

EYFS	<p>Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, which focuses on the learning and development of children from birth to age five, there are many opportunities for young children to use technology to solve problems and produce creative outcomes.</p> <p>As young children take part in a variety of tasks with digital devices, such as moving a Bee Bot around a classroom, they will already be familiar with the device before being asked to undertake tasks related to the key stage one (KS1 - ages 5 - 7 years) computing curriculum, such as writing and testing a simple program. Not only will children be keen to again use a device they had previously enjoyed using, but their cognitive load will also be reduced, meaning they are more likely to succeed when undertaking activities linked to the next stage in their learning.</p> <p>Within the revised EYFS statutory framework, the Technology strand within Understanding the World has been removed. However, there are opportunities within each area of the framework to enable practitioners to effectively prepare children for studying the computing curriculum.</p> <p>At Our Lady & St. Joseph's we decided to provide the children with play-based opportunities within the Early Years setting such as the use of iPads and the use of the interactive whiteboards. In addition to this, we still provide the children with more formal lessons which are focused around the three main strands of computing curriculum; computer science, information technology and digital literacy. Within computer science, children will have access to Bee-Bots where they will use very simple algorithms to move a Bee-Bot; information technology, children will be learning the basics such as mouse control, simple word processing opening software, saving and printing work; and Digital Literacy, where children will receive E-safety sessions based around the topics: self-imagine and identify; online relationships; online reputation; online bullying; managing online information; health, well-being and lifestyle; privacy and security; and copyright and ownership We believe that providing the children with the above opportunities not only will support them in their transition into KS1 but provide them with a solid foundation in which to confidently engage with the ever-increasing demands of the digital world in which we live in.</p>
-------------	---

Class	Cycle	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Reception		<p>Overview People Who Help us: To help pupils develop their computational thinking skills. Create patterns on a police car, guide a delivery person to their destination and design a uniform for a firefighter!</p> <p>https://www.barefootcomputing.org/earlyyears</p>	<p>Overview Awesome Autumn Three Autumn: Themed activities which see the children explore patterns in Garlands Galore, create a leaf labyrinth and make Pumpkin Soup using computational thinking skills.</p> <p>https://www.barefootcomputing.org/earlyyears</p>	<p>Overview Super Space: Includes 3 space themed activities to develop pupils computational thinking and problem-solving skills.</p> <p>https://www.barefootcomputing.org/earlyyears</p>	<p>Overview Springtime: Three Spring themed activities see the children make a Rabbit run, create Junk scarecrows and explore sequencing whilst planting seeds.</p> <p>https://www.barefootcomputing.org/earlyyears</p>	<p>Overview Summer Fun: Children explore their surroundings and get creative, take a journey and make a map, and discover seaside tangrams, in these three fun activities.</p> <p>https://www.barefootcomputing.org/earlyyears</p>	<p>Overview Boats Ahoy: Takes children on a journey of discovery as they investigate boats. Includes different uses of boats, floating and sinking predictions, creating a good boat through exploring designs and role play.</p> <p>https://www.barefootcomputing.org/earlyyears</p>
Year 1/2	A	<p>Overview Computing systems and networks – Technology around us: The main context of this learning is for pupils' understanding of technology and how it can help them. They will become more familiar with the different components of a computer by developing their keyboard and mouse skills and start to consider how to use technology responsibly.</p>	<p>Overview Creating media – Digital painting: The main context for this learning will be for pupils to 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.</p>	<p>Overview Programming A – Moving a robot: This unit introduces learners 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 floor robot command 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 introduction of algorithms.</p>	<p>Overview Data and information – Grouping data: This unit introduces pupils to data and information. They will begin by using labels to put objects into groups and labelling these groups. Pupils will demonstrate that they can count a small number of objects, before and after the objects are grouped. They will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data.</p>	<p>Overview Creating Media-Digital Writing: The main context of this unit is to promote pupils' understanding of the various aspects of using a computer to create and change text. Learners will familiarise themselves with typing on a keyboard and begin using tools to change the look of their writing, and then they will consider the differences between using a computer and writing on paper to create text.</p>	<p>Overview Programming B - Programming animations: The main context of this unit introduces learners to onscreen 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.</p>
		<u>Learning Breakdown</u>	<u>Learning Breakdown</u> Creating media – Digital painting	<u>Learning Breakdown</u> Programming A – Moving a robot	<u>Learning Breakdown</u> Data and information – Grouping data	<u>Learning Breakdown</u> Creating Media - Digital Writing	<u>Learning Breakdown</u> Programming B - Programming animations

