Computing Curriculum Map 24/25

KS1 & KS2 will us the Teach Computing resources to deliver the three strands of the computing curriculum: Computer Science (the scientific and practical study of computation: what can be computed, how to compute it, and how computation may be applied to the solution of problems); Information Technology how computers and telecommunications equipment work, and how they may be applied to the storage, retrieval, transmission and manipulation of data); and Digital Literacy (the ability to effectively, responsibly, safely and critically navigate, evaluate and create digital artefacts using a range of digital technologies). This will be augmented with the ProjectEVOLVE online safety curriculum and resources. Early Years will use age-appropriate material and resources to help children develop basic skills and understanding of computing as a foundation for future learning, including using Barefoot Computing resources when appropriate.

Nursery	Autumn		Spring		Summer	
	Overview		Overview		Overview	
	Introduction to class technology	Toys with moving parts, iPads, following instructions	Friction vehicles, iPad apps (paint and music)	IWB games and activities	iPads as cameras, computational thinking	Desktop PC games, using technology for a purpose
	Development Matters (Non-Statutory Guidance) Links for 3-4 YO Expectations					
	While there are no longer specific statutory requirements for children to reach a developmental goal in technology, we believe that as children grow ever more proficient in using technology at home and at school, we need to ensure that they access it safely and build a solid foundation of computational skills to enable them to progress in their learning of computing throughout the school. This will be encouraged through play, exploration, adult interaction, and short adult led activities. We will also focus on ensuring our children are safe users of technology, both in and out of school. To do this, the team will use the Project Evolve resources as a foundation for building age-appropriate sessions, removing content where necessary, on areas that have been identified as needing teaching through conversations with all stakeholders, children, families and school staff. Nursery staff will also use Online Safety stories, written by authors to engage children about Online Safety, in an age-appropriate way (Smartie the Penguin, Digi Duck)					
	Nursery Curriculum		Nursery Curriculum		Nursery Curriculum	
	Basic Skills Children will explore technology in the nursery environment with opportunities to use simple apps on the iPads and simple games on the computers using the keyboard. Children will be able to use the school iPads for play, learning how to be respectful and safe with the equipment. Children will learn to turn the iPads on and off, and use the volume buttons and headphones, promoting good digital citizenship. Children will have the opportunity to explore simple toys e.g. friction vehicles. Children will be encouraged to develop an understanding of cause and effect.		**Basic Skills** Children will learn how to make marks on simple paint apps on iPads and computers. Children will explore simple music apps on the iPads. Children will explore taking photos and videos on the iPads Children will learn to enter the password onto the computers to activate them, and to play simple games using the mouse (early mouse skills). Children will explore how to make a BeeBot move through play. Children will play games listening to and following instructions. Children will learn that sequencing is putting things in the correct order through exploring this with nursery rhymes, daily routines and stories.		**Basic Skills** Children will begin to use the technology available for a purpose – iPads to take photographs of their work, or to take videos of their story telling etc. Children will learn to logon to the class PC's with a simple login name and password (nur01, 123) Children will learn to use the mouse to select the game they would like to play, and to navigate between games. Children will begin to learn how to use QR codes around the classroom to access specific websites. Children will begin to explore how to program a Beebot to go in a specified direction Children will play games involving giving and following precise instructions to complete an obstacle course or complete an activity	
	Prior Knowledge		Prior Knowledge		Prior Knowledge	
	Experiences at home and previous settings		Experiences at home and previous settings		Experiences at home and previous settings	
	Future Knowledge		Future Knowledge		Future Knowledge	
	Reception – using technology & following instructions		Reception – using technology & following instructions		Reception – using technology & following instructions	

Reception	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Overview	Overview	Overview	Overview	Overview	Overview
	Introduction to class technology – friction vehicles, iPads, desktop PC's, IWB Barefoot Computing – Awesome Autumn	Computing systems and networks 1: Using a computer Barefoot Computing - Busy Bodies	Programming 1: All about instructions Barefoot Computing - Winter Warmers	Computing systems and networks 2: Exploring hardware Barefoot Computing - Springtime	Programming 2: Programming Bee-Bots Barefoot Computing - Summer Fun	Data handling: Introduction to data Barefoot Computing - Boats Ahoy
	Online Safety Overview					
	Smartie the Penguin, Digi Duck, Pantosaurus (NSPCC). Emphasis on safe use of technology and what to do if something makes children feel upset, uncomfortable, worried or scared; stop before you click and tell a grown up. In addition to the ProjectEVOLVE curriculum and resources.					
	ProjectEVOLVE Self-Image and Identity: Online Bullying:	ProjectEVOLVE Managing Online Information: Health, Well-being and Lifestyle:	ProjectEVOLVE Privacy and Security:	ProjectEVOLVE Copyright and Ownership: Managing Online Information:	ProjectEVOLVE Online Relationships:	ProjectEVOLVE Online Reputation: Online Bullying:
	Early Years Framework Links - Early Learning Goals					
	While there are no longer any specific 'Technology' Early Learning Goals outlined in the Early Years Framework, Reception children will be given the opportunity to develop basic skills and understanding which will enable them to have a strong foundation upon which to build computing skills and knowledge in later years. The focus will be on ensuring they have strong communication and language skills, the opportunity to problem solve and develop reasoning skills, and the opportunity to explore technology in school and at home, using it for a purpose. There will be a strong focus on the characteristics of effective learning; playing and exploring - children investigate and experience things, and 'have a go'; active learning - children concentrate and keep on trying if they encounter difficulties and enjoy achievements; and creating and thinking critically - children have and develop their own ideas, make links between ideas, and develop strategies for doing things. Computational thinking and basic technology skills will be introduced in a cross curricular way which will encompass a wide range of Early Learning Goals from all seven areas of learning.					
	Reception	Reception	Reception	Reception	Reception	Reception
	• Keyboards • Logging in and out • Mouse skills • Learn about different purposes of technology and how it helps us in our daily lives – microwave, TV etc. • Learn how to use devices around classroom eg remote control, iPads, desktop and mouse	**Barefoot Computing** Busy Bodies: algorithms, decomposition, debugging, logic, patterns, abstraction. • Explore parts of the body • Explore growth and movement • Create and adapt simple algorithms to form a routine of movements	• Following instructions • Giving simple instructions • Use simple apps and programmes to reinforce learning mouse skills • Learn how to play simple games on IWB/ iPads **Barefoot Computing** Winter Warmers: algorithms, creating, collaboration, decomposition, tinkering, persevering.	**Barefoot Computing** Springtime: abstraction, tinkering, creating, collaborating, algorithms, persevering, decomposition. • Create a rabbit run • Create junk scarecrows • Explore sequencing whilst planting seeds	• Learn how to take photos and record video on iPad • Learn how to retrieve information from tech searches • Learn how to use search engines to find things out **Barefoot Computing** Summer Fun: tinkering, persevering, patterns, logic, decomposition, debugging, collaborating, algorithms.	**Barefoot Computing** Boats Ahoy: algorithms, decomposition, creating, tinkering, logic, patterns, abstraction, collaborating. • Investigate different uses of boats • Floating and sinking predictions • Creating a boat through exploring designs

