Launton Church of England Primary School

Computing KS1

	Computing systems and Networks	Creating Media	Programming A	Data and information	Creating media	Programming B
Year group 1	<u>Technology around us</u> Learners will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. Learners will also consider how to use technology responsibly. They will use the app paintzapp.	<u>Digital Painting</u> Learners will develop their understanding of a range of tools used for digital painting. They then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work. The unit concludes with learners considering their preferences when painting with and without the use of digital devices.	<u>Moving a Robot</u> Learners will be introduced to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each command for the floor robot does, and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming, and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the	<u>Grouping data</u> This unit introduces learners to data and information. Labelling, grouping, and searching are important aspects of data and information. Searching is a common operation in many applications, and requires an understanding that to search data, it must have labels. This unit of work focuses on assigning data (images) with different labels in order to demonstrate how computers are able to group and present data. During this unit, learners will be logging on to the computers, opening their documents, and saving their	<u>Digital writing</u> Learners will develop their understanding of the various aspects of using a computer to create and manipulate text. They will become more familiar with using a keyboard and mouse to enter and remove text. Learners will also consider how to change the look of their text, and will be able to justify their reasoning in making these changes. Finally, learners will consider the differences between using a computer to create text, and writing text on paper. They will be able to explain which method they prefer and explain their reasoning for choosing this.	<u>Programming animations</u> Learners will be introduced to on-screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs. Learners will also be introduced to the early stages of program design through the introduction of algorithms. The children will use scratch Jr.

			introduction of algorithms. The children will use bee-bots.	documents. Depending on how your school's system is set up, additional support and time may be required to facilitate these steps, and consideration should be given as to how this will impact the timings of activities in each lesson.		
Vocabulary	account, clipart, computer, log on, log off, mouse, password, resize, screen (monitor), software, tool, username, algorithm, Bee-Bot, computing code, computer program, explain, explore, instructions, predict, tinker, video, algorithm, bug, computer, debug, decompose, device, input, instructions, output, solution, camera, collage, crop, delete, download, drag and drop, editing software, image, image filter, import, online, photo, resize, save as, search engine, sequence, storage space, visual effects, branching database, categorise, chart, computer, data, information, label, pictogram, record, sort, table, text, computer, computer program, create, data, digital content, e-document, folder, list, save, sequence, share, spreadsheet,					
E-Safety	Begin to learn my username and password and keep it private. Tell you what personal information is. Tell an adult when I see something unexpected or worrying online. Talk about why it's important to be kind and polite. Recognise an age-appropriate website. Agree and follow sensible e-Safety rules. Follow my teacher's instructions to find a website. Discuss e-safety rules and explain why they are important. Adult to explain how to find websites / program. Ageappropriate Apps, programs and websites.					
Continuous Provision	Games:Use scratch to allow children to create games of their own choice. Art: Use apps for drawing and painting to help children develop ideas. DT:Use apps to model drawing and painting. English: Use apps that develop phonics skills and practise sentence construction. Practise spellings (Spelling Shed) Geography; Use apps to explore maps. Use weather tracking apps. History: Use online reosurces and interactive ebooks to research and find eveidence. Maths: Use apps that promote fluency in number and calculation (Numbots)					
Retrieval Practice	• follow simple oral algorithms • use a mouse, touch screen or appropriate access device to target	• create a simple digital collage. • move and resize images with my fingers or mouse.	• follow simple oral algorithms	• identify a chart. • sort physical objects, take a picture and discuss what I have done.	• create a simple digital collage. • move and resize images with my fingers or mouse.	• follow simple oral algorithms

