COMPUTING WHOLE SCHOOL OVERVIEW

St Francis Roman Catholic Primary School

COMPUTING STATEMENT OF INTENT

At St Francis, the aim of our computing curriculum is to give our pupils the life-skills that will enable them to embrace and utilise all forms of technology in a socially responsible and safe way, in line with our core values and vision.
Through our computing curriculum, we aim to prepare our pupils to be positive contributors to the 21st century workplace and to embrace without fear, the rapidly changing world of computational systems. Not only do we want our pupils to be digitally literate and competent end-users of technology but through our Computing we aim that they will develop creativity, resilience, problem-solving and critical thinking skills.
We ensure that our implementation is fully inclusive and accessible to every child. We aim that all our pupils will have a breadth of experience to develop their understanding of themselves as individuals within their community but also as members of a wider world and as responsible digital citizens.

Aims

The national curriculum for computing aims to ensure that all pupils:

- ♣ can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- ♣ can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- ♣ can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- ♣ are responsible, competent, confident and creative users of information and communication technology.

Nursery						
	AUTUMN 1	**AUTUMN 2**	**SPRING 1**	**SPRING 2**	**SUMMER 1**	**SUMMER 2**
	All About Me 	**Autumn/ Woodland** 	**Animals Living in Cold Places** 	**Animals Living in Hot Places** 	**Lifecycles – Animals and Plants** 	***Transport, Journeys, Water*** 
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY** **ONLINE REPUTATION**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING** **HEALTH, WELL-BEING AND LIFESTYLE**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**
N	**CREATING MEDIA: SELFIES**	**DATA AND INFORMATION: AUTUMN SORTING**	**CREATING MEDIA: ANIMAL PAINTING**	**COMPUTING SYSTEMS AND NETWORKS:**	**PROGRAMMING: SEQUENCING**	**PROGRAMMING: JOURNEYS**
	Children use a an iPad to take photos of themselves and record their voice saying their name or something they like.	Children will sort autumn objects into groups and talk about what they notice.	Children will create a simple digital drawing of an arctic animal.	Children will explore digital devices to view images and videos of animals that live in hot places.	Children begin by looking at pictures of the steps involved in planting seeds. They then sequence the pictures so that they make sense and are in the correct order. Next, they follow their pictorial instructions to plant their seeds.	Children follow instructions (an algorithm) for a simple route. They then try to give their own instructions to their peers to follow a selected route.
	KEY KNOWLEDGE & SKILLS					

	• Explore how pressing icons makes things happen. • Use an iPad to take a photo • Use technology to record their voice • Tap icons on a screen • Handle devices carefully	• Explore how objects can be put into groups • Sort things by what is the same or different. • Talking about choices • Notice similarities and differences	• Use technology to make pictures. • Choose tools and colours. • Make marks on a screen • Talking about what they have made	• Explore how technology can show pictures and videos. • Tap icons • Use devices safely	• Order pictures • Follow instructions • Talk about what comes next • Predict what will happen	• Follow simple instructions • Give instructions • Use directional language • Move along a route • Check if the instructions worked
	KEY STICKY KNOWLEDGE					
	• Know a tablet is a piece of technology. • Know technology can take photos and record sound.	• Know things can be grouped.	• Know you can use tools to draw digitally. • Know technology can help to create.	• Know technology can show pictures and video • Know we use devices to find things out	• Know some things must be done in order.	• Know instructions tell us what to do • Know how to give simple directions
	KEY VOCABULARY					
	photo, picture, tablet, iPad, screen, button, record, voice, sound, stop, play	sort, group, same, different	draw, picture, paint, colour, screen, tablet, brush	tablet, screen, laptop, video, picture, touch, swipe, button	order, next, first, then, last, step, instruction	go, stop, forwards, backwards, turn, route, journey, start, finish, instructions, move
Reception						
	All About Me 	**Autumn/ Woodland** 	**Animals Living in Cold Places** 	**Animals Living in Hot Places** 	**Lifecycles – Animals and Plants** 	***Transport, Journeys, Water*** 
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY** **ONLINE REPUTATION**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING** **HEALTH, WELL-BEING AND LIFESTYLE**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**