	• Learn how to use paint programme to mark make using pen features/iPad **Barefoot Computing** Awesome Autumn: creating, pattern, logic, algorithms, decomposition, collaborating. • Explore patterns in Garlands Galore • Create a leaf labyrinth • Pumpkin soup using computational thinking skills		• Snowmen scarves and patterns • Creating igloos • Bird feeders		• Explore surroundings and get creative • Take a journey and make a map • Discover seaside tangrams	
	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE
	Self-Image and Identity: I can recognise, online or offline, that anyone can say 'no' - 'please stop' - 'I'll tell' - 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset. **Online Bullying:** I can describe ways that some people can be unkind online.	**Managing Online Information:** I can identify devices I could use to access information on the internet. **Health, Well-being and Lifestyle:** I can identify rules that help keep us safe and healthy in and beyond the home when using technology. I can give some simple examples of these rules	**Privacy and Security:** I can identify some simple examples of my personal information (e.g., name, address, birthday, age, location). I can describe who would be trustworthy to share this information with; I can explain why they are trusted.	**Copyright and Ownership:** I know that work I create belongs to me. I can name my work so that others know it belongs to me. **Managing Online Information:** I can talk about how to use the internet as a way of finding information online.	**Online Relationships:** I can recognise some ways in which the internet can be used to communicate. I can give examples of how I (might) use technology to communicate with people I know	**Online Reputation:** I can identify ways that I can put information on the internet. **Online Bullying:** I can offer examples of how I this can make others feel
	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge
	Experiences of technology at home and in Nursery	Experiences of technology at home and in Nursery	Experiences of technology at home and in Nursery	Experiences of technology at home and in Nursery	Experiences of technology at home and in Nursery	Experiences of technology at home and in Nursery
	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge
	Y1 – Computer Systems and Networks	Y1 – Creating Media	Y1 – Programming	Y1 – Data & Information	Y1 – Creating Media	Y1 - Programming
Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Overview	Overview	Overview	Overview	Overview	Overview
	COMPUTING SYSTEMS AND NETWORKS Technology around us Learners will develop their understanding of technology	CREATING MEDIA Digital Painting Learners will develop their understanding of a range of tools used for digital painting.	PROGRAMMING A Moving a robot Learners will be introduced to early programming concepts. Learners will	DATA AND INFORMATION Grouping data This unit introduces learners to data and information. Labelling, grouping, and	CREATING MEDIA Digital writing Learners will develop their understanding of the various aspects of using a computer	PROGRAMMING B Introduction to animation Learners will be introduced to on-screen programming through ScratchJr. Learners

	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. **Online Safety (ProjectEVOLVE)** Health, Wellbeing and Lifestyle Online Relationships	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. **Online Safety (ProjectEVOLVE)** Self-Image & Identity Privacy & Security	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 introduction of algorithms. **Online Safety (ProjectEVOLVE)** Online Relationships Online Bullying	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 documents **Online Safety (ProjectEVOLVE)** Copyright & Ownership	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. **Online Safety (ProjectEVOLVE)** Online Reputation	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. **Online Safety (ProjectEVOLVE)** Managing Online Information
	National Curriculum	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**
	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content *Recognise common uses of Information Technology beyond school *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	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content	*Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. *Create and debug simple programs. *Use logical reasoning to predict the behaviour of simple programs *Recognise common uses of information technology beyond school	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content *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	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content *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	*Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. *Create and debug simple programs. *Use logical reasoning to predict the behaviour of simple programs

	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum
	1. Technology around us • I can explain technology as something that helps us • I can locate examples of technology in the classroom • I can explain how these technology examples help us • I can explain where to go for help when I have concerns about content or contact when online. **2. Using technology** • I can name the main parts of a computer • I can switch on and log into a computer • I can use a mouse to click and drag **3. Developing mouse skills** • I can use a mouse to open a program • I can click and drag to make objects on a screen • I can use a mouse to create a picture **3. Using a computer keyboard** • I can say what a keyboard is for	**1. How can we paint using computers?** • I can make marks on a screen and explain which tools I used • I can draw lines on a screen and explain which tools I used • I can use the paint tools to draw a picture **2. Using shape and lines** • I can make marks with the shape and line tools • I can use the shape and line tools effectively • I can use the shape and line tools to recreate the work of an artist. **3. Making Careful Choices** • I can choose appropriate shapes • I can make appropriate colour choices • I can create a picture in the style of an artist. **4. Why did I choose that?** • I can explain that different paint tools do different jobs. • I can choose appropriate paint tools and colours	**1. Buttons** • I can predict the outcome of a command on a device • I can match a command to an outcome • I can run a command on a device **2. Directions** • I can follow an instruction • I can recall words that can be acted out • I can give directions **3. Forwards and backwards** • I can compare forward and backward movements • I can start a sequence from the same place • I can predict the outcome of a sequence involving 'forwards' and 'backwards' commands **4. Four Directions** • I can compare left and right turns • I can experiment with 'turn' and 'move' commands to move a robot • I can predict the outcome of a sequence	**1. Label and match** • I can describe objects using labels • I can match objects to groups • I can identify the label for a group of objects **2. Group and Count** • I can count objects • I can group objects • I can count a group of objects. **3. Describe an object** • I can describe an object • I can describe a property of an object • I can find objects with similar properties. **4. Making different groups** • I can group similar objects • I can group objects in more than one way • I can count how many objects share a property. **5. Comparing groups** • I can choose how to group objects • I can describe groups of objects	**1. Exploring the keyboard** • I can open a word processor • I can recognise keys on a keyboard • I can identify and find keys on a keyboard **2. Adding and removing text** • I can enter text into a computer • I can use letter, number and space keys • I can use backspace to remove text **3. Exploring the toolbar** • I can type capital letters • I can explain what the keys that I have already learnt about do. • I can identify the toolbar and use bold, italic and underline. **4. Making changes to text** • I can select a word by double-clicking • I can select all of the text by clicking and dragging. • I can change the font. **5. Explaining my choices**	**1. Comparing tools** • I can find the commands to move a sprite • I can use commands to move a sprite • I can compare different programming tools **2. Joining blocks** • I can use more than one block by joining them together • I can use a 'Start' block in a program. • I can run my program. **3. Make a change** • I can find blocks that have numbers. • I can change the value. • I can say what happens when I change a value. **4. Adding sprites** • I can show that a project can include more than one sprite • I can delete a sprite • I can add blocks to each of my sprites. **5. Project design** • I can choose appropriate artwork for my project. • I can decide how each sprite will move.

	• I can type my name on a computer • I can save my work to a file 5. **Developing keyboard skills** • I can open my work from a file • I can use the arrow keys to move the cursor • I can delete letters 6. **Using a computer responsibly** • I can identify rules to keep us safe and healthy when we are using technology in and beyond the home • I can give examples of some of these rules • I can discuss how we benefit from these rules	to recreate the work of a artist • I can say which tools were helpful and why. 5. **Painting all by myself digitally** • I can make dots of colour on the page • I can change the colour and brush sizes • I can use dots of colour to create a picture in the style of an artist independently. 6. **Comparing computer art and painting** • I can explain that pictures can be made in lots of different ways • I can spot the differences between painting on a computer and on paper • I can say whether I prefer painting using a computer or using paper	involving up to four commands. 5. **Getting There** • I can explain what my program should do. • I can choose the order of commands in a sequence • I can debug my program. 6. **Routes** • I can identify several possible solutions • I can plan two programs • I can use two different programs to get to the same place.	• I can record how many objects are in a group. 6. **Answering questions** • I can decide how to group objects to answer a question. • I can compare groups of objects. • I can record and share what I have found.	• I can say what tool I have used to change the text. • I can decide if my changes have improved my writing. • I can use 'Undo' to remove changes 6. **Pencil or keyboard?** • I can make changes to text on a computer • I can explain the differences between typing and writing • I can say why I prefer typing or writing.	• I can create an algorithm for each sprite. 6. **Following my design** • I can use sprites that match my design • I can add programming blocks based on my algorithm. • I can test the programs I have created.
	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE
	<u>Health, Well-being and Lifestyle:</u> I can explain rules to keep myself safe when using technology both in and beyond the home. <u>Online Relationships:</u>	<u>Copyright and Ownership</u> I can explain why work I create using technology belongs to me. I can say why it belongs to me (e.g., 'I designed it' or 'I filmed it').	<u>Self-Image and Identity:</u> I can recognize that there may be people online who could make someone feel sad, embarrassed or upset. If something happens that makes me feel sad, worried, uncomfortable or frightened I	<u>Online Relationships:</u> I can explain why it is important to be considerate and kind to people online and to respect their choices. I can explain why things one person finds funny or sad online may not always be	<u>Online Reputation:</u> I can recognise that information can stay online and could be copied. I can describe what information I should not put online without asking a trusted adult first.	<u>Managing Online Information:</u> I can give simple examples of how to find information using digital technologies, e.g., search engines, voice activated searching.