	<p>Computing systems and networks – Technology around us</p> <p>To identify technology.</p> <p>To identify a computer and its main parts.</p> <p>To use a mouse in different ways.</p> <p>To use a keyboard to type on a computer.</p> <p>To use the keyboard to edit text.</p> <p>To create rules for using technology responsibly.</p>	<p>To describe what different freehand tools do.</p> <p>To use the shape tool and the line tools.</p> <p>To make careful choices when painting a digital picture.</p> <p>To explain why I chose the tools I used.</p> <p>To use a computer on my own to paint a picture.</p> <p>To compare painting a picture on a computer and on paper.</p>	<p>To explain what a given command will do.</p> <p>To act out a given word.</p> <p>To combine 'forwards' and 'backwards' commands to make a sequence.</p> <p>To combine four direction commands to make sequences.</p> <p>To plan a simple program.</p> <p>To find more than one solution to a problem.</p>	<p>To label objects. To identify that objects can be counted.</p> <p>To describe objects in different ways.</p> <p>To count objects with the same properties.</p> <p>To compare groups of objects.</p> <p>To answer questions about groups of objects.</p>	<p>To use a computer to write.</p> <p>To add and remove text on a computer.</p> <p>To identify that the look of text can be changed on a computer.</p> <p>To make careful choices when changing text.</p> <p>To explain why I used the tools that I chose.</p> <p>To compare typing on a computer to writing on paper.</p>	<p>To choose a command for a given purpose.</p> <p>To show that a series of commands can be joined together.</p> <p>To identify the effect of changing a value.</p> <p>To explain that each sprite has its own instructions.</p> <p>To design the parts of a project.</p> <p>To use my algorithm to create a program.</p>
B	<p>Overview</p> <p>Computing systems and networks - IT around us:</p> <p>The main context for learning is for pupils to 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.</p>	<p>Overview</p> <p>Creating media - Digital Photography - Take photographs of habitats:</p> <p>The main context for learning is for pupils to learn and to recognise that different devices can be used to capture photographs. The pupils will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real. This unit uses screenshots from the website https://pixlr.com/x/, but you could also use the Pixlr app if you're using tablets.</p>	<p>Overview</p> <p>Programming A Robot Algorithms:</p> <p>This unit will develop pupils' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Pupils will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming. Pupils will design algorithms and then test those algorithms as programs and debug them. Pupils will be given access to a device with a limited range of functions that is designed for young learners.</p>	<p>Overview</p> <p>Data and information Pictograms - Link to our local area:</p> <p>This unit will develop pupils understanding of 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 pupils will use j2e pictogram tool which can be accessed online using a desktop, laptop or tablet computer.</p>	<p>Overview</p> <p>Creating media- Digital music:</p> <p>In this unit, pupils 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.</p>	<p>Overview</p> <p>Programming B -Programming quizzes. Create quizzes about significant people from the past:</p> <p>In this unit pupils will 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, pupils will evaluate their work and make improvements to their programming projects.</p>
	<p>Learning Breakdown</p> <p>Information Technology around us</p> <p>To use technology purposefully to create, organise, store, manipulate, and retrieve digital content.</p> <p>To recognise common uses of information technology beyond school.</p> <p>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</p>	<p>Learning Breakdown</p> <p>Digital Photography</p> <p>To use technology purposefully to create, organise, store, manipulate, and retrieve digital content.</p> <p>To Recognise common uses of information technology beyond school.</p> <p>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</p>	<p>Learning Breakdown</p> <p>Algorithms</p> <p>To understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.</p> <p>To create and debug simple programs.</p> <p>To use logical reasoning to predict the behaviour of simple programs.</p>	<p>Learning Breakdown</p> <p>Pictograms</p> <p>To use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>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.</p> <p>I can identify rules that help keep us safe and healthy in and</p>	<p>Learning Breakdown</p> <p>Digital Music</p> <p>To use technology purposefully to create, organise, store, manipulate, and retrieve digital content.</p> <p>To play tuned and untuned instruments musically.</p> <p>To listen with concentration and understanding to a range of high-quality live and recorded music.</p> <p>To experiment with, create, select, and combine sounds</p>	<p>Learning Breakdown</p> <p>Programming Quizzes</p> <p>To write a multistep algorithm using Scratch Junior (instructing a sprite to follow a path from A to B).</p> <p>To program the movement and appearance of an on-screen sprite.</p> <p>To use logical reasoning to predict the behaviour of simple programs.</p> <p>To customise a background with obstacles.</p>

	internet or other online technologies. To identify rules that help keep us safe and healthy in and beyond the home when using technology.	internet or other online technologies. To identify that some images are not real (fake).		beyond the home when using technology. I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). I can describe the people. I can trust and can share this with; I can explain why I can trust them. I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school).	using the interrelated dimensions of music. To know that work I create belongs to me.	To edit and improve algorithms.
