, **use and combine a variety of software (including internet services)** on a range of digital devices to design and create a range of programs, systems, and content **that accomplish given goals**, including collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully and responsibly	- Know what physical computing is - Know that a crumble controller is a microcontroller used for programming -Know that conditions in algorithms and programs can be used to control a flow of actions NC: • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work, and to detect an correct errors in algorithms and programs	- Know what selection is in programming - Know how to ask questions in a program and use selection to control the outcome NC: • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work, and to detect an correct errors in algorithms and programs • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content		
Wider Knowledge	Know how information is transferred over the internet	Know that components can be connected to microcontrollers and programmed (e.g. LEDs and motors). Know what a simple circuit is	Know that 'if…then…else…' structure can be used to select different outcome depending on whether a condition is true or false Know that the answer to a question is a condition
Skills	Explain the benefits of different computer systems Send information over the internet in different ways Compare different search engines	Group work Build a simple circuit Connect input and output devices to a crumble controller Design a sequence for given output devices Program a microcontroller to respond to an input Design a physical project which include selection Test and debug a program	Evaluate own work Identify and modify conditions in a program Create a program that uses selection to produce different outcomes
Diversity Links	Link to Alan Emtage. The Black Technologist who invented ARCHIE, the first Internet search engine (Also mentioned in Year 4 unit)		Kimberley Bryant Kimberley Bryant is the founder of Black Girls Code – an organisation that encourages Black girls to pursue careers in technology, and gives them the skills they need to do this. After discovering that there were no suitable courses for her daughter to study coding and having a similar experience herself at that age, Bryant established Black Girls Code to empower girls – especially those from minority populations – to get involved in STEM. The organisation aims to teach a

			million Black girls to code by 2040, and has taught 3,000 to date.
Vocabulary	System, Small-scale system, large-scale systems, transfer, packet, address, rank, search engine	Physical computing, microcontroller, crumble, component, output device, conditions, action, algorithm, program, input device, repetition, conditions (if, then), infinite loop, count controlled loop	Selection, condition, program, programming, algorithm, binary, binary question (yes or no answer)
Evidence	Sending information worksheet	Photo evidence of chn using crumbles saved onto server	Scratch project saved onto class server

Year 5/6 CYCLE A	Lent 2	Pentecost 1	Pentecost 2
Topic	Computer systems and Networks 6 **Communication and collaboration**	Programming A6 **Variables in games**	Programming B6 **Sensing**
Core Knowledge (National Curriculum)	- Know how data is transferred over the internet NC: • Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that	- Know what a variable is in programming - Know that variables are named and can be letters or numbers NC: ● Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● Use logical reasoning to explain how some simple algorithms work and	- Know what a micro:bit is -Know how to design a program for a physical controller NC: ● Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

	accomplish given goals, including collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully and responsibly • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	to detect and correct errors in algorithms and programs ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
Wider Knowledge	Know what an IP address is Know what a Domain Name Server is	Know that the value of a variable can be changed	Know that checking a variable doesn't change its value
Skills	Complete shared projects and work together Evaluate different methods of communication Consider what should and should not be shared on the internet Categorise different forms of internet communication Assess the benefits and potential risks of sharing information online	Decide where in a program to change a variable Add variables to a program Design and test a program Evaluate each other's work Predict outcomes of programs	Combine multiple programming skills from KS2 into one unit (repetition, selection and variables) Apply knowledge of programming to a new environment Evaluate design and outcome
Diversity Links	Marian R. Croak Marian R. Croak is the reason we can now make video calls to work from home and see friends and family all over the world without leaving the house. Her work in the 1990s contributed to the Voice Over Internet Protocol (VOIP). Today, she has over 200 patents and is a Vice President at Google. She is passionate about making sure Artificial Intelligence is used responsibly and to have a positive impact on society.		Roy Clay Roy Clay was a programmer who is often referred to as the Godfather of Silicon Valley, thanks to his contributions to the industry. His work shaped HP and technology, developing the HP 2116A minicomputer in the 1960s. He also established a number of programs to encourage and support people from minority backgrounds to get involved in technology and science.