	I can give examples of when I should ask permission to do something online and explain why this is important. I can use the internet with adult support to communicate with people I know (e.g., video call apps or services).	I can save my work under a suitable title or name so that others know it belongs to me (e.g., filename, name on content). I can understand that work created by others does not belong to me even if I save a copy.	can give examples of when and how to speak to an adult I can trust and how they can help.	seen in the same way by others. <u>Online Bullying:</u> I can describe how to behave online in ways that do not upset others and can give examples.	<u>Privacy and Security:</u> I can explain how passwords are used to protect information, accounts and devices. I can recognise more detailed examples of information that is personal to someone (e.g., where someone lives and goes to school, family names). I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.	I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened.
	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary
	technology, computer, mouse, trackpad, keyboard, screen, double-click, typing.	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.	object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.	Scratch Jr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design.
	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge
	EYFS -	EYFS -	EYFS -	EYFS -	EYFS -	EYFS -
	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge
	Y2 – 6 – Computing systems and networks	Y2 – 6 Creating Media	Y2 – 6 - Programming	Y2– 6 – Data and Information	Y2 – 6 – Creating Media	Y2 – 6 - Programming
Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Overview	Overview	Overview	Overview	Overview	Overview
	COMPUTING SYSTEMS AND NETWORKS Information technology around us	CREATING MEDIA Digital photography Learners will learn to recognise that different	PROGRAMMING A Robot algorithms This unit develops learners' understanding of	DATA AND INFORMATION Pictograms Learners will begin to understand what the term	CREATING MEDIA Making music In this unit, learners will be using a computer to	PROGRAMMING B Introduction to quizzes This unit initially recaps on learning from the Year 1

	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. **Online Safety (ProjectEVOLVE)** Health, Well-being and Lifestyle Online Bullying	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. **Online Safety (ProjectEVOLVE)** Managing Online Information	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 **Online Safety (ProjectEVOLVE)** Online Reputation	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. **Online Safety (ProjectEVOLVE)** Self-Image and Identity Privacy and Security	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. **Online Safety (ProjectEVOLVE)** Copyright and Ownership Online Relationships	Scratch Jr unit 'Programming B – Programming animations'. 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 Scratch Jr and realise these designs in Scratch Jr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects. **Online Safety (ProjectEVOLVE)** Online Relationships
	National Curriculum	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**
	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content *Recognise common uses of Information Technology beyond school *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	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content *Recognise common uses of Information Technology beyond school *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	*Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. *Create and debug simple programs. *Use logical reasoning to predict the behaviour of simple programs *Use technology safely and respectfully, keeping personal information	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content *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	*Use technology purposefully to create, organise, store, manipulate, and retrieve digital content	*Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. *Create and debug simple programs. *Use logical reasoning to predict the behaviour of simple programs *Use technology purposefully to create,

	on the internet or other online technologies	on the internet or other online technologies	private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies			organise, store, manipulate, and retrieve digital content
	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum	Teach Computing Curriculum
	1. What is IT? • I can identify examples of computers • I can describe some uses of computers • I can identify that a computer is a part of IT. **2. IT in school** • I can identify examples of IT • I can sort school IT by what it is used for • I can identify that some IT can be used in more than one way **3. IT in the world** • I can find examples of information technology • I can sort IT by where it is found • I can talk about uses of information technology **4. The benefits of IT**	**1. Taking photographs** • I can recognise what devices can be used to take photographs • I can talk about how to take a photograph • I can explain what I did to capture a digital photo. **2. Landscape or portrait** • I can explain the process of taking a good photograph • I can take photos in both landscape and portrait format • I can explain why a photo looks better in portrait or landscape format **3. What makes a good photograph?** • I can identify what is wrong with a photograph • I can discuss how to take a good photograph	**1. Giving instructions** • I can follow instructions given by someone else • I can choose a series of words that can be acted out as a sequence • I can give clear instructions **2. Same but different** • I can use the same instructions to create different algorithms • I can use an algorithm to program a sequence on a floor robot • I can show the difference in outcomes between the two sequences that consist of the same instructions **3. Making predictions** • I can follow a sequence • I can predict the outcome of a sequence • I can compare my prediction to the	**1. Counting and comparing** • I can record data in a tally chart • I can represent a tally count as a total • I can compare totals in a tally chart **2. Enter the data** • I can enter data onto a computer • I can use a computer to view data in a different format • I can use pictograms to answer simple questions about objects **3. Creating pictograms** • I can organise data in a tally chart • I can use a tally chart to create a pictogram • I can explain what the pictogram shows. **4. What is an attribute?**	**1. How music makes us feel** • I can identify simple differences in pieces of music • I can describe music using adjectives • I can say what I do and don't like about a piece of music **2. Rhythms and patterns** • I can create a rhythm pattern • I can play an instrument following a rhythm pattern • I can explain that music is created and played by humans **3. How music can be used** • I can connect images with sounds • I can use a computer to experiment with pitch • I can relate an idea to a piece of music.	**1. Scratch Jr. recap** • I can identify the start of a sequence • I can identify that a program needs to be started • I can show how to run my program **2. Outcomes** • I can predict the outcome of a sequence of commands • I can match two sequences with the same outcome. • I can change the outcome of a sequence of commands. **3. Using a design** • I can work out the actions of a sprite in an algorithm • I can decide which blocks to use to meet the design

	• I can recognise common types of technology. • I can demonstrate how IT devices work together • I can say why we use IT. 5. **Using IT safely** • I can list different uses of information technology • I can talk about different rules for using IT • I can say how rules can help keep me safe. 6 **Using IT in different ways** • I can identify the choices that I make when using IT • I can use IT for different types of activities • I can explain the need to use IT in different ways	• I can improve a photograph by retaking it 4. **Lighting** • I can explore the effect that light has on a photo. • I can experiment with different light sources • I can explain why a picture may be unclear 5. **Effects** • I can recognise that images can be changed. • I can use a tool to achieve a desired effect • I can explain my choices 6. **Is it real?** • I can apply a range of photography skills to capture a photo • I can recognise which photos have been changed • I can identify which photos are real and which have been changed	program outcome 4. **Mats and routes** • I can explain the choices that I made for my mat design • I can identify different routes around my mat • I can test my mat to make sure that it is usable. 5. **Algorithm design** • I can explain what my algorithm should achieve. • I can create an algorithm to meet my goal • I can use my algorithm to create a program 6. **Break it down** • I can test and debug each part of the program • I can plan algorithms for different parts of a task • I can put together the different parts of my program	• I can tally objects using a common attribute • I can create a pictogram to arrange objects by an attribute • I can answer more than/less than and most/least questions about an attribute 5. **Comparing people** • I can choose a suitable attribute to compare people • I can collect the data I need • I can create a pictogram and draw conclusions from it 6. **Presenting information** • I can use a computer program to present information in different ways. • I can share what I have found out using a computer • I can give simple examples of why information should not be shared.	4. **Notes and tempo** • I can identify that music is a series of notes • I can explain how my music can be played in different ways • I can define my musical pattern on a computer. 5. **Creating digital music** • I can create a rhythm which represents an animal I have chosen • I can create my animals rhythm on a computer • I can add a sequence of notes to my rhythm 6. **Reviewing and editing music** • I can review my work • I can explain how I changed my work • I can listen to music and describe how it makes me feel	• I can build the sequence of blocks I need 4. **Changing a design** • I can choose backgrounds for the design • I can choose characters for the design • I can create a program based on the new design 5. **Designing and creating a program** • I can choose the images for my own design • I can create an algorithm. • I can build a sequence of blocks to match my design 6. **Evaluating** • I can compare my project to my design • I can improve my project by adding features • I can debug my program