Year 3	<p>Overview Online Safety: Within this unit of work, pupils will gain an understanding of why passwords are important to keep personal information safe. Within this unit of work, pupils will gain and understanding of what it means to 'know' someone and understand this may differ between people online and offline.</p> <p>Connecting Computers: Children 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, children will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. Finally, children will discover the benefits of connecting devices in a network.</p>	<p>Overview Creating Media - Stop frame animation: Children 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 children adding other types of media to their animation, such as music and text. We will use a tablet for this unit as this makes it simpler for children to take the photos and do the editing. unit uses screenshots from iMotion which is an iPad app, but you could also try Stop Motion Studio if you have Android tablets.</p>	<p>Overview Creating Media - Desktop Publishing: Children 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. Children 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 desktop publishing software. Children 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</p>	<p>Overview Branching Databases (Using j2data Branch): During this unit, children will develop their understanding of what a branching database is and how to create one. They will gain an understanding of what attributes are and how to use them to sort groups of objects by using yes/no questions. The children will create physical and on-screen branching databases. Finally, they will evaluate the effectiveness of branching databases and will decide what types of data should be presented as a branching database.</p>	<p>Overview Programming A - Sequencing Sounds: This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most children. 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. Children also apply stages of program design through this unit.</p>	<p>Overview Programming B - Events and Actions in programs: This unit explores the links between events and actions, while consolidating prior learning relating to sequencing. Children 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. Children are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with children designing and coding their own maze-tracing program.</p>
	<p>Learning Breakdown How does a digital device work? This lesson introduces the concepts of input, process, and output. These concepts are fundamental to all digital devices.</p>	<p>Learning Breakdown Can a picture move? Children will discuss whether they think a picture can move. They will learn about simple animation techniques and create their own animations in the style of flip books (flick books) using sticky notes.</p>	<p>Learning Breakdown Words and pictures Children will become familiar with the terms 'text' and 'images' and understand that text and images need to be used carefully to communicate messages clearly. Children will be able to give advantages and</p>	<p>Learning Breakdown Yes or no questions Children will start to explore questions with yes or no answers, and how these can be used to identify and compare objects. They will create their own yes or no questions before</p>	<p>Learning Breakdown Introduction to Scratch This lesson introduces children to a new programming environment: Scratch. Children will begin by comparing Scratch to other programming environments they may have experienced, before familiarising</p>	<p>Learning Breakdown Moving a sprite In this lesson, children will investigate how characters can be moved using 'events'. They will analyse and improve an existing project, and then apply what they have learned to their own projects. They will then</p>

<p>What parts make up a digital device? Children will develop their knowledge of the relationship between inputs, processes, and outputs and apply it to devices and parts of devices that they will be familiar with from their everyday surroundings.</p> <p>How do digital devices help us? Children will apply their learning from Lessons 1 and 2 by using programs in conjunction with inputs and outputs on a digital device. They will create two pieces of work with the same focus, using digital devices to create one piece of work, and non-digital tools to create the other. Children will then compare and contrast the two Approaches.</p> <p>How am I connected? Many digital devices are now connected to other digital devices, e.g. computers through wires, tablets through Wi-Fi, and smartphones through mobile phone networks. The benefit of connecting digital devices is that it allows information to be shared between users and systems. This lesson introduces the concept of connections and moving information between connected devices. Children will learn to explain how and why computers are joined together to form networks.</p> <p>How are computers connected? This lesson introduces key network components, including a server and wireless access points. Children will examine each device's functionality and look at the benefits of networking computers.</p> <p>What does our school network look like?</p>	<p>Frame by frame In the previous lesson, children created their own flip book–style animations. In this lesson, they will develop this knowledge and apply it to make a stop-frame animation using a tablet.</p> <p>What's the story? Children will create a storyboard showing the characters, settings and events that they would like to include in their own stop-frame animation next week.</p> <p>Picture perfect Children will use tablets to carefully create stop-frame animations, paying attention to consistency. Evaluate and make it great! Children will evaluate their animations and try to improve them by creating a brand-new animation based on their feedback.</p> <p>Lights, camera, action! Children will add other media and effects into their animations, such as music and text.</p>	<p>disadvantages of using text, images, or both text and images to communicate messages effectively.</p> <p>Can you edit it? This lesson will build on last week's lesson, in which we looked at using images and text to communicate a message effectively. In this lesson we will look at desktop publishing. Children will think about how to make careful choices regarding font size, colour, and type in an invitation. The use of the Return, Backspace, and Shift keys will be explored and children will be taught how to type age-appropriate punctuation marks. This will build on the typing skills learned in the Year 1 'Digital painting' unit. Children will understand that once content has been added, it can be rearranged on the page.</p> <p>Great template! Children will be introduced to the terms 'templates', 'orientation', and 'placeholders' within desktop publishing software. The children will create their own magazine template, which they will add content to during the next lesson. This lesson has been designed on a laptop using Adobe Spark and this is reflected in the screenshots and videos. Teachers may decide to use the Adobe Spark app, or other software such as Canva or Microsoft Publisher.</p> <p>Can you add content? Children will add their own content (text and images) to the magazine templates they created in lesson 3. They will copy the information for the front of their magazine from a prewritten document and paste it into the chosen place on their magazine cover. Images will be added from within the search facility in Adobe Spark.</p>	<p>using these to split a collection of objects into groups.