R	PROGRAMMING: MOVEMENT ALGORITHMS	CREATING MEDIA: WOODLAND SCENE	COMPUTING SYSTEMS AND NETWORKS: UNDERSTANDING DIFFERENT DEVICES	DATA AND INFORMATION: BRANCH DATABSES	CREATING MEDIA: LIFECYCLE BOOK	PROGRAMMING: JOURNEYS
	Children follow instructions (an algorithm) for a simple set of movements or dance routine. They then adapt and change this to make their own routine and test to see if it works.	Children will create a simple woodland scene digitally. Children will record sounds to tell people about their picture.	Children will explore how different devices can be used to find out about animals that live in cold places. Children use an Ipad to photograph their polar animal toys/models. Children will then view the images on the interactive whiteboard and talk about how the picture moved from one device to another.	Children sort and categorise data and are introduced to branching databases and pictograms	Children will take photographs of X and sequence them to create their own book.	Children will be encouraged to develop their own map to record things they might see whilst on a journey or walk, such as to the park, in a car or on a bus etc. Children will decide on the position of the objects and using toy cars or BeeBots, the children will then tell the story of their adventure.
	KEY KNOWLEDGE & SKILLS					
	• Know an algorithm is a set of instructions. • Know instructions must be in the correct order. • Follow a sequence of instructnons • Creating their own sequence • Changing steps to improve the routine • Explore what to do if things go wrong	• Draw digitally • Add details • Record voice or sound • Select tools for a purpose • Talk about their creation	• Explore how different devices have different purposes. • Observe how devices can be connected to share information. • Use a camera on a tablet	• Answer yes/no questions • Sort into categories • Use a simple branching database • Interpret basic pictograms	• Take photographs • Sequence images • Create digital pages • Record voice or captions • Edit digital work • Save and share work	• Design a map • Program a Beebot • Use positional and directional language
	KEY STICKY KNOWLEDGE					
	• Know an algorithm is a set of instruction • Know the order of steps is important	• Know digitsl tools can be used to create pictures and sounds.	• Know different devices do different jobs	• Know we can sort information by asking questions	• Know digital photos can be used to make books.	• Know a program is a set of instructions. • Know how to program a Beebot.

	• Know if it doesn't work, I can fix it		• Know pictures can move from one device to another • Know we use technology to find things out	• Know data can be shown in pictures and charts	• Know how to save my work	
	KEY VOCABULARY					
	algorithm, instruction, order, sequence, step, change, test, fix,	draw, design, record, sound, save, picture, background, tools	device, tablet, camera, interactive whiteboard, image, photograph, internet, screen, share	data, sort, group, question, yes, no, chart, pictogram, branch, category	photograph, sequence, page, book, order, next, first, last, edit, save	program, map, route, journey, forwards, backwards, turn, left, right, position, debug

Year 1						
	AUTUMN 1	**AUTUMN 2**	**SPRING 1**	**SPRING 2**	**SUMMER 1**	**SUMMER 2**
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY** **ONLINE REPUTATION**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING** **HEALTH, WELL-BEING AND LIFESTYLE**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**
1	**COMPUTING SYSTEMS AND NETWORKS – TECHNOLOGY AROUND US**		**CREATING MEDIA – DIGITAL PAINTING**	**PROGRAMMING – MOVING A ROBOT**		**CREATING MEDIA: DIGITAL WRITING**
	Children develop their understanding of technology and how it can help them. They become more familiar with the different components of a computer by developing their keyboard and mouse skills, and also start to consider how to use technology responsibly.		Children develop their understanding of how to manipulate digital devices by using painting tools. They practise by creating digital paintings, gaining inspiration from the work of artists whilst reflecting on their preferences when painting with and without the use of digital devices.	Children are introduced to early programming concepts. They explore using individual commands, both with other learners and as part of a computer program. They identify what each BeeBot command does and use that knowledge to start predicting the outcome of programs. Children are also introduced to the early stages of program design through the introduction of algorithms.		Children develop their understanding of the various aspects of using a computer to create and change text. They familiarise themselves with typing on a keyboard and begin using tools to change the look of their writing, and consider the differences between using a computer and writing on paper to create text.

