St Gabriel's Catholic Primary School – Computing Curriculum Mapping and Progression of Skills

Year Group Preschool	Term	Topic	Area of computing	Skills	Knowledge	Vocabulary
	Ongoing	Continuous provision activities e.g. home corner	Programming	• To use real technology appropriately (hairdryers, kettle, camera, iron in role play) • To use toys with knobs and touch screens and real objects like cameras and mobile phones in play. • To push and press toys to turn on or off.	• To know how to use real technology appropriately • To know how to use toys with knob and touch screens along with real objects • To know how to switch toys on and off	On. Off. Push, click, dial,
	Spring 1	PSHE	Digital Literacy	• To be able to ask for help • To understand what to do if something worries them • To understand supervision is needed when using devices	• To know who to ask when they need help. • To know what to do when they see something they do not like. • To begin to know that they shouldn't use devices without supervision.	Sad, happy, good, bad
	Autumn 2	Colours	Information Technology	• To use a simple painting program to create lines and shapes (mark making) • To use tools to change colour	• To know how to create lines and shapes on a simple painting program • To know how to change colours	Line Pen Press Colours- red yellow blue

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Year group Reception	Term	Topic	Area of computing	Skills	Knowledge	Vocabulary
	Summer 2	Traditional tales	Programming	• To use a floor robot with support.	• To know how to move a floor robot move forwards and backwards	Forwards Backwards
	Ongoing		Information Technology	• To use an iPad to record videos and take photos by pressing the correct icons on the iPad. (E.g. retelling stories, art work, construction, music and dance activities)	• To know an iPad can record videos and take photos. • To know how to use an iPad to take videos and photos	iPad, record, press, zoom?
	Ongoing		Information Technology	• To move objects on a screen (Smartboard and iPads) • To use a safe part of the internet to play and learn (e.g. Education City etc)	• To know they can move an object on a screen • To know how to move an object on a screen • To know to use an app or website given from the teacher that is safe	Touch, move, hold, up, down, left, right
	Autumn 1 and Spring terms	Bonfire night Houses and homes (Gingerbread man) Spring	Information Technology	• To use a simple painting program to create a simple picture. • To use tools to change colour and brush size.	• To know how to use a paint program to create a picture • To know how to change brush stroke size on a paint program • To know how to change colour on a paint program	Line, square, circle, rectangle, triangle (shape) line, pen, colour, red, yellow, blue, green, mark, brush, bigger, smaller

	Spring 1	PSHE- Key person	Digital Literacy	• To talk about ideas and activities that are safe on line.	• To know they need a sensible amount of screen time. • To know which adults to speak to if they feel unsafe. • To know what to so if they see something they do not like.	Safe, healthy, screen, lights
	Summer 2	Where I live	Programming	• To be able to make a floor robot move (Beebot). • To use simple software to make something happen. • To make choices about buttons and icons to press, touch or click on. •	• To know how to move a floor robot forwards and backwards and howe to make it turn. • To know how they can make a program move • To make appropriate choices when making a floor robot move	Forwards, backwards, left, right, turn, press, touch, click, app
Year Group 1 & 2	Term	Topic - Includes Digital Literacy	Area of computing	Skills	Knowledge	Vocabulary
Cycle A	Autumn 1	Technology Around us Links to Education for a Connected World units – Copyright and ownership, Health, well-	Computer Science Systems and Networks	• To identify technology • To recognize technology in and out of school • To explain how to use information technology safely • To identify a computer and its main parts	• To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content • To know the common uses of information technology beyond school • To know how to use technology safely and respectfully, keeping personal information private; identify	Technology, Information technology, computer, mouse, trackpad, keyboard, screen

		being and lifestyle			where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	
	Autumn 2	Digital Painting	Information Technology Creating Media	• To describe what different freehand tools 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	• To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content	Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, George Seurat, Pointillism, prefer, dislike, like
	Spring 1	Moving a Robot	Computer Science Programming	• 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 direction commands to make sequences • To plan a simple program • To find more than one solution to a problem	• To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • To know how to create and debug simple programs • To know and use logical reasoning to predict the behaviour of simple programs • To know the common uses of	Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program

					information technology beyond school	
	Spring 2	Digital Writing Links to Education for a Connected World unit – Privacy and security	Information Technology Creating Media	• 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	• To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content • To know how to use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar
	Summer 1	Robot Algorithms	Computer Science Programming	• 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 know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • To know how to create and debug simple programs • To know how to use logical reasoning to predict the behaviour of simple programs • To know how to use technology purposefully to	Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging

				Skills	Knowledge	Vocabulary
				• To create and debug a program that I have written	create, organise, store, manipulate and retrieve digital content	
	Summer 2	Grouping Data Links to Education for a Connected World unit – Copyright and ownership	Information Technology Data Handling	• 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	• To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content • To know how to use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	Object, label, group, search, image, colour, shape, property, value, data set, less, most, fewest, the same
Year Group 1 & 2	Term	Topic - Includes Digital Literacy	Area of computing	Skills	Knowledge	Vocabulary
Cycle B	Autumn 1	IT around Us Links to Education for a Connected World unit – Health, well-being and lifestyle	Computer Science Systems and Networks	• To identify technology • To recognize the uses and features of information technology • To identify information technology in the home • To identify information technology beyond school • To explain how information	• To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content • To know the common uses of information technology beyond school • To know how to use technology safely and	Technology, information technology (IT), computer, barcode, scanner, scan

				technology helps us	respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	
	Autumn 2	**Making Music** Links to Education for a Connected World unit – Copyright and ownership	**Information Technology** **Creating Media**	• **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 how music is made from a series of notes** • **To create music for a purpose** • **To review and refine our computer work**	• **To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content**	**Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, instrument, create, open, edit**
	Spring 1	**Introduction to Animation**	**Computer Science** **Programming**	• **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**	• **To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions** • **To know how to create and debug simple programs** • **To use logical reasoning to predict the behaviour of simple programs** • **To know how to use**	**ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate, design**

				create a program	technology purposefully to create, organise, store, manipulate and retrieve digital content	
	Spring 2	Digital Photographs Links to Education for a Connected World unit – Self-image and identity	Information Technology Creating Media	• To know what 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	• To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content • To know the common uses of information technology beyond school	Device, camera, photograph, capture, image, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject, matter, flash, focus, background, foreground, editing, filter, Pixl, changed, real
	Summer 1	Introduction to Quizzes	Computer Science Programming	• 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	• To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • To know how to create and debug simple programs • To know how to use logical reasoning to predict the behaviour of simple programs	Sequence, command, program, run, program, start, predict, blocks, actions, sprite, modify, match, debug, features, evaluate

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	Summer 2	Pictograms Links to Education for a Connected World unit – Privacy and security	Information Technology Data Handling	- 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	- To know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content - To know how to use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular
Year Group 3 & 4	**Term**	**Topic -** Includes Digital Literacy	**Area of computing**	**Skills**	**Knowledge**	**Vocabulary**
Cycle A	Autumn 1	Connecting Computers	Computer Science Systems and Networks	- 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 know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output - To know and understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and	Digital device, input, output, process, program, digital, non-digital, connection, network, network switch, server, wireless access point (WAP), internet, router, network security, information, sharing, accurate,

				- To explore how digital devices can be connected - To describe how networks physically connect to other networks - To evaluate the consequences of unreliable content	the opportunities they offer for communication and collaboration • To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • To know how to 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 • To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	honest, content, adverts
	Autumn 2	Sequence in Music	Computer Science Programming	- To explore a new programming environment - I can identify that each sprite is controlled by the	• To know how to design, write and debug programs that accomplish specific goals, including controlling or	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn,

				- commands I choose - To explain that a program has a start - To recognise that a sequence of commands can have an order - To change the appearance of my project - To create a project from a task description	simulating physical systems; solve problems by decomposing them into smaller parts - To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output - To know how to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - To know how to 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	point in direction, go to, glide, event, task, design, code, run the code, order, note, chord, algorithm, bug, debug
	Spring 1	Desktop Publishing Links to	Information Technology Creating	- To recognise how text and images convey information - To recognise that text and layout can be edited	To know how to use search technologies effectively, appreciate how results are selected and ranked, and be	Text, images, advantages, disadvantages, communicate, font,