</p> <p>Making groups Children will continue to develop their understanding of using questions with yes or no answers to group collections of objects. They will learn how to arrange objects in a tree structure and will continue to think about which attributes the questions are related to.</p> <p>Creating a branching database Children will continue to develop their understanding of ordering objects/images in a branching database structure. They will learn how to use an online database tool to arrange objects into a branching database, and will create their own questions with yes or no answers. The children will show that their branching database works through testing.</p> <p>Structuring a branching database Children will continue to develop their understanding of how to create a well-structured database. They will use attributes to create questions with yes or no answers and apply these to given objects. The children will be able to explain why questions need to be in a specific order and will compare the efficiency of different branching databases.</p> <p>Using a branching database Children will independently create a branching database that will identify a given object. They will continue to think about the attributes of objects to write questions with a yes or no answer, which will enable them to separate a group of objects effectively. The children will then arrange the questions and objects into a tree structure, before using their branching database to answer questions.</p>	<p>themselves with the basic layout of the screen.</p> <p>Programming sprites Children will create movement for more than one sprite. In doing this, they will design and implement their code, and then will create code to replicate a given outcome. Finally, they will experiment with new motion blocks.</p> <p>Sequences Children will be introduced to the concept of sequences by joining blocks of code together. They will also learn how event blocks can be used to start a project in a variety of different ways. In doing this, they will apply principles of design to plan and create a project.</p> <p>Ordering commands This lesson explores sequences, and how they are implemented in a simple program. Children have the opportunity to experiment with sequences where order is and is not important. They will create their own sequences from given designs.</p> <p>Looking good This lesson develops children's understanding of sequences by giving them the opportunity to combine motion and sounds in one sequence. They will also learn how to use costumes to change the appearance of a sprite, and backdrops to change the appearance of the stage. They will apply the skills in Activity 1 and 2 to design and create their own project, including sequences, sprites with costumes, and multiple backdrops.</p> <p>Making an instrument Children will create a musical instrument in Scratch. They will apply the concept of design to help develop programs and use programming blocks — which they have been introduced to</p>	<p>extend their learning to control multiple sprites in the same project.</p> <p>Maze movement Children will program a sprite to move in four directions: up, down, left, and right. They will begin by choosing a sprite and sizing it to fit in with a given background. Children will then create the code to move the sprite in one direction before duplicating and modifying it to move in all four directions. Finally, they will consider how their project could be extended to prove that their sprite has successfully navigated a maze.</p> <p>Drawing lines Children will be introduced to extension blocks in Scratch using the Pen extension. Children will use the pen down block to draw lines, building on the movement they created for their sprite in Lesson 2. Children will then decide how to set up their project every time it is run.</p> <p>Adding features Children will be given the opportunity to use additional Pen blocks. They will predict the functions of new blocks and experiment with them, before designing features to add to their own projects. Finally, they will add these features to their projects and test their effectiveness.</p> <p>Debugging movement Children will explore the process of debugging, specifically looking at how to identify and fix errors in a program. Children will review an existing project against a given design and identify bugs within it. They will then correct the errors, gaining independence as they do so. Children will also develop their projects by considering which new setup blocks to use.</p>	<p>Making a project</p>
--	---	--	---	--	---	--------------------------------

	Children will further develop their understanding of computer networks. They will see examples of network infrastructure in a real-world setting and relate them to the activities in Lesson 5.		Children will think about the different ways information can be laid out on a page. They will look at a range of page layouts such as letters and newspapers and begin to think about the purpose of each of these. Why desktop publishing? Children will explain what desktop publishing means in their own words. They will think about how desktop publishing is used in the wider world and consider the benefits of using desktop publishing applications.	Presenting information Children will compare two ways of presenting information. They will demonstrate their ability to explain what information is shown in a pictogram and a branching database. The children will begin to compare the two ways of presenting information.	throughout the unit. They will learn that code can be copied from one sprite to another, and that projects should be tested to see if they perform as expected.	Children will design and create their own projects. Using a template (which can be blank or partially completed), children will complete projects to move a sprite around a maze, with the option to leave a pen trail showing where the sprite has moved. Ideally, projects will include setup blocks to position the sprite at the start of the maze and clear any lines already on the screen.
Year 4	Overview The internet: Children 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.	Overview Audio production: Children will identify the input device (microphone) and output devices (speaker or headphones) required to work with sound digitally. Children will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, children will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, children will evaluate their work and give feedback to their peers. Throughout this unit, there are opportunities to model actions for the children in Audacity, or to demonstrate a concept through an animated screen recording.	Overview Repetition in shapes: 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.	Overview Data logging: In this unit, children will consider how and why data is collected over time. Children 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. Children 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, children will pose questions and then use data loggers to automatically collect the data needed to answer those questions.	Overview Photo editing: Children 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. Throughout this unit, there are opportunities to model with photo editing applications or to demonstrate a concept using the included screen recordings.	Overview Repetition in games: Children 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 Children can discover similarities between two environments. Children 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. Throughout this unit, there are opportunities to model within Scratch or to demonstrate a concept through a video.