	ProjectEVOLVE Learning Objectives	ProjectEVOLVE Learning Objectives	ProjectEVOLVE Learning Objectives	ProjectEVOLVE Learning Objectives	ProjectEVOLVE Learning Objectives	ProjectEVOLVE Learning Objectives
	<u>Health, Well-being and Lifestyle</u> I can explain simple guidance for using technology in different environments and settings e.g., accessing online technologies in public places and the home environment. I can say how those rules/guides can help anyone accessing online technologies. <u>Online Bullying</u> I can explain what bullying is, how people may bully others and how bullying can make someone feel. I can explain why anyone who experiences bullying is not to blame. I can talk about how anyone experiencing bullying can get help.	<u>Managing Online Information</u> I can use simple keywords in search engines I can demonstrate how to navigate a simple webpage to get to information I need (e.g., home, forward, back buttons; links, tabs and sections). I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g., Alexa, Google Now, Siri). I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. I can explain why some information I find online may not be real or true.	<u>Online Reputation</u> I can explain how information put online about someone can last for a long time. I can describe how anyone's online information could be seen by others. I know who to talk to if something has been put online without consent or if it is incorrect.	<u>Self-Image and Identity</u> I can explain how other people may look and act differently online and offline. I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened I can give examples of how they might get help. <u>Privacy and Security</u> I can explain how passwords can be used to protect information, accounts and devices. I can explain and give examples of what is meant by 'private' and 'keeping things private'. I can describe and explain some rules for keeping personal information private (e.g., creating and protecting passwords). I can explain how some people may have devices in their homes connected to the internet and give examples (e.g., lights, fridges, toys, televisions).	<u>Copyright and Ownership:</u> I can recognise that content on the internet may belong to other people. I can describe why other people's work belongs to them. <u>Online Relationships</u> I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky (e.g., email, online gaming, a pen-pal in another school/country). I can explain who I should ask before sharing things about myself or others online.	<u>Online Relationships</u> I can describe different way to ask for, give, or deny my permission online and can identify who can help me if I am not sure. I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. I can identify who can help me if something happens online without my consent. I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. I can explain why I should always ask a trusted adult before clicking 'y's', 'agree' or 'accept' online.

	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary
	Information technology (IT), computer, barcode, scanner/scan	device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting,	instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition	more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing	music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit.	sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.
	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge
	EYFS – Y1 – Computing Systems & Networks	EYFS – Y1 – Creating Media	EYFS – Y1 - Programming	EYFS – Y1 – Data & Information	EYFS – Y1 – Creating Media	EYFS – Y1 - Programming
	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge
	Y3 – 6 – Computing systems and networks	Y3 – 6 Creating Media	Y3 – 6 - Programming	Y3– 6 – Data and Information	Y3 – 6 – Creating Media	Y3 – 6 - Programming
Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Overview	Overview	Overview	Overview	Overview	Overview
	COMPUTING SYSTEMS AND NETWORKS Connecting computers 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.	CREATING MEDIA Stop frame animation 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.	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 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	DATA AND INFORMATION Branching databases 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	CREATING MEDIA Desktop publishing 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	PROGRAMMING B Events and actions This unit explores 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

			structured manner. Learners also apply stages of program design through this unit.	branching databases.	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. 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.	change the size and colour of lines. The unit concludes with learners designing and coding their own maze-tracing program.
	Online Safety (ProjectEVOLVE) Online Reputation Health, Well-being and Lifestyle	**Online Safety (ProjectEVOLVE)** Managing Online Information Privacy and Security	**Online Safety (ProjectEVOLVE)** Self-Image and Identity	**Online Safety (ProjectEVOLVE)** Online Relationships	**Online Safety (ProjectEVOLVE)** Managing Online Information Copyright and Ownership	**Online Safety (ProjectEVOLVE)** Online Bullying:
	National Curriculum	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**
	*Work with various forms of input and output * Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing,	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	* Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts *Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	* Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	* Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts *Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design

	evaluating and presenting data and information.		range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.			and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
	Teach Computing	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**
	1 How does a digital device work? • I can explain that digital devices accept inputs • I can explain that digital devices produce outputs • I can follow a process • I can explain what makes a secure password 2 What parts make up a digital device? • I can classify input and output devices • I can describe a simple process • I can design a digital device 3 How do digital devices help us? • I can explain how I use digital devices for different activities • I can recognise similarities between using digital devices	1 Can a picture move? • I can draw a sequence of pictures • I can create an effective flip book—style animation • I can explain how an animation/flip book works 2 Frame by frame • I can predict what an animation will look like • I can explain why little changes are needed for each frame • I can create an effective stop-frame animation 3 What's the story?	1. Introduction to Scratch • I can identify the objects in a Scratch project (sprites, backdrops) • I can explain that objects in Scratch have attributes (linked to) • I can recognise that commands in Scratch are represented as blocks 2. Programming sprites • I can create a program following a design and understand that each sprite is controlled by the commands I choose • I can predict the coding blocks used to move a sprite	1 Yes or no questions • I can investigate questions with yes/no answers • I can make up a yes/no question about a collection of objects • I can create two groups of objects separated by one attribute 2 Making groups • I can select an attribute to separate objects into groups • I can create a group of objects within an existing group • I can arrange objects into a tree structure 3 Creating a branching database • I can select objects to arrange in a branching database • I can group objects using my own yes/no questions • I can test my branching database to	1. Words and pictures • I can explain the difference between text and images • I can recognise that text and images can communicate messages clearly • I can identify the advantages and disadvantages of using text and images • I understand how to use emojis respectfully online 2. Can you edit it? • I can change font style, size, and colours for a given purpose • I can edit text • I can explain that text can be changed to communicate more clearly 3. Great template! • I can explain what 'page orientation' means • I can recognise placeholders and say	1 Moving a sprite • I can explain the relationship between an event and an action • I can choose which keys to use for actions and explain my choices • I can identify a way to improve a program 2 Maze movement • I can choose a character for my project • I can choose a suitable size for a character in a maze • I can program movement 3 Drawing lines • I can use a programming extension • I can consider the real world when making design choices

	and using non-digital tools • I can suggest differences between using digital devices and using non-digital tools 4 How am I connected? • I can recognise different connections • I can explain how messages are passed through multiple connections • I can discuss why we need a network switch 5 How are computers connected? • I can recognise that a computer network is made up of a number of devices • I can demonstrate how information can be passed between devices • I can explain the role of a switch, server, and wireless access point in a network 6 What does our school network look like? • I can identify how devices in a network	• I can break down a story into settings, characters and events • I can describe an animation that is achievable on screen • I can create a storyboard 4 Picture perfect • I can use onion skinning to help me make small changes between frames • I can review a sequence of frames to check my work • I can evaluate the quality of my animation 5 Evaluate and make it great! • I can explain ways to make my animation better • I can evaluate another learner's animation • I can improve my animation based on feedback 6 Lights, camera, action!	• I can match coding blocks to their actions 3. Sequences • I can start a program in different ways • I can create a sequence of connected commands • I can explain that the objects in my project will respond exactly to the code 4. Ordering commands • I can explain what a sequence is • I can combine sound commands • I can order notes into a sequence 5. Looking good • I can build a sequence of commands • I can decide the actions for each sprite in a program • I can make design choices for my artwork 6. Making an instrument	see if it works 4 Structuring a branching database • I can create yes/no questions using given attributes • I can compare two branching database structures • I can explain that questions need to be ordered carefully to split objects into similarly sized groups 5 Planning a branching database • I can independently create questions to use in a branching database • I can create questions that will enable objects to be uniquely identified • I can create a physical version of a branching database 6 Making a dinosaur identifier • I can create a branching database that reflects my plan • I can work with a partner to test my identification tool • I can suggest real-world uses for branching databases	why they are important • I can create a template for a particular purpose 4. Can you add content? • I can choose the best locations for my content • I can paste text and images to create a magazine cover • I can make changes to content after I've added it 5. Lay it out • I can identify different layouts • I can match a layout to a purpose • I can choose a suitable layout for a given purpose 6. Why desktop publishing? • I can identify the uses of desktop publishing in the real world • I can say why desktop publishing might be helpful • I can compare work made on desktop publishing to work created by hand	• I can choose blocks to set up my program 4 Adding features • I can identify additional features (from a given set of blocks) • I can choose suitable keys to turn on additional features • I can build more sequences of commands to make my design work 5 Debugging movement • I can test a program against a given design • I can match a piece of code to an outcome • I can modify a program using a design 6 Making a project • I can make design choices and justify them • I can implement my design • I can evaluate my project

