





Computing Curriculum



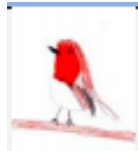

Cycle 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
 <p>Wrens</p>	<p><u>Technology- no longer part of the EYFS but still linked activities through our provision</u></p> <p>Ongoing -Interacting with computer keyboard skills & mouse skills Remote control toys, microphones, talking tins, story CDs, Beebots Old phones, cameras, radios, remote controls, laptops during active learning and in the home corner.</p>					
 <p>Kites Kestrels</p>	<p>Technology around us Knowledge / key concepts:</p> <ul style="list-style-type: none"> Recognise common uses of information technology beyond school Use technology purposefully to create, organise, store, manipulate and retrieve digital content Develop typing, mouse and functional computer skills E-Safety - Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies 	<p>Data and Information Knowledge / key concepts:</p> <ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content Use technology safely and respectfully Understand what 'data' is and how it can be labelled, counted and grouped Record and compare groups of data Answer questions about data and share what they have found E-Safety - Recognise that not all information online can be trusted. Identify reliable and unreliable information 	<p>Programming – Moving a Robot Knowledge / key concepts:</p> <ul style="list-style-type: none"> Understand what algorithms are; how they are implemented as programs on digital devices Understand that programs execute by following precise and instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs Create a sequence of commands to move a robot to a specific place Find more than one solution to a problem E-Safety - Create E-Safety booklets 	<p>Programming - Animation Knowledge / key concepts:</p> <ul style="list-style-type: none"> Understand what algorithms are and how they are implemented as programs on digital devices Understand that programs execute by following precise and unambiguous instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs Design an algorithm to create an animation with 'sprites' E-Safety - Create E-Safety booklets 	<p>Creating Media – Digital Painting Knowledge / key concepts:</p> <ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content Identify and use different icons to paint a digital picture using different shapes and marks Make strategic choices when painting a digital picture Explain why they chose the tools they used Compare digital painting with paper painting E-Safety - Understand the importance of keeping personal information private and not sharing personal information online 	<p>Creating Media – Digital writing Knowledge / key concepts:</p> <ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content Locate and use keys on a keyboard to type and edit Use tools on 'Word' to change the font, size and colour of typing Compare digital writing with handwriting E-Safety - Use technology safely and respectfully, keeping personal information private
 <p>Robins</p>	<p>The Internet (Computing systems and Networks)</p> <p>Knowledge/Key Concepts: -To understand that networks need to be kept secure and that the WWW is part of the internet. -To use sites to create content and learn about who own content online</p>	<p>Data Logging (Data and Information)</p> <p>Knowledge/Key Concepts: - To collect and analyse data - To understand what data points, data sets, and logging are. - To use computers to help analyse data - To pose questions and draw conclusions about the date collected</p>	<p>COMPUTING – Topic Title: Audio Editing (Creating Media)</p> <p>Knowledge/Key Concepts: - To understand input and output when recording sound - To create their own recordings using Audacity. Planning, recording and editing their own work and evaluating the effectiveness of their work</p> <p>Create a radio advert for their salad</p>	<p>COMPUTING – Topic Title: Photo Editing (Creating Media)</p> <p>Knowledge/Key Concepts: - To understand how digital images can be changed and edited. - To evaluate the impact that edited images can have</p> <p><i>Link to Art Outcome</i></p>	<p>COMPUTING – Topic Title: Repetition in shapes (Programming A)</p> <p>Knowledge/Key Concepts: - To create programs by planning, modifying and testing commands to create shapes and patterns</p>	<p>COMPUTING – Topic Title: Repetition in games (Programming B)</p> <p>Knowledge/Key Concepts: - To use their knowledge to modify existing animations and games using repetitions. To plan a game using repetition</p>
 <p>Kingfishers</p>	<p><u>Sharing Information</u></p> <p>Knowledge/Key Concepts:</p> <ul style="list-style-type: none"> their understanding of computer systems and how information is transferred between systems and devices. will consider small-scale systems as well as large-scale systems. will explain the input, output, and process aspects of a variety of different real-world systems. will also take part in a collaborative online project with other class members and develop their skills in working together online. 	<p><u>Flat-file Databases</u></p> <p>Knowledge/Key Concepts:</p> <ul style="list-style-type: none"> how a flat-file database can be used to organise data in records. how to use tools within a database to order and answer questions about data. how to create graphs and charts from their data to help solve problems. how to use a real-life database to answer a question, and present their work to others. 	<p><u>Selection in quizzes</u></p> <p>Knowledge/Key Concepts:</p> <ul style="list-style-type: none"> their knowledge of selection by revisiting how conditions can be used in programs and then learning how the If... Then... Else structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They use their knowledge of writing programs and using selection to control outcomes to design a quiz in 	<p><u>Selection in physical computing</u></p> <p>Knowledge/Key Concepts:</p> <ul style="list-style-type: none"> physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. will be introduced to a microcontroller (Crumble controller) and learn how to connect and program components (including output devices- LEDs and motors) through the application of their existing programming knowledge. are introduced to conditions as a means of controlling the flow of actions and make use of their knowledge of repetition 	<p><u>Vector Drawing</u></p> <p>Knowledge/Key Concepts:</p> <ul style="list-style-type: none"> that vector images are made up of shapes. They will learn how to use the different drawing tools and how images are created in layers. They will explore the ways in which images can be grouped and duplicated to support them in creating more complex pieces of work. use the Google Drawings app other alternative pieces of software are available. 	<p><u>Video Editing</u></p> <p>Knowledge/Key Concepts:</p> <ul style="list-style-type: none"> how to create short videos topic-based language and develop the skills of capturing, editing, and manipulating video. have the opportunity to reflect on and assess their progress in creating a video.