	Learning Breakdown Connecting networks Children will explore how a network can share messages with another network to form the internet. They will consider some of the network devices involved in this, such as routers, and will also discuss what should be kept in and out of a network to keep safe. What is the internet made of? Children will describe the parts of a network and how they connect to each other to form the internet. They will use this	Learning Breakdown Recording sound Children will identify the input devices used to record sound and output devices needed to listen to it. They will then record their voices using a computer and reflect on what makes a good audio recording. Lastly, Children will consider ownership and copyright issues related to recordings. Editing audio Children will record and re-record their voices to improve their recordings. They will edit	Learning Breakdown Programming a screen turtle This lesson will introduce Children to programming in Logo. Logo is a text-based programming language where Children type commands that are then drawn on screen. Children will learn the basic Logo commands and will use their knowledge of them to read and write code. Programming letters In this lesson, Children will create algorithms (a precise set of ordered instructions, which	Learning Breakdown Answering questions Children will consider what data can be collected and how it is collected. They will think about data being collected over time. Children will also think about questions that can and can't be answered using available data and reflect on the importance of collecting the right data to answer questions. Data collection Children will build on the idea of collecting data over time and be introduced to the idea of	Learning Breakdown Changing digital images Introduce Children to the concept of editing images. They will go on to explore when we need to rotate and crop an image as well as how to use an image editor to make these changes. Children will then discuss image composition. Recolouring Children will look at the effect that different colours and filters can have on an image. They will choose appropriate effects to fit a scenario and explain how they	Learning Breakdown Using loops to create shapes Children look at real-life examples of repetition and identify which parts of instructions are repeated. Children then use Scratch, a block-based programming environment, to create shapes using count-controlled loops. They consider what the different values in each loop signify, then use existing code to modify and create new code, and work on reading code and predicting what the output will be once the code is run.

<p>understanding to help explain how the internet lets us view the World Wide Web and recognise that the World Wide Web is part of the internet which contains websites and web pages.</p> <p>Sharing information Children will explore what can be shared on the World Wide Web and where websites are stored. They will also explore how the World Wide Web can be accessed on a variety of devices.</p> <p>What is a website? Children will analyse a website and identify the key parts. They will then consider what content can be added to websites and what factors they should consider before adding content to a website. Finally, they will use a website which enables them to create their own content online.</p> <p>Who owns the web? Children will explore who owns the content on the World Wide Web (or 'web' for short). They will explore a variety of websites and will investigate what they can and cannot do with the content on them. They will also relate this to principles of ownership and sharing in the real world.</p> <p>Can I believe what I read? Children will gain an appreciation of the fact that not everything they see on the internet is true, honest, or accurate. They will review images and decide whether or not they are real, before looking at why web searches can return ambiguous (and sometimes misleading) results. Finally, Children will complete a practical activity, demonstrating how quickly information can spread beyond their control.</p>	<p>the recordings, removing long pauses and mistakes. Children will also listen to a range of podcasts and identify the features of a podcast.</p> <p>Planning a podcast Children will record their voices and then import and align sound effects to create layers in their recordings. Children will learn how to save their work so it remains editable. They will then plan their own podcast which they will work on in future lessons.</p> <p>Creating a podcast Children will record the voice tracks for their podcast. They will review their recordings and re-record if necessary. Children will edit, trim, and align their voice recordings, and then save their project so they can continue working on it in the next lesson.</p> <p>Combining audio Children will develop their podcast further by adding content such as sound effects and background music. The audio will be layered with their existing voice recordings and exported as an audio file.</p> <p>Evaluating podcasts Children will evaluate their own podcasts and that of others. After looking at the evaluation, Children will decide if they can improve their podcast and then make any changes they have chosen.</p>	<p>can be turned into code) for their initials. They will then implement these algorithms by writing them in Logo commands to draw the letter. They will debug their code by finding and fixing any errors that they spot.</p> <p>Patterns and repeats Children will first look at examples of patterns in everyday life. They will recognise where numbers, shapes, and symbols are repeated, and how many times repeats occur. They will create algorithms for drawing a square, using the same annotated diagram as in Lesson 2. They will use this algorithm to program a square the 'long' way and recognise the repeated pattern within a square. Once they know the repeated pattern, they will use the repeat command within Logo to program squares the 'short' way.</p> <p>Using loops to create shapes Children will work with count-controlled loops in a range of contexts. First, they will think about a real-life example, then they will move on to using count-controlled loops in regular 2D shapes. They will trace code to predict which shapes will be drawn, and they will modify existing code by changing values within the code snippet.</p> <p>Breaking things down Children will focus on decomposition. They will break down everyday tasks into smaller parts and think about how code snippets can be broken down to make them easier to plan and work with. They will learn to create, name, and call procedures in Logo, which are code snippets that can be reused in their programming.