	are connected together • I can identify networked devices around me • I can identify the benefits of computer networks	• I can add other media to my animation • I can explain why I added other media to my animation • I can evaluate my final film	• I can identify and name the objects I will need for a project • I can relate a task description to a design • I can implement my algorithm as code			
	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE
	<u>Online Reputation:</u> I can explain how to search for information about others online I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. I can explain who someone can ask if they are unsure about putting something online. <u>Health, Well-being and Lifestyle</u> I can explain why spending too much time using technology can sometimes have a negative impact on anyone. I can give some examples of both positive and negative activities where it	<u>Managing Online Information</u> I can demonstrate how to use key phrases in search engines to gather accurate information online. I can explain what autocomplete is and how to choose the best suggestion. I can explain how the internet can be used to sell and buy things. <u>Privacy and Security</u> I can describe simple strategies for creating and keeping passwords private. I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult.	<u>Self-Image and Identity</u> I can explain what is meant by the term 'identity'. I can explain how people can represent themselves in different ways online. I can explain ways in which someone might change their identity depending on what they are doing online (e.g., gaming; using an avatar; social media) and why.	<u>Online Relationships:</u> I can describe ways people who have similar likes and interests can get together online. I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with. I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried.	<u>Managing Online Information:</u> I can explain the difference between a 'belief', an 'opinion' and a 'fact' and can give examples of how and where they might be shared online, e.g., in videos, memes, posts, new stories etc. I can explain that not all opinions shared may be accepted as true or fair by others (e.g., monsters under the bed). I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened. <u>Copyright and Ownership</u> I can explain why copying someone else's work from the internet without	<u>Online Bullying:</u> I can describe appropriate ways to behave towards other people online and why this is important. I can give examples of how bullying behaviour could appear online and how someone can get support

	is easy to spend a lot of time engaged. I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g., age restricted gaming or websites)	I can describe how connected devices can collect and share anyone's information with others.		I can explain how someone's feelings can be hurt by what is said or written online. I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline (e.g., sharing images and videos).	permission isn't fair and can explain what problems this might cause.	
	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary
	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets	animation, flip book, stopframe, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code	attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree.	text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits.	motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions
	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge
	EYFS – Y1 & 2– Computing Systems & Networks	EYFS – Y1 & 2– Creating Media	EYFS – Y1 & 2– Programming	EYFS – Y1 & 2– Data & Information	EYFS – Y1 & 2– Creating Media	EYFS – Y1 & 2– Programming
	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge
	Y4 – 6 – Computing systems and networks	Y4– 6 Creating Media	Y4 – 6 - Programming	Y4– 6 – Data and Information	Y4 – 6 – Creating Media	Y4 – 6 - Programming
Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Overview	Overview	Overview	Overview	Overview	Overview
	COMPUTING SYSTEMS AND NETWORKS The internet	CREATING MEDIA Audio editing	PROGRAMMING A Repetition in shapes	DATA AND INFORMATION Data collection and analysis using data loggers	CREATING MEDIA Photo editing	PROGRAMMING B Repetition in games

	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. This unit requires devices with an internet connection. Chrome Music Lab is used in one lesson to demonstrate content which can be produced on the World Wide Web. Online Safety (ProjectEVOLVE) Managing Online Information	Learners will identify the input and output devices required to work with sound digitally. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, learners will evaluate their work and give feedback to their peers. Online Safety (ProjectEVOLVE) Copyright and Ownership Online Bullying:	Learners will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. Online Safety (ProjectEVOLVE) Online Reputation	In this unit, 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 questions. Online Safety (ProjectEVOLVE) Privacy and Security	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. Online Safety (ProjectEVOLVE) Self-Image and Identity	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. Online Safety (ProjectEVOLVE) Health, Well-being and Lifestyle Online Relationships
	National Curriculum	National Curriculum	National Curriculum	National Curriculum	National Curriculum	National Curriculum
	* Understand computer networks, including the internet; how they can provide multiple services,	* Select, use and combine a variety of software (including internet services) on a range of	* Design, write and debug programs that accomplish specific goals, including controlling or simulating	*Use sequence, selection and repetition in various forms; work with various forms of input and output	* Select, use and combine a variety of software (including internet services) on a range of	* Design, write and debug programs that accomplish specific goals, including controlling or simulating

	such as the World Wide Web, and the opportunities they offer for communication and collaboration * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	physical systems; solve problems by decomposing them into smaller parts *Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	physical systems; solve problems by decomposing them into smaller parts *Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
	Teach Computing	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**
	1 Connecting networks ● I can describe the internet as a network of networks ● I can demonstrate how information is shared across the internet	1. Recording sound ● I can identify the input and output devices used to record and play sound ● I can use a computer to record audio	1. Introduction to Scratch ● I can identify the objects in a Scratch project (sprites, backdrops) ● I can explain that objects in Scratch have	1 Answering questions ● I can choose a data set to answer a given question ● I can suggest questions that can be answered using a given data set	1 Changing digital images ● I can improve an image by rotating it ● I can explain why I might crop an image ● I can use photo editing software to crop an image	1 Using loops to create shapes ● I can list an everyday task as a set of instructions including repetition

	• I can discuss why a network needs protecting 2 What is the internet made of? • I can describe networked devices and how they connect • I can explain that the internet is used to provide many services • I can recognise that the World Wide Web contains websites and web pages 3 Sharing information • I can explain the types of media that can be shared on the WWW • I can describe where websites are stored when uploaded to the WWW • I can describe how to access websites on the WWW 4 What is a website? • I can explain what media can be found on websites • I can recognise that I can add content to the WWW • I can explain that internet services can be used to create content online 5 Who owns the web?	• I can explain that the person who records the sound can say who is allowed to use it 2. Editing audio To explain that audio recordings can be edited • I can re-record my voice to improve my recording • I can inspect the soundwave view to know where to trim my recording • I can discuss what sounds can be added to a podcast 3. Planning a podcast • I can explain how sounds can be combined to make a podcast more engaging • I can save my project so the different parts remain editable • I can plan appropriate content for a podcast 4. Creating a podcast • I can record content following my plan • I can review the quality of my recordings • I can improve my voice recordings 5. Combining audio	attributes (linked to) • I can recognise that commands in Scratch are represented as blocks 2. Programming sprites • I can create a program following a design and understand that each sprite is controlled by the commands I choose • I can predict the coding blocks used to move a sprite • I can match coding blocks to their actions 3. Sequences • I can start a program in different ways • I can create a sequence of connected commands • I can explain that the objects in my project will respond exactly to the code 4. Ordering commands • I can explain what a sequence is • I can combine sound commands • I can order notes into a sequence	• I can identify data that can be gathered over time 2 Data collection • I can explain what data can be collected using sensors • I can use data from a sensor to answer a given question • I can identify that data from sensors can be recorded 3 Logging • I can recognise that a data logger collects data at given points • I can identify the intervals used to collect data • I can talk about the data that I have captured 4 Analysing data • I can view data at different levels of detail • I can sort data to find information • I can explain that there are different ways to view data 5 Data for answers • I can propose a question that can be answered using logged data	• I understand that editing images can be unethical 2 Recolouring • I can explain that different colour effects make you think and feel different things • I can experiment with different colour effects • I can explain why I chose certain colour effects 3 Cloning • I can add to the composition of an image by cloning • I can identify how a photo edit can be improved • I can remove parts of an image using cloning 4 Combining • I can experiment with tools to select and copy part of an image • I can use a range of tools to copy between images • I can explain why photos might be edited 5 Creating • I can describe the image I want to create • I can choose suitable images for my project • I can create a project	• I can predict the outcome of a snippet of code • I can modify a snippet of code to create a given outcome 2 Different loops • I can modify loops to produce a given outcome • I can choose when to use a count-controlled and an infinite loop • I can recognise that some programming languages enable more than one process to be run at once 3 Animate your name • I can choose which action will be repeated for each object • I can explain what the outcome of the repeated action should be • I can evaluate the effectiveness of the repeated sequences used in my program 4 Modifying a game • I can identify which parts of a loop can be changed

