Year 1	Computing		
	Autumn topic: Technology around us	Spring Topic: Digital Painting	Summer topic: Moving a robot
National curriculum statements	- 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 Further national curriculum links **Art and design**	- 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
Retrieval (to support new learning)	In YR the children will look at what technology is	The children will build on their knowledge of using tablets to create designs, They should be familiar with how to turn on devices, usernames and passwords	Children will use what they know about giving and following instructions and what they learned when exploring Beebots in YR
Knowledge statements	1. To know that technology is something that helps us and know some examples of technology 2. To know and name the main parts of a computer 3. To know how to switch on and log into a computer 4. To know how to use a mouse/trackpad and keyboard to write my name and save a file 5. To know basic rules for using technology responsibly	1. To know what different freehand tools do 2. To know which tools and colours would be best when painting a digital picture and explain why I chose them 3. To know that different paint tools do different jobs 4. To know how to use a computer on my own to paint a picture 5. To know how a painting on paper and on a computer is similar and different	1. To know what different commands will do 2. To know how to combine four direction commands to make sequences (forwards, backwards and turn) 3. To know how to plan a simple program and explain what my program should do 4. To know how to debug my program if it does not work 5. To know that there can be more than one solution to a problem
Vocabulary	Technology Computer Mouse/ trackpad Keyboard Type Save	Tool Shape Line Brush	Command Instruction Program Order Debug
Cultural capital and local resources		A range of different art	

Year 2	Computing		
	Autumn topic: IT around us	Spring Topic: Digital Photography	Summer topic: Programming (Y1B)
National curriculum statements	- 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 - 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 Further national curriculum links **Art and design**	- 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
Retrieval (to support new learning)	From Y1 children should have an understanding of what technology is and where it is used in a school context. They should also be familiar with the technology available in school.	Children may have experience of taking digital photos from home	Children will have knowledge of programming a floor robot in Y1
Knowledge statements	1. To know the uses and features of information technology 2. To know what information technology is in the home and its purpose 3. To know how information technology benefits us i.e. in a shop 4. To know different uses of IT and how it helps people 5. To know how to use information technology safely and that choices are made when using information technology	1. To know how to use a digital device to take a photograph 2. To know which choices are best when taking a photograph i.e. landscape or portrait 3. To know what makes a good photograph i.e. in focus 4. To know how photographs can be improved i.e. light 5. To know that tools can be used to change an image and know when this has been done	1. To know which command to choose for a given purpose 2. To know how to join a series of commands together 3. To know that changing a value will have different effects on the command 4. To know that each sprite has its own instruction and create an algorithm for each sprite 5. To know how to test the programs I have created
Vocabulary	Purpose Benefits Connected	Focus Landscape Portrait	Block Sprite Algorithm
Cultural capital and local resources	Visit to shopping city to identify uses of IT		

Year 3	Computing		
	Autumn topic: Connecting computers	Spring Topic: Animation	Summer topic: Sequence in Music
National curriculum statements	• use sequence, selection, and repetition in programs; work with variables and 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, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Further national curriculum links **Maths and Art**	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Further national curriculum links **English and History**	• 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 programs; work with variables and 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, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
Retrieval (to support new learning)	Children will know what different forms of IT are from KS1	Builds on knowledge from KS1 of using devices to create media i.e. painting	KS1 experience of programming using scratch and floor robots
Knowledge statements	1. To know how digital devices function using inputs and outputs 2. To know which are input and output devices and know what a simple process is 3. To know how digital devices can change the way that we work 4. To know how a computer network can be used to share information using different connections to pass messages 5. To know how digital devices can be connected and know what the physical components of a network are	1. To know that animation is a sequence of drawings or photographs and that animated movement with a sequence of images 2. To know how to plan an animation that is achievable onscreen. 3. To know that you need to work consistently and carefully 4. To know how to use onion skinning and snippets of frames to review and improve an animation 5. To know whether adding other media to an animation improves it /impacts on it	1. To know how to explore a new programming environment 2. To know that commands have an outcome 3. To know that a program has a start and this can be done in different ways 4. To know that a sequence of commands can have an order and that this order will change the outcome 5. To know how to change the appearance of my project
Vocabulary	Input Processes Output Components – wire / wifi Network Data	Stop-frame Onion skinning Sequence of frames	Test Motion Sounds Combine
Cultural capital and local resources			

Year 4	Computing		
	Autumn topic: The internet	Spring Topic: Editing audio	Summer topic: Repetition in games
National curriculum statements	- 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 - 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, systems, 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, systems, 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 Further national curriculum links **Science, English, Music**	- 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 programs; work with variables and 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, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
Retrieval (to support new learning)	Children know about networks and connecting different devices from Year 3	Children will have previous knowledge of using technology to produce media.	The children will build on their knowledge of using scratch from Y3.
Knowledge statements	1. To know how networks physically connect to other networks 2. To know that networked devices make up the internet and how they connect to each other 3. To know how websites can be shared via the World Wide Web (WWW) 4. To know that content can be added and accessed on the World Wide Web (WWW) 5. To know that the content of the WWW is created by people and is not always reliable	1. To know that sound can be digitally recorded and on which devices 2. To know how to use a digital device to record sound 3. To know how to create and store a digital recording as a file 4. To know that audio can be changed through editing and that different types of audio can be combined and played together 5. To know that digital recordings need to be exported to share them and suggest improvements to a digital recording	1. To know how to use count-controlled loops in a different programming environment 2. To know that in programming there are infinite loops and count-controlled loops and know when is best to use them 3. To know how to develop a design that includes two or more loops which run at the same time 4. To know how to modify an infinite loop in a given program identifying which parts can be changed 5. To know how to and create a project that includes repetition
Vocabulary	World wide web Fake news / Deep fake Website / web pages Information Copyright	Recording Audio Podcast Editing	Repetition Count controlled loops Infinite loops Reuse Modify
Cultural capital and local resources			