	KEY KNOWLEDGE & SKILLS			
	• Identify examples of technology and explain how they can help us • Recognise that a computer is an example of technology • Describe what a keyboard is for • Know a computer stores work in files • Give examples of rules to keep them safe and healthy when they are using technology in and beyond the home • Choose a piece of technology to do a job • Identify the main parts of a computer • Use a keyboard to type their name on a computer • Turn on the computer and log on with an aid • Use a mouse in different ways – click, select and drag • Use the keyboard to edit text and delete letters • Demonstrate that they can use technology safely	• Explain the key requirements of the task • Explain what different freehand tools do • Recognise that computers can be used to create a range of art • Recognise a tool can be adjusted • Choose appropriate paint tools to recreate a picture • Use freehand tools, changing the colour and brush size • Use shape and line tools for precision, changing the size, shape and colour • Use the undo button to correct mistakes • Use the fill tool to colour an enclosed area • Consider the impact of choices made • Identify the differences between painting on a computer and on paper, and explain their own preference	• Plan and execute a program onto a floor robot • Explain what a given command does • Predict the outcome of a sequence involving up to four commands • Match a command to an outcome • Understand that a program is a set of commands that a computer can run • Know that a series of instructions can be issued before they are enacted • Predict the outcome of a command on a device • Run a command on a floor robot • Choose a command for a given purpose • Choose a series of words that can be enacted as a program • Build a sequence of commands in steps from a given starting point • Combine commands in a program • Run a program on a device Debug a program to correct errors	• Know that a keyboard is used to enter text into a computer • Know that the appearance of text can be changed • Recognise some keys and use them to enter text on to a computer/device including some basic punctuation • Add spaces between most words using a space bar • Use the backspace key to delete text only as far as the section to be edited • Use the toolbar to find and use the bold, italic, and underline tool • Identify the differences between writing on a computer and on paper, and explain their own preference
	KEY STICKY KNOWLEDGE			
	• Know that a computer is a piece of technology • Know and name mouse, keyboard and monitor on a computer • Know how to log on safely to the school laptops	• Know that computers can be used to create images • Know that tools can be adjusted	• Know that computers run on commands • Know that a series of commands can be instructed	• Know that a keyboard is used to enter text into a computer • Know that the appearance of text can be changed
	KEY VOCABULARY			
	technology, computer, mouse, trackpad, keyboard, screen, double-click, typing.	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.

Year 2						
	AUTUMN 1	**AUTUMN 2**	**SPRING 1**	**SPRING 2**	**SUMMER 1**	**SUMMER 2**
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY** **ONLINE REPUTATION**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING** **HEALTH, WELL-BEING AND LIFESTYLE**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**
2	**COMPUTING SYSTEMS AND NETWORKS: IT AROUND US**		**PROGRAMMING: ROBOT ALGORITHMS**	**PROGRAMMING: SCRATCH**		**CREATING MEDIA: DIGITAL PHOTOGRAPHY**
	Children develop their understanding of what information technology is and will begin to identify examples. Children will discuss where they have seen IT in school and beyond. They will investigate how IT improves our world whilst also recognising the importance of using IT responsibly.		Children will build on the early programming concepts taught in Year 1. Childrren develop their understanding of instructions in sequences and the use of logical reasoning to predict outcomes. They will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.	Children begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions about the Great Fire of London in ScratchJr using blocks of code. Finally, they evaluate their work and make improvements to their programming projects.		Children learn to recognise that different devices can be used to capture photographs and gain experience capturing, editing, and improving photos. Finally, they use this knowledge to recognise that images they see may not be real.
	KEY KNOWLEDGE & SKILLS					
	• To recognise the uses and features of information technology • To identify the uses of information technology in the school • To identify information technology beyond school • To explain how information technology helps us • To explain how to use information technology safely		• Plan and execute a program onto a floor robot to reach a given point • Understand a series of instructions • Understand different algorithms by changing the sequence of commands • Predict what a sequence of commands will do • Follow sequences of instructions including moving forwards and	• Plan a project including changing backgrounds • Know that a sequence can be started using a variety of event blocks • Know that a sequence has an outcome, and identify different programs that have the same outcome		• Explain some aspects of taking a good photograph • Know that a photo can be portrait or landscape • Take a photograph using a simple camera or device that has been set up in camera mode • Identify some of the reasons why a photograph may be good or bad • Experiment when taking photos with different light sources