	• I can explain that websites and their content are created by people • I can suggest who owns the content on websites • I can explain that there are rules to protect content 6 Can I believe what I read? • I can explain that not everything on the World Wide Web is true • I can explain why some information I find online may not be honest, accurate, or legal • I can explain why I need to think carefully before I share or reshare content	• I can open my project to continue working on it • I can arrange multiple sounds to create the effect I want • I can explain the difference between saving a project and exporting an audio file 6. Evaluating podcasts • I can listen to an audio recording to identify its strengths • I can suggest improvements to an audio recording • I can choose appropriate edits to improve my podcast	5. Looking good • I can build a sequence of commands • I can decide the actions for each sprite in a program • I can make design choices for my artwork 6. Making an instrument • I can identify and name the objects I will need for a project • I can relate a task description to a design • I can implement my algorithm as code	• I can plan how to collect data using a data logger • I can use a data logger to collect data 6 Answering my question • I can interpret data that has been collected using a data logger • I can draw conclusions from the data that I have collected • I can explain the benefits of using a data logger	that is a combination of other images 6 Evaluating • I can review images against a given criteria • I can use feedback to guide making changes • I can combine text and my image to complete the project	• I can explain the effect of my changes • I can re-use existing code snippets on new sprites 5 Designing a game • I can evaluate the use of repetition in a project • I can select key parts of a given project to use in my own design • I can develop my own design explaining what my project will do 6 Creating your games • I can refine the algorithm in my design • I can build a program that follows my design • I can evaluate the steps I followed when building my project
	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE
	<u>Managing Online Information</u> I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others.	<u>Copyright and Ownership</u> When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. <u>Online Bullying:</u> I can recognise when someone is upset, hurt or angry online.	<u>Online Reputation</u> I can describe how to find out information about others by searching online. I can explain ways that some of the information about anyone online could have been created, copied or shared by others	<u>Privacy and Security</u> I can describe strategies for keeping personal information private, depending on context. I can explain that internet use is never fully private and is monitored, e.g., adult supervision I can describe how some online services may seek	<u>Self-Image and Identity:</u> I can explain how my online identity can be different to my offline identity. I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them.	<u>Health, Well-being and Lifestyle</u> I can explain how using technology can be a distraction from other things, in both a positive and negative way. I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can

	I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (e.g., social media, image sites, video sites). I can describe some of the methods used to encourage people to buy things online (e.g., advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. I can explain that technology can be designed to act like or impersonate living things (e.g., bots) and describe what the benefits and the risks might be. I can explain what is meant by fake news e.g., why some people will create stories or alter photographs and put them online to pretend something is true when it isn't	I can describe ways people can be bullied through a range of media (e.g., image, video, text, chat). I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation)		consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. I know what the digital age of consent is and the impact this has on online services asking for consent	I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this <u>Copyright and Ownership</u> I can give some simple examples of content which I must not use without permission from the owner, e.g., videos, music, images.	suggest strategies to help with limiting this time. <u>Online Relationships</u> I can describe strategies for safe and fun experiences in a range of online social environments (e.g., livestreaming, gaming platforms). I can give examples of how to be respectful to others online and describe how to recognize healthy and unhealthy online behaviours.
	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary

	internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts	audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.	Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure.	data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.	image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font.	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate
	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge
	EYFS – Y1 - 3– Computing Systems & Networks	EYFS – Y1 – 3 – Creating Media	EYFS – Y1 – 3 – Programming	EYFS – Y1 – 3 – Data & Information	EYFS – Y1 – 3 – Creating Media	EYFS – Y1 – 3 – Programming
	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge
	Y5 – 6 – Computing systems and networks	Y5– 6 Creating Media	Y5 – 6 - Programming	Y5– 6 – Data and Information	Y5 – 6 – Creating Media	Y5 – 6 - Programming
Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Overview	Overview	Overview	Overview	Overview	Overview
	COMPUTING SYSTEMS AND NETWORKS Systems & Searching Sharing information 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	CREATING MEDIA Video editing 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	PROGRAMMING A Selection in physical computing In this unit, 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.	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. Online Safety (ProjectEVOLVE) Online Bullying	CREATING MEDIA Vector drawing In this unit, 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.	PROGRAMMING B Selection in quizzes 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

	engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. **Online Safety (ProjectEVOLVE)** Copyright and Ownership Online Relationships	**Online Safety (ProjectEVOLVE)** Managing Online Information Self-Image and Identity	Learners will make use of their knowledge of repetition and conditions when introduced to the concept of selection (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. **Online Safety (ProjectEVOLVE)** Managing Online Information		**Online Safety (ProjectEVOLVE)** Copyright and Ownership Health, Well-being and Lifestyle	selection to control the outcomes based on the answers given. They use this knowledge to design a 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. **Online Safety (ProjectEVOLVE)** Online Reputation Health, Well-being and Lifestyle
	National Curriculum	National Curriculum	National Curriculum	National Curriculum	National Curriculum	National Curriculum
	* Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish	* Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	* Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Select, use and combine a variety of software	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish	* Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	given goals, including collecting, analysing, evaluating and presenting data and information. * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	*Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	(including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	given goals, including collecting, analysing, evaluating and presenting data and information.	*Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
	Teach Computing	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**
	1 Systems • I can explain that systems are built using a number of parts • I can describe the input, process, and output of a digital system • I can explain that computer systems communicate with other devices 2 Computer systems and us	1 What is video? • I can explain that video is a visual media format • I can identify features of videos • I can compare features in different videos • I know what to do if I see any content online that makes me feel uncomfortable 2 Filming techniques	1 Connecting Crumbles • I can create a simple circuit and connect it to a microcontroller • I can program a microcontroller to make an LED switch on • I can explain what an infinite loop does 2 Combining output components • I can connect more than one output	1. Creating a paper-based database • I can create a database using cards • I can explain how information can be recorded • I can order, sort, and group my data cards 2. Computer databases • I can explain what a field and a record is in a database • I can navigate a flat-	1 The drawing tools • I can recognise that vector drawings are made using shapes • I can experiment with the shape and line tools • I can discuss how vector drawings are different from paper-based drawings 2 Creating images	1. Exploring conditions • I can recall how conditions are used in selection • I can identify conditions in a program • I can modify a condition in a program 2.Selecting outcomes • I can use selection in an infinite loop to check a condition