	and select options on screen • input a simple sequence of commands to control a digital device with support (Bee Bot)	• animate a simple image to speak in role • create a simple animation to tell a story including more than one character. • record a short film using the camera • record and play a film • watch films back • take a photograph and use it in an app		• present simple data on a digital device.	• animate a simple image to speak in role • create a simple animation to tell a story including more than one character. • record a short film using the camera • record and play a film • watch films back • take a photograph and use it in an app	
Year group 2	<u>IT Around Us</u> Learners will develop their understanding of what information technology (IT) is and will begin to identify examples. They will discuss where they have seen IT in school and beyond, in settings such as shops, hospitals, and libraries. Learners will then investigate how IT improves our world, and they will learn about the importance of using IT responsibly.	<u>Digital Photography</u> Learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real. Children should use digital cameras in this lesson as well as tablets.	<u>Robot Algorithmns</u> Learners will have an understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Learners 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 will	<u>Pictograms</u> Learners will begin to understand what the term data means and how data can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions. During this unit of work learners will use j2e pictogram tool which can be accessed online using a desktop.	<u>Digital Music</u> Learners will be using a computer to create music. They will listen to a variety of pieces of music and consider how music can make them think and feel. Learners will compare creating music digitally and non-digitally. Learners will look at patterns and purposefully create music.	<u>Programming Quizes</u> Learners 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 in ScratchJr, and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects.

			use bee-bots in this lesson.			
Vocabulary	battery, buttons, computer, desktop, device, electricity, input, invention, keyboard, laptop, screen (monitor), mouse, output, technology, wires, backspace, bold, copy, copyright, cut, delete, highlight, image, import, italics, keyboard, keyboard character, paste, redo, space bar, touch typing, underline, undo, word processing, algorithm, animation, bug, computer code, code (verb), debug, icon, immitate, instructions, loop, repeat, Scratch JR, sequence, abstraction, algorithm, artificial intelligence, bug, correct, data, debug, decompose, error, key features, loop, predict, unnecessary, approximate, astronaut, data, digital content, experiment, interactive map, International space station (I.S.S), interpret, laboratory, monitor (verb), satellite, sensor, space, survival, thermometer, animation, animator, contraption, decompose, design, device, download, film review, filming, import image, plan, sketch, software, stop motion, storyboard, upload					
E safety	Explain why I need to keep my username, password and personal information private. Talk about things that might be online that I should tell an adult about. Talk about why I shouldn't stay on a computer for long amounts of time. Talk about why it is importance to be kind and polite online and in real life. Know that not everyone is who they say they are on the Internet. Understand the importance of e-safety rules and sign to say they will follow them. Children to search for appropriate websites under adult supervision. Age-ap					
Continuous Provision	Games:Use scratch to allow children to create games of their own choice. Art: Use apps for drawing and painting to help children develop ideas. DT:Use apps to meodel drawing and painting. English: Use apps that develop phonics skills and practise sentence construction. Practise spellings (Spelling Shed) Geography; Use apps to explore maps. Use weather tracking apps. History: Use online reosurces and interactive ebooks to research and find eveidence. Maths: Use apps that promote fluency in number and calculation (Numbots)					
Retrieval Practice	• follow simple oral algorithms • use a mouse, touch screen or appropriate access device to target and select options on screen • input a simple sequence of commands to control a digital device with support (Bee Bot)	• create a simple digital collage. • move and resize images with my fingers or mouse. • animate a simple image to speak in role • create a simple animation to tell a story including more than one character. • record a short film using the camera • record and play a film	• follow simple oral algorithms	• identify a chart. • sort physical objects, take a picture and discuss what I have done. • present simple data on a digital device.	• create a simple digital collage. • move and resize images with my fingers or mouse. • animate a simple image to speak in role • create a simple animation to tell a story including more than one character. • record a short film using the camera • record and play a film	• follow simple oral algorithms

		• watch films back • take a photograph and use it in an app			• watch films back • take a photograph and use it in an app	