	• To recognise that choices are made when using information	backwards, and turning left and right. • Plan a series of instructions for someone else to follow • Plan a mat layout with several possible routes • Plan and execute a program to reach a goal and debug as needed	• Know the backgrounds can be changed through the programming blocks • Understand the role of the numbers on ScratchJr blocks • Write and run a simple program with a start block, and an end block which changes the background • Adapt a given design to create a program with multiple sprites and backgrounds which uses the blocks given in the example • Create and program a quiz with at least two backgrounds which switch based on an action • Identify errors in their program, and debug them • Test a program created and evaluate how successful it has been	• Identify a photo that has been enhanced using tools when asked questions Use different tools to change how a photograph looks
	KEY STICKY KNOWLEDGE			
	• To know that IT can help us in school • To know that IT helps us outside of school, and provide examples • Know that we need to keep ourselves safe online	• Know that an algorithm is a series of commands • Know how to amend algorithms • Know how to plan an algorithm to reach a planned goal	• Know that a sequence can be started using a variety of event blocks • Know that a sequence has an outcome, and identify different programs that have the same outcome • Know the backgrounds can be changed through the programming blocks	• Know how to take a simple photograph • Know that a photograph can be portrait or landscape • Know that photographs can be edited
	KEY VOCABULARY			
	Information technology (IT), computer, barcode, scanner/scan	instruction, sequence, clear, algorithm, program, order, prediction, design, route, mat, debugging, decomposition	sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code	device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting
Year 3				

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY** **ONLINE REPUTATION**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING** **HEALTH, WELL-BEING AND LIFESTYLE**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**

3	COMPUTING SYSTEMS AND NETWORKS: CONNECTING COMPUTERS	PROGRAMMING: SEQUENCING SOUNDS	CREATING MEDIA: DESKTOP PUBLISHING	CREATING MEDIA: STOP-FRAME ANIMATION
	Children develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They start by comparing digital and non-digital devices, before moving on to computer networks that include network infrastructure devices like routers and switches.	Children explore the concept of sequencing in programming through Scratch. They look at a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano.	Children learn that the terms 'text' and 'images' can be used to communicate messages. They use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. They will start to add text and images to create their own pieces of work about Ancient Egypt using desktop publishing software. Children look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world.	Children use a range of techniques to create a stop-frame animation using tablets. They apply those skills to create a story-based animation based on one of core texts they have enjoyed this year. They add other types of media to their animation, such as music and text.
	KEY KNOWLEDGE & SKILLS			
	• To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way that 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	• To explore a new programming environment • To identify that commands have an outcome • To explain that a program has a start • To recognise that a sequence of commands can have an order • To change the appearance of a project • To create a project from a task description	• Describe how different challenges require different solutions • Give an example of when using text, images or emojis online could be misinterpreted. • Choose an appropriate layout for a given scenario • Use placeholders appropriately to divide the page (magazine) • Add text and images • Format some of the text	• Explain the key requirements of the task • To understand how to create a storyboard that has a clear beginning, middle, and end • Understand how to create smooth movements • To learn how to link a storyboard and an animation • To add additional media to a storyboard
	KEY STICKY KNOWLEDGE			

	• Know that digital devices accept inputs • Know that digital devices produce outputs • Know that computer networks share information • Know that computer networks have physical components	• Know that commands have an outcome • Know that a program has a start • Know how to change the appearance of a project	• Know that different challenges require different solutions • Know how to use placeholders to amend layout • Know how to add text and images • Know how to format text	• Know that a storyboard should have a beginning, middle and end • Know how to create smooth movements
	KEY VOCABULARY			
	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code	text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits	animation, flip book, stop-frame, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.