	• I can identify tasks that are managed by computer systems • I can identify the human elements of a computer system • I can explain the benefits of a given computer system • I can explain how to keep my personal information safe online 3 Searching the web • I can make use of a web search to find specific information • I can refine my web search • I can compare results from different search engines • I can explain why I should search trustworthy websites and not share any personal information online. 4 Selecting search results • I can explain why we need tools to find things online	• I can identify and find features on a digital video recording device • I can experiment with different camera angles • I can make use of a microphone 3 Using a storyboard • I can suggest filming techniques for a given purpose • I can capture video using a range of filming techniques • I can review how effective my video is 4 Planning a video • I can outline the scenes of my video • I can decide which filming techniques I will use • I can create and save video content 5 Importing and editing video • I can store, retrieve, and export my recording to a computer • I can explain how to improve a video by reshooting and editing • I can select the correct	component to a microcontroller • I can use a count-controlled loop to control outputs • I can design sequences that use count-controlled loops 3 Controlling with conditions • I can explain that a condition is either true or false • I can design a conditional loop • I can program a microcontroller to respond to an input 4 Starting with selection • I can explain that a condition being met can start an action • I can identify a condition and an action in my project • I can use selection (an 'if…then…' statement) to direct the flow of a program 5 Drawing designs • I can identify a real-world example of a	file database to compare different views of information • I can choose which field to sort data by to answer a given question 3. Using a database • I can explain that data can be grouped using chosen values • I can group information using a database • I can combine grouping and sorting to answer specific questions 4. Using search tools • I can choose which field and value are required to answer a given question • I can outline how 'AND' and 'OR' can be used to refine data selection • I can choose multiple criteria to answer a given question 5. Comparing data visually • I can select an appropriate chart to visually compare data • I can refine a chart by selecting a particular filter • I can explain the benefits of using a	• I can identify the shapes used to make a vector drawing • I can explain that each element added to a vector drawing is an object • I can move, resize, and rotate objects I have duplicated 3 Making effective drawings • I can use the zoom tool to help me add detail to my drawings • I can explain how alignment grids and resize handles can be used to improve consistency • I can modify objects to create a new image 4 Layers and objects • I can identify that each added object creates a new layer in the drawing • I can change the order of layers in a vector drawing • I can use layering to create an image 5 Manipulating objects	• I can identify the condition and outcomes in an 'if… then… else…' statement • I can create a program that uses selection to produce different outcomes 3.Asking questions • I can explain that program flow can branch according to a condition • I can design the flow of a program that contains 'if… then… else…' • I can show that a condition can direct program flow in one of two ways 4.Designing a quiz • I can outline a given task • I can use a design format to outline my project • I can identify the outcome of user input in an algorithm 5.Testing a quiz • I can implement my algorithm to create the first section of my program • I can test my program

	• I can recognise the role of web crawlers in creating an index • I can relate a search term to the search engine's index 5 How search results are ranked • I can order a list by rank • I can explain that a search engine follows rules to rank results • I can give examples of criteria used by search engines to rank results 6 How are searches influenced? • I can describe some of the ways that search results can be influenced • I can recognise some of the limitations of search engines • I can explain how search engines make money	tools to make edits to my video 6 Video evaluation • I can make edits to my video and improve the final outcome • I can recognise that my choices when making a video will impact the quality of the final outcome • I can evaluate my video and share my opinions	condition starting an action • I can describe what my project will do • I can create a detailed drawing of my project 6 Writing and testing algorithms • can write an algorithm that describes what my model will do • I can use selection to produce an intended outcome • I can test and debug my project	computer to create charts 6. Databases in real life • I can ask questions that will need more than one field to answer • I can refine a search in a real-world context • I can present my findings to a group	• I can copy part of a drawing by duplicating several objects • I can recognise when I need to group and ungroup objects • I can reuse a group of objects to further develop my vector drawing 6 Create a vector drawing • I can create a vector drawing for a specific purpose • I can reflect on the skills I have used and why I have used them • I can compare vector drawings to freehand paint drawings	• I can share my program with others 6.Evaluating a quiz • I can identify ways the program could be improved • I can identify the setup code I need in my program • I can extend my program further
	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE
	<u>Copyright and Ownership:</u> I can assess and justify when it is acceptable to use the work of others.	<u>Managing Online Information</u> I can explain the benefits and limitations of using different types of search	<u>Managing Online Information</u> I can identify ways the internet can draw us to information for different	<u>Online Bullying</u> I can recognise online bullying can be different to bullying in the physical	<u>Copyright and Ownership</u> I can give examples of content that is permitted to be reused and know	<u>Online Reputation</u> I can search for information about an individual online and

	<u>Online Relationships:</u> I can give examples of technology-specific forms of communication (e.g., emojis, memes and GIFS). I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognize that this is not my / our fault. I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions (e.g., gaming communities or social media groups). I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. I can demonstrate how to support others (including those who are having difficulties online).	technologies e.g., voice-activation search engine. I can explain how some technology can limit the information I am presented with. I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical'. I can evaluate digital content and can explain how to make choices about what is trustworthy e.g., differentiating between adverts and search results. I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence. <u>Self-Image and Identity</u> I can explain how identity online can be copied, modified or altered. I can demonstrate how to make responsible choices about having an online identity, depending on context	agendas, e.g., website notifications, pop-ups, targeted ads. I can describe ways of identifying when online content has been commercially sponsored or boosted (e.g., by commercial companies or by vloggers, content creators, influencers). I can explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why accepting 'stereotypes' may influence how people think about others. I can describe how fake news may affect someone's emotions and behaviour and explain why this may be harmful. I can explain what is meant by a 'hoax'. I can explain why someone would need to think carefully before they share.	world and can describe some of those differences. I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. I can identify a range of ways to report concerns and access support both in school and at home about online bullying. I can explain how to block abusive users. I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g., Childline or The Mix).	how this content can be found online. <u>Privacy and Security</u> I can explain what a strong password is and demonstrate how to create one. I can explain how many free apps or services may read and share private information (e.g., friends, contacts, likes, images, videos, voice, messages, geolocation) with others. I can explain what app permissions are and can give some examples.	summarise the information found. I can describe ways that information about anyone online can be used by others to make judgements about an individual and why these may be incorrect. <u>Health, Well-being and Lifestyle</u> I can describe ways technology can affect health and wellbeing both positively (e.g., mindfulness apps) and negatively. I can describe some strategies, tips or advice to promote health and well-being with regards to technology. I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. I can explain how and why some apps and games may request or take payment for additional content (e.g., in-app purchases, loot boxes) and explain the importance of seeking

						permission from a trusted adult before purchasing.
	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary
	system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking.	video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.	microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, Input, output, selection, action, debug, circuit, power, cell, buzzer	database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.	vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator
	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge
	EYFS – Y1 – 4 – Computing Systems & Networks	EYFS – Y1 – 4 – Creating Media	EYFS – Y1 – 4 – Programming	EYFS – Y1 – 4 Data & Information	EYFS – Y1 – 4 – Creating Media	EYFS – Y1 – 4 – Programming
	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge
	Y6 – Computing systems and networks	Y6 Creating Media	Y6 - Programming	Y6 – Data and Information	Y6 – Creating Media	Y6 - Programming
Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Overview	Overview	Overview	Overview	Overview	Overview
	COMPUTING SYSTEMS AND NETWORKS Communication In this unit 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	CREATING MEDIA Web page creation 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.	PROGRAMMING A Variables in games This unit explores 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	DATA AND INFORMATION Spreadsheets This unit introduces the learners to spreadsheets. They 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	CREATING MEDIA 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. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, learners	PROGRAMMING B Sensing 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

	different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet. **Online Safety (ProjectEVOLVE)** Managing Online Information Online Bullying:	**Online Safety (ProjectEVOLVE)** Managing Online Information Copyright and Ownership	variables in an 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. **Online Safety (ProjectEVOLVE)** Health, Well-being and Lifestyle Online Reputation	will be taught how to apply 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. **Online Safety (ProjectEVOLVE)** Managing Online Information Self-Image and Identity	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. **Online Safety (ProjectEVOLVE)** Privacy and Security	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, 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. **Online Safety (ProjectEVOLVE)** Online Relationships
	National Curriculum	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**	**National Curriculum**
	* Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts * Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration * Select, use and combine a variety of software (including internet	* Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	* Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts *Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services)	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	* Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	* Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts *Use sequence, selection and repetition in various forms; work with various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software