</p> <p>Creating a program Children will apply the skills that they have learnt in this unit to create a program containing a count-controlled loop. Over the</p>	<p>collecting data automatically using computers such as data loggers. They will also be introduced to the concept that computers can capture data from the physical world using input devices called 'sensors'. Children will establish that sensors can be connected to data loggers, which can automatically collect data while not attached to a computer.</p> <p>Logging Children will explore how data loggers work. They will record data at set moments in time and draw parallels with the data points that a data logger captures at regular intervals. Children will use data loggers away from a computer, then they will connect the loggers to a computer and download the data.</p> <p>Analysing data Children will open an existing data file and use software to find out key information. They will analyse a data file which is a five-hour log of hot water cooling to room temperature.</p> <p>Data for answers Children will think about questions that can be answered using collected data. They will choose a question to focus on and then plan the data logging process that they need to complete. After Children have completed their plan, they will set up the data loggers to check that their plan will work. This setting up is designed to ensure that the data collection will work, and that Children will have data to use in the next lesson.</p> <p>Answering my question Children will access and review the data that they have collected using a data logger. They will then use the data collected to answer the question that they selected in the previous lesson. Children will also reflect on the benefits of using a data logger.</p>	<p>made their choices. They will then edit the images using different effects to suit two different scenarios.</p> <p>Cloning Children will be introduced to the cloning tool and its use in both changing the composition of a photo and photo retouching. They will see how parts of a photo can be removed or duplicated using cloning. Children will consider what parts of an image can be retouched and learn techniques to make this as unnoticeable as possible. Finally, they will consider when it is necessary to edit photographs in this way.</p> <p>Combining Children learn how to use different tools to select areas of an image. Children then use copy and paste within one image and between two images to produce a combined image. Finally, Children will consider when it's appropriate to edit an image and discuss some of the ethics around retouching photos.</p> <p>Creating Children will apply all the skills they have learnt in the unit so far. They will start by reviewing some images and considering what makes an image look real or made up. Children will then plan their own image. They will choose from a selection of images, open them and edit them to create their own project.</p> <p>Evaluating Children will review the image that they created in Lesson 5. After they have reviewed their image, they will have the opportunity to make changes to their image based on their review. Children will then add text to their image to complete it as a publication.</p>	<p>Different loops Children look at different types of loops: infinite loops and count-controlled loops. They practise using these within Scratch and think about which might be more suitable for different purposes.</p> <p>Animate your name Children create designs for an animation of the letters in their names. The animation uses repetition to change the costume (appearance) of the sprite. The letter sprites will all animate together when the event block (green flag) is clicked. When they have designed their animations, the Children will program them in Scratch. After programming, Children then evaluate their work, considering how effectively they used repetition in their code.</p> <p>Modifying a game Children look at an existing game and match parts of the game with the design. They make changes to a sprite in the existing game to match the design. They then look at a completed design and implement the remaining changes in the Scratch game. They add a sprite, re-use and modify code blocks within loops, and explain the changes made.</p> <p>Designing a game Children look at a model project that uses repetition. They then design their own games based on the model project, producing designs and algorithms for sprites in the game. They share these designs with a partner and have time to make any changes to their design as required.</p> <p>Creating your games Children build their games, using the designs they created in Lesson 5. They follow their algorithms, fix mistakes, and refine designs in their work as they build. They evaluate their</p>
--	--	---	---	---	--

			<p>course of the lesson, they will design wrapping paper using more than one shape, which they will create with a program that uses count-controlled loops. They will begin by creating the algorithm, either as an annotated sketch, or as a sketch and algorithm, and then implement it as code. They will debug their work throughout and evaluate their programs against the original brief.</p>			<p>work once it is completed and showcase their games at the end.</p>
Year 5	<p>Overview E-Safety: Throughout the e-safety lessons that are incorporated to be taught alongside this unit, pupils will be able to depict the importance of secure passwords and how they can protect private information online. Pupils will be able to use prior learning from Year 4, where they were introduced to creating passwords. Pupils should be able to use this information to help them understand what constitutes as a 'safe' password and what does not.</p> <p>Computer Systems and Networks: In this unit, pupils will develop their understanding of computer systems and how information is transferred between systems and devices. Learners will consider small - scale systems as well as large - scale systems. They will explain the input, output, and process aspects of a variety of different real -world systems. Learners will also take part in a collaborative online project with other class members and develop their skills in working together online.</p>	<p>Overview E- Safety: Throughout the e-safety lessons that are incorporated to be taught alongside this unit, pupils will advance their knowledge of community and what this looks like online. Pupils will be made aware of how to create a safe community /group of friends on social media platforms. This progresses on from the Year 4 unit that pupils covered, which looked at staying private online. Pupils will be able to use the transferrable skills from that unit of study to secure social media platforms and what can be seen from those that are not immediately known to them.