Year 5	Computing		
	Autumn topic: Sharing information	Spring Topic: Video editing	Summer topic: Selection in quizzes
National curriculum statements	- 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 programs; work with variables and 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, systems 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, systems, 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 technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour	- 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 programs; work with variables and 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
Retrieval (to support new learning)	Children will build on the knowledge gained in Y3 and 4 about computer systems	Children will use the knowledge from Y3 animation and Y4 recording audio to make their videos.	Children will have prior experience of programming using Scratch, understand the concepts of 'sequence', 'repetition' and 'selection'
Knowledge statements	1. To know that computers can be connected together to form systems and the role of computer systems in our lives 2. To know how information is transferred over the internet 3. To know that sharing information online lets people in different places work together by sending information and sharing media. 4. To know how to contribute to a shared project online 5. To know there are different ways of working together online and these can be private or public	1. To know what makes a video effective and describe the different features 2. To know how to capture video using a range of techniques 3. To know how to create a storyboard to outline the scenes of my video 4. To know that video can be improved through reshooting and editing 5. To know how to improve my video by considering the impact of the choices made when making and sharing a video	1. To know that selection is used in computer programs and how conditions are used in selection 2. To know that a conditional statement connects a condition to an outcome 3. To know how selection directs the flow of a program 4. To know how to design and create a program which uses selection 5. To know how to test, evaluate and extend my program
Vocabulary	Systems Connections Transfer Collaboration	Editing Combine Filming techniques Camera angles	Selection Conditions Program flow If… then… else structure
Cultural capital and local resources			

Year 6	Computing		
	Autumn topic: Communication	Spring Topic: Web page design	Summer topic: Variables in games
National curriculum statements	• 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 • 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, systems 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, systems, 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. Further national curriculum links **English links**	• 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 programs; work with variables and 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, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
Retrieval (to support new learning)	This builds on the KS2 units based around computing systems and collaborative online working.	Children will use their previous knowledge of creating and editing media plus their knowledge of the world wide web	Children will build on their knowledge of scratch and programming constructs of sequence, repetition, and selection
Knowledge statements	1. To know how to use a search engine refining it by using keywords 2. To know how search engines select results 3. To know that search results are ranked and suggest some of the criteria that a search engine checks to decide on the order of results 4. To know why the order of results is important, and to whom 5. To know how we communicate using technology and how to evaluate different methods of online communication	1. To know how to review an existing website and consider its structure 2. To know that websites are written in HTML and how to plan the features of a web page 3. To know about the ownership and use of images (copyright) 4. To know why there is a need to preview pages and evaluate what a web page looks like on different devices and suggest/make edits. 5. To know why navigation paths are useful and know the implications of linking to content owned by other people.	1. To know that a 'variable' as something that is changeable and identify examples 2. To know why a variable is used in a program 3. To know how to improve a game by using variables 4. To know how to design and create a project that builds on a given example 5. To know how to test the code I have written and evaluate my project identifying ways that my game could be improved
Vocabulary	Information Security Search engine / searches Communication Privacy	Content HTML Navigation path Hyperlink	Variables Placeholder Constraints
Cultural capital and local resources			

Year R	Computing		
	Autumn topic: What is Technology?	Spring Topic: iPads	Summer topic: Beebots
EYFS framework statements	The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas Personal, Social and Emotional Development • Show resilience and perseverance in the face of a challenge. Physical Development • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'. Expressive Arts and Design • Explore, use and refine a variety of artistic effects to express their ideas and feelings. ELGs Personal, Social and Emotional Development - Managing Self • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly. Expressive Arts and Design – Creating with Materials • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.		
Retrieval (to support new learning)	Children will use their knowledge of the technology in their homes	Children will have experienced a range of tablets/ phones at homes	Children may have experience of programmable toys, they will build on their investigation and enquiry skills
Knowledge statements	1. To know 3 different types of common technology 2. To know that technology is the use of knowledge to invent new devices or tools 3. To know how technology can make our lives better	1. To know the basic skills needed to use phones and tablets (swipe, pinch, tap) 2. To know how to use different apps to complete a range of activities 3. To know that tablets can be used to do a variety of tasks i.e. watch, take photographs/video, play games, learn, record sound	1. To know how to make the Beebot move forwards 2. To know how to make the Beebot turn 3. To know that some toys can be programmed to work
Vocabulary	Device Tablet Phone Screen	Swipe Pinch Tap App	Robot Program Direction Map
Cultural capital and local resources			