Launton Church of England Primary School

Computing Lower KS2

	Computing systems and Networks	Creating Media	Programming A	Data and information	Creating media	Programming B
Year group 3	<u>Connecting Computers</u> Learners will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They will also compare digital and non-digital devices. Next, learners will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. Finally, learners will discover the benefits of connecting devices in a network. Lesson 3 requires digital devices with a painting application. Lesson 6 includes a 'network tour', which involves learners identifying	<u>Stop Frame animation</u> Learners will use a range of techniques to create a stop-frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text. Learners will use a tablet to take photos and edit them. They will use the imotion app.	<u>Sequencing Sounds</u> Learners explore the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to 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. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program	<u>Branching Databases</u> Learners will develop their understanding of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Learners will create physical and on-screen branching databases. To conclude the unit, they will create an identification tool using a branching database, which they will test by using it. They will also consider real-world applications for branching databases. Learners will need access to the j2data	<u>Desktop Publishing</u> Learners will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' and begin to understand how these can support them in making their own template for a magazine front cover. They will start to add text and images to create their own pieces of work using	<u>Events and Actions in Porgrams</u> Learners explore the links between events and actions, while consolidating prior learning relating to sequencing. Learners begin by moving a sprite in four directions (up, down, left, and right). They then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of **Pen** blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with

	key parts of your school network.		design through this unit.	Pictogram, Branch, and Database tools (see https://www.j2e.com/jit5#branch or similar).	desktop publishing software. Learners will 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. Learners will explore the Adobe Spark app.	learners designing and coding their own maze-tracing program.
Vocabulary	account, attachment (file), BCC, CC, computer, cyberbully, cyberbullying, domain, email, email account, emoji, information, log off, log on, password, spam, username, account, attachment (file), BCC, CC, computer, cyberbully, cyberbullying, domain, email, email account, emoji, information, log off, log on, password, spam, username animation, application, code, code block, debug, decompose, interface, loop, predict, program, remixing code, repetition code, review, Scratch, sprite, tinker algorithm, computer, computer program, CPU, (central processing unit) data, desktop, GPU (graphics processing unit), HDD (hard disk drive), QR code, RAM (random access memory), ROM (read only memory), tablet device, trackpad desktop, device, DSL (digital subscriber line), file, internet, laptop, network, network map, network switch, router, server, submarine cables, The Cloud, WiFi, wired, wireless, wireless access points application, desktop, digital device, edit, film, film editing software, graphics, import (software), key events, laptop, music, photo, plan, recording (electronic), sound effects, time code, video, voiceover categorise, data, database, fields (data), filter (data), graphs and charts, information, record, sort, spreadsheet						
E safety	Recognise the need to keep personal information and passwords private. They recognise the need for a secure password. Understand that an adult needs to know what they are doing online and understand how to report concerns, including cyberbullying. Understand that any personal information they put online can be seen and used by others. SMART rules.					
Continuous Provision	Games: Allow students to create more complex games in a programming language of your choice. Art: Use advanced features of apps to refine techniques and experiement with effects. DT: Give children opportunities to explore apps that encourage design. English: Use apps to develop fluency in grammar and encourage imaginative description. Use spelling shed to practise spelling rules. Geography: Provide access to apps that help children understand the nature of places around the world. History: Provide access to online reources and interactive ebboks that will help children research, find and evaluate the quality of evidence. French: Use apps to practsi vocabulary in reading, writing and speaking. Use apps to explore the culture of the country being studied. Maths:Use programs to develop geometric understanding. Use Numbots and Ttrockstars to develop calculation fluency. Music: Provide a range of composing applications to experiement with. PE: use health tracker apps and heart rate monitors. Science: Use a range of apps to research scientific knowledge.					
Retrieval Practice	- explain that digital devices accept inputs - explain that digital	explain how an animation/flip book works -	explain that objects in Scratch have attributes (linked to) - identify the objects in	- make up a yes/no question about a collection of objects	- explain the difference between text and images - identify the	- explain the relationship between an event and an action

	devices produce outputs		a Scratch project (sprites, backdrops) - recognise that commands in Scratch are represented as blocks		advantages and disadvantages of using text and images	
Year group 4	<u>The Internet</u> Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will 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. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. Lewarners need to access the internet and use the application Chrome Music Lab.	<u>Audio Production</u> Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will 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. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. Learners need to access the application audacity to produce a podcast.	<u>Repitition in Shapes</u> Learners will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming	<u>Data Logging</u> Learners will consider how and why data is collected over time. Learners will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Learners will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Learners will spend time using a computer to review and analyse data. Towards the end of the unit, learners will pose questions and then use data loggers to automatically collect the data needed to answer those	<u>Photo Editing</u> Learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices.	<u>Repition in Games</u> Learners will explore the concept of repetition in programming using the Scratch environment. The unit begins with a Scratch activity similar to that carried out in Logo in Programming unit A, where learners can discover similarities between two environments. Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout.