</p> <p>Data and Information: Flat - File Databases: This unit looks 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.</p>	<p>Overview E-Safety: Throughout the e-safety lessons that are being taught alongside movie making, pupils will investigate emails and delve deeper into spam. Pupils will begin to show an understanding of what constitutes to emails appearing in the spam folder, how these can be removed and the shape in which they take to affect the email platform. Pupils will have an understanding of email access and a range of folders that can be found within this platform from Year 3. Pupils will have a knowledge of what an email look likes, what the subject refers to and how to send them. This E -Safety unit will allow them to use this knowledge to understand how the subject can affect the folder in which emails do appear.</p> <p>Programming - Selection in Quizzes: In this unit, pupils 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 will represent this understanding in algorithms, and then by constructing programs in the Scratch programming environment. Pupils will learn how to write programs that ask questions and use selection to control the outcomes based on</p>	<p>Overview E- Safety: This unit of study focus on citing references. Pupils will be able to use this understanding to help them clearly show a knowledge of why key work needs to be referenced to. Pupils will also begin to learn about references and the implications that not doing so can have. Pupils will develop an understanding of copyright and the form in which this takes.</p> <p>Creating Media - Video Editing: In this unit, pupils will learn how to create short videos by working in pairs or groups. As they progress through the unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. At the conclusion of the unit, children have the opportunity to reflect on and assess their progress in creating a video.</p>	<p>Overview E- Safety: Pupils will use this knowledge and understanding to aid them throughout their E-Safety unit of study. They will learn about the power of images and how they can digitally be altered. Pupils should be able to use learning from RHE to see that social media is used as a means of portraying the 'best bits' of a life as opposed to all the negatives.</p> <p>Programming -Selection in Physical Computing: In this unit, pupils 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 components (including output devices - LEDs and motors) through the application of their existing programming knowledge. Learners are introduced to conditions as a means of controlling the flow of actions and make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the if, then structure).</p>	

			<p>the answers given, and they will use this knowledge to design a quiz in response to a given task and implement it as a program. To conclude the unit, children will 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</p>			
	<p><u>Learning Breakdown</u> E-Safety - Password Safety Computer Systems and Networks</p> <p>To explain that computers can be connected together to form systems.</p> <p>To recognise the role of computer systems in our lives</p> <p>To recognise how information is transferred over the internet.</p> <p>To explain how sharing information online lets people in different places work together.</p> <p>To contribute to a shared project online.</p> <p>To evaluate different ways of working together online.</p>	<p><u>Learning Breakdown</u> E-Safety - Digital Citizenship Community</p> <p>Data and Information: Flat-File Databases</p> <p>To use a form to record information.</p> <p>To compare paper and computer-based databases.</p> <p>To outline how you can answer questions by grouping and then sorting data.</p> <p>To explain that tools can be used to select specific data.</p> <p>To explain that computer programs can be used to compare data visually.</p> <p>To use a real-world database to answer questions.</p>	<p><u>Learning Breakdown</u> E-Safety - Spam</p> <p>Programming: Selection in Quizzes</p> <p>To explain how selection is used in computer programs.</p> <p>To relate that a conditional statement connects a condition to an outcome.</p> <p>To explain how selection directs the flow of a program.</p> <p>To design a program that uses selection.</p> <p>To create a program that uses selection.</p> <p>To evaluate my program.</p>	<p><u>Learning Breakdown</u> E-Safety - Citing Online Sources and Copyright Creating</p> <p>Media: Video Editing To explain what makes a video effective</p> <p>To use a digital device to record video. To capture video using a range of techniques.</p> <p>To create a storyboard outlining scenes in the video.</p> <p>To identify that video can be improved through reshooting and editing.</p> <p>To consider the impact of the choices made when making and sharing a video.</p>	<p><u>Learning Breakdown</u> E-Safety - Photo Alteration</p> <p>Programming: Selection in Physical Computing</p> <p>To control a simple circuit connected to a computer.</p> <p>To write a program that includes count-controlled loops.</p> <p>To explain that a loop can stop when a condition is met.</p> <p>To explain that a loop can be used to repeatedly check whether a condition has been met.</p> <p>To design a physical project that includes selection.</p> <p>To create a program that controls a physical computing project.</p>	
Year 6	<p><u>Overview</u> E-Safety -Cyberbullying: Children will learn to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact in the context of comparing cyberbullying to bullying in person and developing strategies for dealing with online bullying.</p> <p>Computer systems and networks – communication and collaboration: In this unit, children will explore how data is transferred over the</p>	<p><u>Overview</u> E-Safety -Secure websites: Children will learn to use technology safely, respectfully and responsibly in the context of identifying secure and unsecure websites.</p> <p>Creating media - web pages: Children will be introduced to creating websites for a chosen purpose. They will identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process, the children will pay specific attention to copyright and fair use of media, the</p>	<p><u>Overview</u> E-Safety - People online: Children will learn to use technology safely, respectfully and responsibly in the context of identifying information that is safe and unsafe to share with online friends.