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		Education for a Connected World units – Copyright and ownership, Managing online information	Media	• 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	discerning in evaluating digital content • To know how to 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	style, template, desktop publishing, copy, paste, layout, purpose, benefits
	Spring 2	Repetition in Games	Computer Science Programming	• To develop the use of count-controlled 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	• To know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output • To know how to use logical reasoning to explain how some simple algorithms work and to detect and correct	Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate, modify, debug, refine, evaluate, algorithm

				• errors in algorithms and programs • To know how to 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	
	Summer 1	**Stop-Frame Animation** Links to Education for a Connected World units – Copyright and ownership, Managing online information	**Information Technology** **Creating Media**	• 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 • To review and improve an animation • To evaluate the impact of adding other media to an animation	• To know how to 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	Animation, flip book, stop frame, animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, delete, frame, media, import, transition

	Summer 2	Branching Databases	Information Technology Data Handling	• 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	• To know how to 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	Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, j2data, selecting, pictogram, information, decision tree, questions
Year Group 3 & 4	**Term**	**Topic -** Includes Digital Literacy	**Area of computing**	**Skills**	**Knowledge**	**Vocabulary**
Cycle B	Autumn 1	The Internet	Computer Science Systems and Networks	• To identify input and output devices • To recognise the physical components of a network • To recognize how networked devices make up the internet • To outline how websites can be shared via the World Wide Web (WWW) • To describe how content	• To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output • To know and understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer	Digital device, input, process, output, network cables, network sockets, network switch, server, wireless access point (WAP), router, website, web page, wed address, routing, web browser, World, Wide Web, internet, content, links, files, use, download, sharing, ownership,

				can be added and accessed on the World Wide Web (WWW) • To recognize how the content of the WWW is created by people	for communication and collaboration • To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • To know how to 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 To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	permission
	Autumn 2	Events and Actions	Computer Science Programming	• To explain how a sprite moves in an existing project • To create a program to move a sprite in four	• To know how to design, write and debug programs that accomplish specific goals, including controlling or	Motion, event, sprite, algorithm, logic, move, resize, algorithm, extension block, pen up,

				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	simulating physical systems; solve problems by decomposing them into smaller parts • To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output • To know how to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • To know how to 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	set up, design, action, debugging, errors, setup, test
	Spring 1 Links to Education for a	Photo Editing Information Technology Creating Media		• To explain that digital images can be changed • To change the composition of an image • To describe how images can	• To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital	Image, edit, arrange, select, digital, crop, undo, save, search, copyright, composition, save, pixels, rotate, flip,

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		Connected World units – Copyright and ownership, Self-image and identity		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	content • To know how to 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 • To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	adjustments, effects, colours, hue/saturation, sepia, version, illustrator, clone, recolour, magic wand, sharpen, brighten, fake, real, composite, background, foreground, retouch, paste, alter, publication, elements, original, font style, border, layer
	Spring 2	Repetition in Shapes	Computer Science Programming	• 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	• To know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and	Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure

				uses count-controlled loops to produce a given outcome	• To know how to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • To know how to 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	output	
	Summer 1	**Audio Editing** Links to Education for a Connected World units – Copyright and ownership	Information Technology Creating Media	• 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 can be changed through editing • To show that different types of audio can be combined and played together	• To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • To know how to 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	**Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback**	

				• To evaluate editing choices made	and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Summer 2	Data Logging	Information Technology Data Handling	• 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	• To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output • To know how to 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	Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion

St Gabriel's Catholic Primary School – Computing Curriculum Mapping and Progression of Skills