				questions. Children will use data loggers.		
Vocabulary	algorithm, atmosphere, automated machine, calculate, climate, design, device, forecast, input, log data, online, predict, record, sensor, source, spreadsheet, units of measurement, weather, weather satellite computer code, code block, conditional statement, decompose, direction, feature, icon, orientation, position, program (verb), Scratch project, Scratch, Scratch script, sprite, Scratch stage, tinker, variable collaboration, content, create, design, edit, embed, feature, header, hyperlinks, image, insert (file), online, plan, tab, web page, website, WWW (world wide web) code (verb), content, copyright, CSS (cascading style sheet), fake news, hacker, hex code, HTML (hypertext markup language), internet browser, permission, script, URL (uniform resource locator), web page collaborate, comment, edocument, edit, email, icon, insert (file), link, presentation, presentation software, reply, reviewing comments, share, spreadsheet, transition abstraction, algorithm design, computer code, code block, computational thinking, computer, decompose, pattern recognition, problem, Scratch, Scratch script, sequence, variable					
E safety	Understand the need for rules to keep them safe when exchanging ideas online. They understand that an adult needs to know what they are doing online and understand how to report concerns, including cyberbullying. Recognise the need to choose age-appropriate games to play on their devices, and when to limit use. Recognise the need to protect their devices from viruses. Understand that any personal information they put online can be seen and used by others. Recognise that they can use online tools to collaborate and communicate with others and the importance of doing this responsibly, choosing age-appropriate websites. Recognise the effect their writing or images might have on others. SMART rules.					
Continuous Proviosn	Games: Allow students to create more complex games in a programming language of your choice. Art: Use advanced features of apps to refine techniques and experiement with effects. DT: Give children opportunities to explore apps that encourage design. English: Use apps to develop fluency in grammar and encourage imaginative description. Use spelling shed to practise spelling rules. Geography: Provide access to apps that help children understand the nature of places around the world. History: Provide access to online reources and interactive ebboks that will help children research, find and evaluate the quality of evidence. French: Use apps to practise vocabulary in reading, writing and speaking. Use apps to explore the culture of the country being studied. Maths:Use programs to develop geometric understanding. Use Numbots and Ttrockstars to develop calculation fluency. Music: Provide a range of composing applications to experiement with. PE: use health tracker apps and heart rate monitors. Science: Use a range of apps to research scientific knowledge.					
Retrieval Practice	discuss why we need a network switch - explain how messages are passed through multiple connections - recognise different connections - describe the internet as a network of networks	- explain how an animation/flip book works	- explain that objects in Scratch have attributes (linked to)	- investigate questions with yes/no answers - make up a yes/no question about a collection of objects	- explain the difference between text and images - identify the advantages and disadvantages of using text and images	- identify a way to improve a program

Launton Church of England Primary School

Computing Upper KS2

	Computing systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
Year group 5	<u>Systems and Searching</u> Learners develop their understanding of computer systems and how information is transferred between systems and devices. Learners 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. Learners 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.	<u>Video Production</u> Learners will learn how to create short videos by working in pairs or groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Learners are guided with step-by-step support to take their idea from conception to completion. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video. Children will access Microsoft Video Editor app.	<u>Selection in Physical</u> Learners will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program it to control components (including output devices — LEDs and motors). Learners will be introduced to conditions as a means of controlling the flow of actions in a program. Learners will make use of their knowledge of repetition and conditions when introduced to the concept of selection	<u>Flat File Databases</u> Learners will look at how a flat-file database can be used to organise data in records. Learners will use tools within a database to order and answer questions about data. They will create graphs and charts from their data to help solve problems. They will also use a real-life database to answer a question, and present their work to others.	<u>Introcuction to Vector Graphics</u> Learners start to create vector drawings. They learn how to use different drawing tools to help them create images. Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. Learners layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work. Learners will access the Google Drawings Application	<u>Selection in Quizes</u> Learners will develop their knowledge of 'selection' by revisiting how 'conditions' can be used in programming, 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 in the Scratch programming environment. They learn how to write programs that ask questions and use selection to control the outcomes based on the answers given. They use this knowledge to design a