</p> <p>Programming - Variables in games using Scratch: This unit explores the concept of variables in programming through games in Scratch. First, children will 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</p>	<p><u>Overview</u> E-Safety: Girls and Boys Online Children will learn to use technology safely, respectfully and responsibly, learning to be discerning in evaluating digital content and will work in the context of evaluating media aimed at boys and girls.</p> <p>Data and information – Introduction to spreadsheets: This unit introduces the children to spreadsheets. They will be supported in organising data into columns and rows to create their own data set. They will be taught the importance of formatting data to support calculations, while also being introduced to</p>	<p><u>Overview</u> E-Safety – SMARTBots: Children will learn to use technology safely, respectfully and responsibly in the context of identifying how to behave in a range of online scenarios. They will revise and revisit all of the online safety education they have undertaken and apply it to various scenarios.</p> <p>3D Modelling: 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.</p>	<p><u>Overview</u> Programming - Sensing movement: This unit is the final KS2 programming unit and brings 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. The unit begins with a simple program for pupils to build in and test within the new programming environment,</p>

<p>internet. They will initially focus on addressing, before they move on to the makeup and structure of data packets. Children will then look at how the internet facilitates online communication and collaboration; they will complete shared projects online and evaluate different methods of communication. Finally, they will learn how to communicate responsibly by considering what should and should not be shared on the internet.</p>	<p>aesthetics of the site, and navigation paths.</p>	<p>scoreboard. In Lessons 2, 3, and 5, which follow the UseModify-Create model, children will experiment with variables in an existing project, then modify them, before they create their own project. In Lesson 4, children focus on design. Finally, in Lesson 6, children apply their knowledge of variables and design to improve their games in Scratch.</p>	<p>formulas and will begin to understand how they can be used to produce calculated data. Children will be taught how to apply formulas that include a range of cells and apply formulas to multiple cells by duplicating them. They will use spreadsheets to plan an event and answer questions. Finally, they will create charts and evaluate their results in comparison to questions asked.</p>	<p>They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, learners will examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building.</p>	<p>before transferring it to their micro:bit. Pupils then take on three new projects in Lessons 2, 3, and 4, with each lesson adding more depth.</p>
<p><u>Learning Breakdown</u> E-Safety: Talking Safely Online To find similarities and differences between in person and cyberbullying. To identify good strategies to deal with cyberbullying. Computer systems and networks – communication and collaboration To explain the importance of internet addresses. To recognise how data is transferred across the internet, understanding what a data packet is. To explain how sharing information online can help people to work together, learning how different media can be shared and accessed online. To evaluate different ways of working together online, recognising that working together on the internet can be public or private. To recognise how we communicate using the internet and how to choose methods of communication to suit particular purposes. To evaluate different methods of online communication, learning how to decide when to share information online.</p>	<p><u>Learning Breakdown</u> E-Safety: Secure websites To identify secure websites by identifying privacy seals of approval. Creating media: web pages To review an existing website and consider its structure and to know that websites are written in HTML. To plan the features of a web page, recognising the common features of a web page and drawing a web page layout that suits their purpose. To consider the ownership and use of images (copyright), to know why this is important and to describe what is meant by the term 'fair use'. To recognise the need to preview pages, adding content to their own web pages and evaluating what their web page looks like on different devices, suggesting/making edits. To outline the need for a navigation path, explaining what a navigation path and why they are useful. To make multiple web pages and link them using hyperlinks. To recognise the implications of linking to content owned by other people, creating hyperlinks to link to other people's work and</p>	<p><u>Learning Breakdown</u> E-Safety: People online To understand the benefits and pitfalls of online relationships. To identify information that they should never share. Programming Variables in games using Scratch To define a 'variable' as something that is changeable, explaining that the way a variable changes can be defined, and identify that variables can hold numbers or letters. To explain why a variable is used in a program, to identify a program variable as a placeholder in memory for a single value and recognise that the value of a variable can be changed. To choose how to improve a game by using variables. To design a project that builds on a given example, choosing the artwork for their project, creating algorithms for their project and explaining design choices. To use a design to create a project and to test the code that they have written. To evaluate their project, identifying ways that their game could be improved.</p>	<p><u>Learning Breakdown</u> E-Safety: Girls and Boys Online To identify how the media play a powerful role in shaping ideas about girls and boys Data and information – Introduction to spreadsheets 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.</p>	<p><u>Learning Breakdown</u> E-Safety: SMARTBots 3D Modelling To recognise that you can work in 3 dimensions on a computer and to add and move 3D objects in a project. To modify 3D objects in a project by resizing and recolouring. To recognise that 3D objects can be duplicated, rated and combined. To plan, construct and modify a 3D model.</p>	<p><u>Learning Breakdown</u> Programming – Sensing movement To create a programme 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 and develop a project that uses inputs and outputs on a controllable device.</p>

	To understand that communication on the internet may not be private.	evaluating the user experience of a website.				
--	--	--	--	--	--	--