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			response to a given task and implement it as a program.	and conditions when introduced to the concept of selection (through the if, then structure).		
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Cycle 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
 Wrens	<p><u>Technology- no longer part of the EYFS but still linked activities through our provision</u></p> <p>Ongoing -Interacting with computer keyboard skills & mouse skills Remote control toys, microphones, talking tins, story CDs, Beebots Old phones, cameras, radios, remote controls, laptops during active learning and in the home corner.</p>					
 Kites Kestrels	Computing systems and networks – IT around us Knowledge / key concepts <ul style="list-style-type: none"> Describe some uses of computers Identify that a computer is a part of information technology Open files Move and resize images Recognise that information technology can be connected Know how to use information technology safely and respectfully 	Creating Media- Digital photography Knowledge / key concepts <ul style="list-style-type: none"> Explain the process of capturing a digital photo Take photos in both landscape and portrait format Explain why a photo looks better in portrait or landscape format Retake photos to improve the image Explore the effect of light on photos Recognise that images can be changed Use tools to achieve desired effect Identify which photos are real and which have been changed 	Creating Media- Digital music Knowledge / key concepts <ul style="list-style-type: none"> Create a rhythm pattern Use a computer to experiment with pitch and duration Identify that music is a sequence of notes Refine musical patterns on a computer Save work in a file and reopen 	Data and Information- Pictograms Knowledge / key concepts <ul style="list-style-type: none"> Record data in a tally chart Compare totals in a tally chart Enter data onto a computer Use a computer to view data Create a pictogram and draw conclusions from it Use a computer program to present information in different ways Share what has been discovered using a computer 	Programming – Robot algorithms Knowledge / key concepts <ul style="list-style-type: none"> Give clear and unambiguous instructions Create different algorithms for a range of sequences Use an algorithm to program a robot Predict the outcomes of a sequence Explain what my algorithm should achieve Test and debug a the program 	Programming - Quizzes Knowledge / key concepts <ul style="list-style-type: none"> Match two sequences with the same outcome Work out the actions of a sprite in an algorithm Build the sequences of blocks needed Choose backgrounds for a design Choose images for a design Compare the project to the design Improve the project by adding features Debug the project
 Robins	Connecting Computers Knowledge/Key Concepts: <ul style="list-style-type: none"> To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way that we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network 	Stop- frame animation Knowledge/Key Concepts: <ul style="list-style-type: none"> To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation 	Creating Media Desktop Publishing Knowledge/Key Concepts: <ul style="list-style-type: none"> To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing 	Branching Databases Knowledge/Key Concepts: <ul style="list-style-type: none"> To create questions with yes/no answers To identify the object attributes needed to collect relevant data To create a branching database To explain why it is helpful for a database to be well structured To identify objects using a branching database To compare the information shown in a pictogram with a branching database 	Sequencing Sounds Knowledge/Key Concepts: <ul style="list-style-type: none"> To explore a new programming environment To identify that commands have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description 	Events and Actions in Programs Knowledge/Key Concepts: <ul style="list-style-type: none"> To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge
 Kingfishers	Communication Knowledge / key concepts <ul style="list-style-type: none"> 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 	Programming A: Variables in Games <ul style="list-style-type: none"> Define a 'variable' as something that is changeable Explain why a variable is used in a program Choose how to improve a game by using variables Design a project that builds on a given example To use my design to create and evaluate my own project 	Spreadsheets Knowledge / key concepts <ul style="list-style-type: none"> 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 Describe how I can search for information within a wide group 	Website Design Knowledge / key concepts <ul style="list-style-type: none"> To use the internet with adult support to communicate with people I know. To navigate online content, websites, or social media feeds using more sophisticated tools to get to the information I want (e.g. menus, sitemaps, breadcrumb-trails, site search functions). To explain why copying someone else's work from the internet without permission can cause problems. 	Sensing Knowledge / key concepts <ul style="list-style-type: none"> 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 	3D modelling Knowledge / key concepts <ul style="list-style-type: none"> Use a computer to create and manipulate three-dimensional (3D) digital objects Compare working digitally with 2D and 3D graphics Construct a digital 3D model of a physical object Identify that physical objects can be broken down into a collection of 3D shapes Design a digital model by combining 3D objects Develop and improve a digital 3D model



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	<ul style="list-style-type: none">• 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• Describe and assess the benefits and the potential risks of sharing information online.• Use various additional tools to refine my searches (e.g. search filters: size, type, usage rights etc.).• Explain how to use search effectively and use examples from my own practice to illustrate this.• Explain how search engine rankings are returned and can explain how they can be influenced (e.g. commerce, sponsored results).		<p>of technologies (e.g. social media, image sites, video sites).</p> <ul style="list-style-type: none">• Use different search technologies.• Evaluate digital content and can explain how I make choices from search results.	<ul style="list-style-type: none">• To give examples of what those problems might be.• 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.• To assess and justify when it is acceptable to use the work of others and give examples of content that is permitted to be reused.• To demonstrate the use of search tools to find and access online content which can be reused by others.• To demonstrate how to make references to and acknowledge sources I have used from the internet.	<p>errors in algorithms and programs</p>	<ul style="list-style-type: none">• 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
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