	services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.		on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact			(including internet services) on a range of digital devices to design and create a range of programs, system and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
	Teach Computing	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**	**Teach Computing**
	1 Internet addresses • I can recognise that data is transferred using agreed methods • I can explain that internet devices have addresses • I can describe how computers use addresses to access websites 2 Data packets • I can identify and explain the main parts of a data packet	1 What makes a good website? • I can explore a website • I can discuss the different types of media used on websites • I know that websites are written in HTML 2 How would you lay out your web page? • I can recognise the common features of a web page • I can suggest media to include on my page • I can draw a web page layout that suits my purpose	1 Introducing variables • I can identify examples of information that is variable • I can explain that the way a variable changes can be defined • I can identify that variables can hold numbers or letters 2 Variables in programming • I can identify a program variable as a placeholder in memory for a single value • I can explain that a variable has a name and a value	1 Collecting data • I can collect data • I can suggest how to structure my data • I can enter data into a spreadsheet 2 Formatting a spreadsheet • I can explain what an item of data is • I can choose an appropriate format for a cell • I can apply an appropriate format to a cell 3 What's the formula?	1 Introduction to 3D modelling • I can add 3D shapes to a project • I can view 3D shapes from different perspectives • I can move 3D shapes relative to one another 2 Modifying 3D objects • I can resize an object in three dimensions • I can lift/lower 3D objects • I can recolour a 3D object 3 Make your own name	1 The micro:bit • I can apply my knowledge of programming to a new environment • I can test my program on an emulator • I can transfer my program to a controllable device 2 Go with the flow • I can identify examples of conditions in the real world • I can use a variable in an if, then, else statement to select the flow of a program

	• I can explain that data is transferred over networks in packets • I can explain that all data transferred over the internet is in packets 3 Working together • I can recognise how to access shared files stored online • I can send information over the internet in different ways • I can explain that the internet allows different media to be shared 4 Shared working • I can identify different ways of working together online • I can recognise that working together on the internet can be public or private • I can explain how the internet enables effective collaboration 5 How we communicate	3 Copyright or copyWRONG? • I can say why I should use copyright-free images • I can find copyright-free images • I can describe what is meant by the term 'fair use' • I know how to use technology respectfully and responsibly when online 4 How does it look? • I can add content to my own web page • I can preview what my web page looks like • I can evaluate what my web page looks like on different devices and suggest/make edits. 5 Follow the breadcrumbs • I can explain what a navigation path is • I can describe why navigation paths are useful • I can make multiple web pages and link them using hyperlinks 6 Think before you link! • I can explain the implication of linking to content owned by others	• I can recognise that the value of a variable can be changed 3 Improving a game • I can decide where in a program to change a variable • I can make use of an event in a program to set a variable • I can recognise that the value of a variable can be used by a program 4 Designing a game • I can choose the artwork for my project • I can create algorithms for my project • I can explain my design choices 5 Design to code • I can create the artwork for my project • I can choose a name that identifies the role of a variable • I can test the code that I have written 6 Improving and sharing • I can identify ways that my game could be improved	• I can explain which data types can be used in calculations • I can construct a formula in a spreadsheet • I can identify that changing inputs changes outputs 4 Calculate and duplicate • I can calculate data using different operations • I can create a formula which includes a range of cells • I can apply a formula to multiple cells by duplicating it 5 Event planning • I can use a spreadsheet to answer questions • I can explain why data should be organised • I can apply a formula to calculate the data I need to answer questions 6 Presenting data • I can produce a chart • I can use a chart to show the answer to a question	badge • I can rotate objects in three dimensions • I can duplicate 3D objects • I can group 3D objects 4 Making a desk tidy • I can accurately size 3D objects • I can show that placeholders can create holes in 3D objects • I can combine a number of 3D objects 5 Planning a 3D model • I can analyse a 3D model • I can choose objects to use in a 3D model • I can combine objects in a design 6 Make your own 3D model • I can construct a 3D model based on a design • I can explain how my 3D model could be improved • I can modify my 3D model to improve it	• I can determine the flow of a program using selection 3 Sensing inputs • I can use a condition to change a variable • I can experiment with different physical inputs • I can explain that checking a variable doesn't change its value 4 Finding your way • I can use an operand (e.g. <>=) in an if, then statement • I can explain the importance of the order of conditions in else, if statements • I can modify a program to achieve a different outcome 5 Designing a step counter • I can decide what variables to include in a project • I can design the algorithm for my project • I can design the program flow for my project

	• I can explain the different ways in which people communicate • I can identify that there are a variety of ways to communicate over the internet • I can choose methods of communication to suit particular purposes 6 Communicating responsibly • I can compare different methods of communicating on the internet • I can decide when I should and should not share information online • I can explain that communication on the internet may not be private • I can explain how to report inappropriate content online	• I can create hyperlinks to link to other people's work • I can evaluate the user experience of a website	• I can use variables to extend my game • I can share my game with others	• I can suggest when to use a table or chart		6 Making a step counter • I can create a program based on my design • I can test my program against my design • I can use a range of approaches to find and fix bugs
	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE	ProjectEVOLVE
	<u>Managing Online Information</u> I can explain how search engines work and how	<u>Managing Online Information</u> I can define the terms 'influence', 'manipulation' and 'persuasion' and	<u>Health, Well-being and Lifestyle</u> I can describe common systems that regulate agerelated content (e.g.,	<u>Managing Online Information</u> I can describe the difference between online	<u>Privacy and Security</u> I can describe effective ways people can manage passwords (e.g., storing	<u>Online Relationships</u> I can explain how sharing something online may have an impact either positively or negatively.

	results are selected and ranked. I can explain how to use search technologies effectively. I can describe how some online information can be opinion and can offer examples I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. <u>Online Bullying</u> I can describe how to capture bullying content as evidence (e.g., screengrab, URL, profile) to share with others who can help me. I can explain how someone would report online bullying in different contexts.	explain how someone might encounter these online (e.g., advertising and 'ad targeting' and targeting for fake news). I understand the concept of persuasive design and how it can be used to influence peoples' choices I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this. <u>Copyright and Ownership</u> I can demonstrate the use of search tools to find and access online content which can be reused by others. I can demonstrate how to make references to and acknowledge sources I have used from the internet.	PEGI, BBFC, parental warnings) and describe their purpose. I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). I can assess and action different strategies to limit the impact of technology on health (e.g., night-shift mode, regular breaks, correct posture, sleep, diet and exercise). <u>Online Reputation</u> I can explain the ways in which anyone can develop a positive online reputation. I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including de	misinformation and dis-information. I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g., the sharing of misinformation or disinformation). I can identify, flag and report inappropriate content. <u>Self-Image and Identity</u> I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why It is important to challenge and reject inappropriate representations online. I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened I know and can give examples of how to get help, both on and offline. I can explain the importance of asking until I get the help needed.	them securely or saving them in browser). I can explain what to do if a password is shared, lost or stolen. I can describe how and why people should keep their software and apps up to date, e.g., auto updates. I can describe simple ways to increase privacy on apps and services that provide privacy settings. I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g., scams, phishing). I know that online services have terms and conditions that govern their use.	I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. I can describe how things shared privately online can have unintended consequences for others (e.g., screengrabs). I can explain that taking or sharing inappropriate images of someone (e.g., embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this.

	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary
	communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, oneway, two-way, one-to-one, one-to-many	website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.	variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare	data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools.	TinkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify.	Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug
	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge	Prior Knowledge
	EYFS – Y1 - 5– Computing Systems & Networks	EYFS – Y1 - 5– Creating Media	EYFS – Y1 - 5– Programming	EYFS – Y1 - 5– Data & Information	EYFS – Y1 - 5– Creating Media	EYFS – Y1 - 5– Programming
	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge	Future Knowledge
	KS3 – Networks	KS3 – Digital Media	KS3 - Programming	KS3 – Data & Spreadsheets	KS3 - Programming	KS3 – Using Media