Year 4

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY** **ONLINE REPUTATION**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING** **HEALTH, WELL-BEING AND LIFESTYLE**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**

4	**COMPUTING SYSTEMS AND NETWORKS: THE INTERNET**	**PROGRAMMING: REPETITION IN SHAPES**	**DATA AND INFORMATION: DATA LOGGING**	**CREATING MEDIA: PHOTO EDITING**
	Children apply their knowledge and understanding of networks from KS1, to appreciate the internet as a network of networks which need to be kept secure. They learn that the World Wide Web is part of the internet, and will be given opportunities to explore the World Wide Web for themselves in order to learn about who owns content and what they can access, add, and create. they evaluate online content to decide how honest, accurate, or reliable it is, and	Children look at repetition and loops within programming. Children create programs by planning, modifying, and testing commands to create shapes and patterns. They use Logo, a text-based programming language.	Children consider how and why data is collected over time. Children consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. They collect data as well as access data captured over long periods of time. They look at data points, data sets, and logging intervals. Children spend time using a computer to review and analyse data. Towards the end of the unit, they pose	Children develop their understanding of how digital images can be changed and edited from KS1. Children learn how images can be resaved and reused. They consider the impact that editing images can have, and evaluate the effectiveness of their choices.

	understand the consequences of false information.		questions and then use data loggers to automatically collect the data needed to answer those questions.	
	KEY KNOWLEDGE & SKILLS			
	• 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 (WWW) • To describe how content can be added and accessed on the World Wide Web (WWW) • To recognise how the content of the WWW is created by people	• 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 task into small steps • To create a program that uses count-controlled loops to produce a given outcome	• 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 recognise how a computer can help us analyse data • To identify the data needed to answer questions • To use data from sensors to answer questions	• To explain that the composition of digital images can be changed • To explain that colours can be changed in digital images • To explain how cloning can be used in photo editing • To explain that images can be combined • To combine images for a purpose • To evaluate how changes can improve an image
	KEY STICKY KNOWLEDGE			
	• Know that the internet is made up of networked devices • Know that the internet provides many services • Know that anyone can add content to the world wide web	• Know that accuracy is a key element of programming • Know that images and actions are create through text-based language • Know that changing code will change outcomes • Know how to bebug a program	• Know that data gathered over time can be used to answer questions • Know that digital devices can collect data automatically • Know that a data logger collects 'data points' from sensors over time	• Know that digital images can be edited • Know how cloning can be used in photo editing • Know that photos can be combined in editing
	KEY VOCABULARY			
	Internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts	Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure	data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion	image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font

Year 5

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**

	ONLINE REPUTATION			**HEALTH, WELL-BEING AND LIFESTYLE**		
5	**COMPUTING SYSTEMS AND NETWORKS: SYSTEMS AND SEARCHING**	**DATA AND INFORMATION: FLAT FILE DATABASES**		**CREATING MEDIA: VIDEO PRODUCTION**		**PROGRAMMING: SELECTION IN QUIZZES**
	Children will develop their understanding of computer systems and how information is transferred between systems and devices. They consider small-scale systems as well as large-scale systems. They explain the input, output, and process aspects of a variety of different real-world systems. Children discover how information is found on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines.	Children look at how a flat-file database can be used to organise data in records. They use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others.		Children learn how to create short videos. They are exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. They work in small groups to investigate the use of devices and software. Children use green screen technology to edit videos.		Children develop their knowledge of selection by revisiting how conditions can be used in programs and then learning how the 'If… Then… Else' structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They use their knowledge of writing programs and using selection to control outcomes to design a quiz in response to a given task and implement it as a program.
	KEY KNOWLEDGE & SKILLS					
	• 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 use a form to record information • To compare paper and computer-based databases • To outline how you can answer questions by grouping and then sorting data • To explain that tools can be used to select specific data • To explain that computer programs can be used to compare data visually • Use a real-world database to answer questions		• To explain what makes a video effective • To use a digital device to record video • To capture video using a range of techniques • To create a storyboard • 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 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 that uses selection • To create a program that uses selection • To evaluate my program
	KEY STICKY KNOWLEDGE					
	• Know that digital systems have an input, process, and output	• Know what a field and a record is in a database • Know that data in a database can be grouped using chosen values		• Know that video recording devices have a camera and a microphone		• Know that conditions are used in programs for selection