Vocabulary	Transfer, data packets, header, data payload, addressing, IP address, Domain Name Server (DNS), protocol	Variable, placeholder, program,	Input, process, output, program, algorithm, debug,
Evidence	Web page design L3 scanned in Choosing how to communicate worksheet	Scratch project saved onto class server	Photo evidence of chn using micro:bits saved onto server

Year 5/6 CYCLE B	Advent 1	Advent 2	Lent 1
Topic	Creating Media 5a **Vector Drawing**	Creating Media 5b **Video Editing**	Data and Information 5 **Flat-file databases**
Core Knowledge (National Curriculum)	- Know what a vector image is - Know that vector images are made up of shapes NC: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information	- Know how to capture video footage on a digital device - Know that video can include both audio and visual media - Know how to export video from a digital device to a computer NC: Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information	- Know what a flat-file database is. - Know that databases consist of records and fields. NC: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information
Wider Knowledge	-Know that images can be layered, grouped and/or duplicated	Know how to safely handle digital devices to record video	-Know that multiple criteria can be chosen to answer a given question

	- Know that detail can be added to drawing using the zoom tool -Know that alignment grids and resize handles improve the consistency of a drawing	Know the history of film and where it started and when audio was introduced to visual media.	-Know that databases can help answer questions about a data set
Skills	Use different drawing tools to create a vector image Move, resize, rotate and change objects to create a vector drawing Copy parts of a drawing by duplicating several objects at a time Layer different images Evaluate own work	Capture, edit and manipulate video Group work Reflect on and assess own progress Suggest and execute edits to video footage	Create a paper and a digital database Order, sort and group data Discuss what makes a useful group of data and a useful chart
Diversity Links	Katherine Johnson Her work as a mathematician and "human computer" was critical to the success of the NASA US Space Programme in the 1950s and 60s. She was keen to learn quickly and asked lots of questions in her role at NASA, which led to her working on the project to get people into space. She researched using geometry for space travel and ultimately her analyses were used to send people to the Moon.	History of film (Lesson 1) Noble Johnson. Contemporary example-Reggie Yates. Started off presenting and went into screenwriting and directing.	
Vocabulary	Vector, drawing tool, object (each element of a vector drawing) resize, rotate, alignment grid, resize handle	Video, audio, visual, export, edit, record, framing, microphone, integrated, audiovisual, volume, lens, zoom, angle, pan (movement), transition effect	Data base, flat-file database, record, fields, chart, filter
Evidence	Saved vector drawing/annotations	Saved videos onto class server	Saved database/annotations onto class server

Year 5/6 CYCLE B	Lent 2	Pentecost 1	Pentecost 2
Topic	Creating Media 6a **Web-page creation**	Data and Information 6 **Spreadsheets**	Creating Media 6b **3D Modelling**
Core Knowledge (National Curriculum)	- Know what a website is - Know what factors contribute to good website design - Know that websites are written in HTML NC: - Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. - Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour - Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	- Know what a spreadsheet is - Know that data needs to be formatted to help calculations NC: Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information.	- Know what a digital 3D model is - Know what a 3D model can be used for - Know how to design a 3D model with shapes NC: - Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information - Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
Wider Knowledge	Know what the term fair use means Know what the term copyright means Know what a navigation path is	Know that changing inputs changes outputs Know that data can be collected and presented in different ways	Know that you can work in three dimensions on a computer Know what 3D shapes are
Skills	Consider the structure of websites. Plan and then design a webpage.	Organise data into columns and rows Use formula within a spreadsheet	Plan, develop and evaluate own model of a 3D building

	Responsibly search for content on the internet. Consider the implications of linking to content owned by others Consider the user experience when planning and refining ideas	Collect data Multiplication , division, addition and subtraction skills Interpret and construct pie charts and line graphs, and use these to solve problems	Consider practicalities of their design Recognise, describe, and build simple 3D shapes, including making nets (Maths) Generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design (D&T)
Diversity Links			Walt W. Braithwaite Engineers today likely take computer-aided design (CAD) software for granted in helping them design everything from automobiles to phones and computers. Braithwaite joined Boeing in 1966 as an associate tool engineer and by 1975 he was the senior engineer responsible for developing Boeing's use of computer technology in the design of airplanes. He supervised the engineering development of numerous Boeing aircraft including the 777, the first commercial aircraft to be designed entirely with CAD software.
Vocabulary	HTML, website, copyright, fair use, layout, navigation path, links, hyperlinks, user experience	Spreadsheet, formula, cell, pie chart, line graph, input, output	3D, 3D model, hollow, placeholder, resize, rotate, group and ungroup, workplane
Evidence	Word document with hyperlink to individual web pages saved onto class sever	Saved excel spreadsheet	Saved/annotated screenshot from tinkercad