			(through the 'if...then...' structure) and write algorithms and programs that utilise this concept. To conclude the unit, learners will design and make a working model of a fairground carousel that will demonstrate their understanding of how the microcontroller and its components are connected, and how selection can be used to control the operation of the model. Throughout this unit, learners will apply the stages of programming design.			quiz in response to a given task and implement it as a program. To conclude the unit, learners evaluate their program by identifying how it meets the requirements of the task, the ways they have improved it, and further ways it could be improved.
Vocabulary	catfishing, cyberbully, cybercriminal, cyberstalking, exclusion, fake profile, harassment, information, online, outing, online safety, password, personal information/data, phishing, trickery, trolling .hex file, .zip file, bluetooth, code block, decompose, emulator, feature, loop, Micro:bit, pedometer, predict, program, systematic, tinker, USB universal serial bus), variable basic commands, bug, computer code, code (verb), debug, error, live loop, loop, pitch, program language, rhythm, Sonic Pi, soundtrack, tempo, timbre, tinker algorithm, company logo, data leak, data privacy, fake news, inaccurate information, index, keywords (internet), network, online, page rank, search engine, web crawler, website, WWW (world wide web) binary code, data, data transmission, discovery, distance, input, Mars Rover, moon, numerical data, output, planet, radio signal, research, scientist, sequence, signal, computer simulation, space (astronomy) algorithm, binary image, bit, bit pattern, CAD (computer-aided design), compression file, CPU (central processing unit), data, digital image, encode, image, JPEG (joint photographic experts group), memory, operating system, pixels, RGB (red, green, blue)					
E safety	Understand the need to keep personal information and passwords private, and know how to choose a secure password. Understand appropriate and inappropriate use of the Internet including excessive use. Recognise the risks and rewards of using Internet communication tools and understand how to protect themselves and the devices they use. Understand the need to respect the rights of other users, and understand their own responsibility for information that is shared and how it may impact on others. SMART Rules					

Continuous provision	Rota of children to set up technology ready for assemembly. Including laptop, screen ,projector and interent search for artist of the week. Games: Allow students to create more complex games in a programming language of your choice. Art: Use advanced features of apps to refine techniques and experiement with effects. DT: Give children opportunities to explore apps that encourage design. English: Use apps to develop fluency in grammar and encourage imaginative description. Use spelling shed to practise spelling rules. Geography: Provide access to apps that help children understand the nature of places around the world. History: Provide access to online reources and interactive ebboks that will help children research, find and evaluate the quality of evidence. French: Use apps to practsi vocabulary in reading, writing and speaking. Use apps to explore the culture of the country being studied. Maths:Use programs to develop geometric understanding. Use Numbots and Ttrockstars to develop calculation fluency. Music: Provide a range of composing applications to experiement with. PE: use health tracker apps and heart rate monitors. Science: Use a range of apps to research scientific knowledge.					
Retrieval Practice	demonstrate how information is shared across the internet - describe the internet as a network of networks	- explain that video is a visual media format - identify features of videos	- explain what an infinite loop does	- explain how information can be recorded - order, sort, and group my data cards	- discuss how vector drawings are different from paper-based drawings	- explain that program flow can branch according to a condition
Year group 6	<u>Communication and Collaboration</u> Learners explore how data is transferred over the internet. Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of	<u>Webpage Creation</u> Learners will be introduced to creating websites for a chosen purpose. Learners 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.	<u>Variables in Games</u> Learners explore the concept of variables in programming through games in Scratch. First, learners find out what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, learners experiment with variables in an	<u>Introduction to Spreadsheets</u> Learners will be supported in organising data into columns and rows to create their own data set. Learners will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. Learners will be taught how to apply	<u>3D Modelling</u> Learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, learners will	<u>Sensing Movement</u> Leaners bring together elements of all the four programming constructs: sequence from Year 3, repetition from Year 4, selection from Year 5, and variables (introduced in Year 6 – 'Programming A'. It offers pupils the opportunity to use all of these constructs in a different, but still familiar environment, while also utilising a physical device — the micro:bit.

	communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet.		existing project, then modify them, before they create their own project. In Lesson 4, learners focus on design. Finally, in Lesson 6, learners apply their knowledge of variables and design to improve their games in Scratch.	formulas that include a range of cells, and apply formulas to multiple cells by duplicating them. Learners will use spreadsheets to plan an event and answer questions. Finally, learners will create charts, and evaluate their results in comparison to questions asked.	examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building. Leaners use the 3D modelling application Tinkercad.	
Vocabulary	algorithm, computer code, computer command, decompose, import (software), indentation (programming), loop, nested loop, random numbers, remix, script libraries, variable barcode, boolean, brand, commuter, contactless, data, data privacy, encrypt, infrared waves, NFC (near field communication), QR (quick response) code, radio waves, RFID (radio frequency identification), signal systems or data analyst, transmission big data, bluetooth, corrupt data, digital revolution, GPS (global positioning system), infrared waves, IoT (internet of things), QR code, RFID, SIM, smart city, smart school acrostic code, brute force hacking, caesar cipher, chip and pin system, cipher, date shift cipher, encrypt, invention, Nth letter cipher, password, pigpen cipher, secure, technological advancement, trial and error background noise, byte, computer, CPU, device, gigabyte, kilobyte, megabyte, memory storage, mouse, operating system (OS), radio play, ROM, sound effects, terabyte, touch screen, trackpad adapt, advertisement, algorithm, bug, CAD, computer code, code (verb), design, edit, electronic components, image rights, image, information, input, invention, loop, output, photo, product, program, repetition (code), screenshot, selection (programming), sequence, structure, variable					
E safety	Recognise their own right to be protected from the inappropriate use of technology by others and their responsibility to report concerns. Understand how to use social networking websites appropriately, keeping an adult informed about their online activity. They make good choices when they present themselves online. Recognise the appropriate online tools to collaborate and communicate with others, understanding how to protect themselves from cyberbullying or causing hurt to others, especially when using social networks (including online gaming communities). Understand the need to respect the rights of other users, and understand their own responsibility for information that is shared and how it may impact on others. SMART rules.					
Continuous Provision	Rota of children to set up technology ready for assemembly. Including laptop, screen ,projector and interent search for artist of the week. Games: Allow students to create more complex games in a programming language of your choice. Art: Use advanced features of apps to refine techniques and experiement with effects. DT: Give children opportunities to explore apps that encourage design. English: Use apps to develop fluency in grammar and encourage imaginative description. Use spelling shed to practise spelling rules. Geography: Provide access to apps that help children understand the nature of places around the world. History: Provide access to online reources and interactive ebboks that will help children research, find and evaluate the quality of evidence. French: Use apps to practsi vocabulary in reading, writing and speaking. Use apps to explore the culture of the country being studied.					

	Maths:Use programs to develop geometric understanding. Use Numbots and Ttrockstars to develop calculation fluency. Music: Provide a range of composing applications to experiement with. PE: use health tracker apps and heart rate monitors. Science: Use a range of apps to research scientific knowledge.					
Retrieval Practice	- describe that a computer system features inputs, processes, and outputs - explain that computer systems communicate with other devices	- discuss the different types of media used on websites - explore a website - I know that websites are written in HTML	- explain that the way a variable changes can be defined - identify examples of information that is variable	- collect data - enter data into a spreadsheet - suggest how to structure my data	- add 3D shapes to a project - move 3D shapes	- apply my knowledge of programming to a new environment - test my program on an emulator