	• Know that web crawlers systematically search the world wide web for information • Know that search engines follow rules to rank results	• Know that charts can be used to present information • Know that charts can be refined	• Know that video is a visual media format • Know that videos can be stored and edited on computers • Know that re-shooting and editing can improve the quality of a video	• Know that 'If… Then… Else' statements are how computers make decisions • Know that selection helps a program to choose between different paths
	KEY VOCABULARY			
	system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking.	database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.	video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator

Year 6

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
ONLINE SAFETY	**SELF-IMAGE AND IDENTITY** **ONLINE REPUTATION**	**PRIVACY AND SECURITY**	**ONLINE RELATIONSHIPS**	**ONLINE BULLYING** **HEALTH, WELL-BEING AND LIFESTYLE**	**MANAGING ONLINE INFORMATION**	**COPYRIGHT AND OWNERSHIP**
6	**COMPUTING SYSTEMS AND NETWORKS: COMMUNICATION AND COLLABORATION**	**CREATING MEDIA: WEB PAGE CREATION**	**DATA AND INFORMATION: INTRODUCTION TO SPREADSHEETS**	**PROGRAMMING: SENSING MOVEMENT**		
	Children explore how data is transferred over the internet. They initially focus on addressing, before they move on to the makeup and structure of data packets. They then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. They learn how to communicate responsibly by	This unit introduces children to the creation of websites for a chosen purpose. They identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.	This unit introduces the learners to spreadsheets. They will be supported in organising data into columns and rows to create their own data set. Children are taught the importance of formatting data to support calculations, while also being introduced to formulas and begin to understand how they can be used to produce calculated data. They are taught how to apply formulas that include a range of cells, and apply formulas to	This brings together elements of all the four programming constructs: sequence from Year 3, repetition from Year 4 and selection from Year 5. Children use all of these constructs in a different, but still familiar environment, while also utilising a physical device — the micro:bit. Children build in and test programming, before transferring it to their micro:bit. They then deepen their understanding by appling their learning to new projects.		

	considering what should and should not be shared on the internet.		multiple cells by duplicating them. Learners will use spreadsheets to plan an event and answer questions. They create charts, and evaluate their results in comparison to questions asked.	
	KEY KNOWLEDGE & SKILLS			
	• To explain the importance of internet addresses • To recognise how data is transferred across the internet • To explain how sharing information online can help people to 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 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) • Know how to use technology respectfully and responsibly when online • 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	• To create a data set in a spreadsheet • To build a data set in a spreadsheet • To explain that formulas can be used to produce calculated data • To apply formulas to data • To create a spreadsheet to plan an event • To choose suitable ways to present data	• 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 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 inputs and outputs on a controllable device
	KEY STICKY KNOWLEDGE			
	• Know that internet devices have addresses • Know that data is transferred over networks in packets • Know that the internet allows people to work together publicly or privately	• Know that websites are written in HTML • Know that a navigation path allows users to find their way through the pages on a website • Know that a hyperlink takes users from one web page to another	• Know that a piece of data is information • Know that formulas can be used to produce calculated data • Know that numerical data can be used in a formula • Know that spreadsheet formulas have inputs and outputs • Know that spreadsheets can be used to create charts and graphs	• Know that programming can be used on controllable devices • Know that if, then, else statements control the flow of a program • Know that a controllable device needs inputs to produce outputs
	KEY VOCABULARY			
	communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public,	website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites,	data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose,	Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task,

	private, one-way, two-way, one-to-one, one-to-many	breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.	question, data set, organised, chart, evaluate, results, sum, comparison, software, tools	algorithm, step counter, plan, create, code, test, debug.