Year Group 5 & 6	Term	Topic - Includes Digital Literacy	Area of computing	• Skills	• Knowledge	Vocabulary
Cycle A	Autumn 1	Communication Links to Education for a Connected World units – Managing online information, Online reputation	Computer Science Systems And Networks	• To explain the importance of internet addresses • To recognise how data is transferred across the internet. • T explain how sharing information online can help people work together • To evaluate different ways of working together online • To recognise how we communicate using technology • To evaluate different methods of online communication	• To know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • To 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. • To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • To know how to select, use and combine a variety of software (including internet services) on a range of digital devices to	Communication, protocol, data, address, Internet Protocol (IP) address, Domain Name Server (DNS), packet, header, data payload, chat, explore, slide check, reuse, remix, collaboration, internet, public, private, one-way, two-way, one-to-one, one-to-many

						design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Autumn 2	Selection in Quizzes	Computer Science Programming	• 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	• To know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output • To know how to use logical reasoning to explain how some simple algorithms work	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive

					and to detect and correct errors in algorithms and programs • To know how to 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	
	Spring 1	Flat-File Databases	Information Technology Data Handling	• To use a form to record information • To compare paper and computer-based databases • To outline how grouping and then sorting data allows us to answer questions • To explain that tools can be used to select specific data • To explain that computer programs can be used to compare data visually • To apply my knowledge of a database to ask and answer real-world questions	• To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • To know how to 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	Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation

| | Spring 2 | Variables in Games | Computer Science

Programming | • 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 by using variables
• To design a project that builds on a given example
• To use my design to create a project
• To evaluate my project | • To know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
• To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output
• To know how to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
• To 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 | Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share |

	Summer 1	Vector Drawing Links to Education for a Connected World units – Copyright and ownership	Information Technology Creating Media	• 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	• To know how to 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	Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives
	Summer 2	3D Modelling Links to Education for a Connected World unit – Privacy and security	Information Technology Creating Media	• To use a computer to create and manipulate three-dimensional (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	• To know how to 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 • To to know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve

Year Group 5 & 6	Term	Topic - Includes Digital Literacy	Area of computing	• Skills	• Knowledge	Vocabulary
Cycle B	Autumn 1	Sharing Information Links to Education for a Connected World units – Copyright and ownership	Computer Science Systems and Networks	• To explain that computers can be connected together to form systems • To recognise the role of computer systems in our lives • 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 know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output • To know how to 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	System, connection, digital input, process, output, search, search engine, refine, index, crawler, bot, search engine, order, ranking, search engine, links, algorithm, search engine optimisation (SEO), web crawler, content creator, slection, searching

					• To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	
	Autumn 2	**Spreadsheets**	**Information Technology** **Data Handling**	• To identify questions which 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	• To know how to 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	Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results, comparisons, questions, software, tools, data, propose
	Spring 1	**Web-page Design** Links to Education for a Connected World units – Copyright and ownership,	**Information Technology** **Creating Media**	• To review an existing website and consider its structure • To plan the features of a web page • To consider the ownership and use of images (copyright) • To recognise the need to	• To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • To know how to select, use and combine a variety of software (including internet	Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation,

		Online relationships		preview pages • To outline the need for a navigation path • To recognise the implications of linking to content owned by other people	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 • To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	hyperlink, subpage, implication, external link, embed
	Spring 2	**Video Editing** Links to Education for a Connected World units – Managing online information, Online relationships, Online reputation Self-image and identity	**Digital Literacy** **Creating Video**	• 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 the 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	• To know how to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • To know how to 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	Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback

					• To know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. data and information	
	Summer 1	Selection using Physical Devices	Computer Science

Programming | • To control a simple circuit connected to a computer
• To write a program that includes count-controlled loops
• To explain that a loop can stop when a condition is met
• To explain 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 program that controls a physical computing project | • To know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
• To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output
• To know how to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
• To know how to select, use and combine a variety of software (including internet | Microcontroller, crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate |

						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	
	Summer 2	Sensing	Computer Science Programming	• To create a program to run 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 an 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 inputs and outputs on a controllable device	• To know how to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • To know how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output • To know how to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • To know how to select, use and combine a variety of software (including internet services) on a range of digital	Micro-bit, MakeCode, input, process, output, flashing, USB, selection, condition, if… then… else, variable, random, navigation, design, task, step counter, plan, create, code, test, debug

					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	