

Wren Park Primary School

Whole school long term

Computing curriculum overview



RESPECTFUL



AMBITIOUS



RESILIENT



Strands: Computing system and networks, creating media, programming, data and information.

Within these are Digital Literacy, Computer Science (computational thinking, problem solving) and Information Technology (computational thinking, how technology works.)

Build knowledge about:	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	<p>To recognise technology can be used for different purposes (photos, music, games) and that you can learn using technology.</p> <p>To follow 1 step instructions To sort shapes and numbers To match and compare objects by different characteristics (amounts, size etc.)</p>	<p>Explore how things work. Develop an awareness of digital storage of information- photography, digital.</p> <p>To follow 2 part instructions</p> <p>To sequence two events from a familiar story, using puppets, pictures from book or role-play.</p> <p>To sort different shapes e.g. circles, triangles, quadrilaterals To sequence numbers up to 5 To find one more and one less in a sequence</p> <p>Ask questions, use different sources to find answers including books, the internet.</p>	<p>Program a BeeBot/ instruct a friend to move along a track or small world setup in a specific direction using terms up, down, side.</p> <p>To compare numbers to 5</p> <p>To compare mass</p> <p>To compare capacity</p> <p>To use the language of time when talking about past/present events. (sequencing).</p>	<p>To use technology to play games, taking turns</p> <p>To use talk to help work out problems and organise thinking and activities explain how things work and why they might happen.</p> <p>To identify and create simple patterns.</p>	<p>To use technology to play games, taking turns</p> <p>To explore counting patterns to 10 and beyond</p> <p>To order numbers to 20</p> <p>To solve problems using tangrams</p>	<p>To explore how technology has changed over time (music - record player, tape/DVD)</p> <p>To share and group objects</p> <p>To explore patterns and relationships</p>
	<p>Throughout the year:</p> <ul style="list-style-type: none"> Have daily access to a range of technology resources such as role-play equipment/toys eg microwave, keyboard, telephones, toys with switches, books with sound buttons/interactive flaps, beebots, as well as class ipads and interactive whiteboards. Use a range of technology resources to support learning in other areas of the curriculum. Are taught how to use the resources for different purposes eg ipads to watch videos, play games, take photographs and listen to stories. Take part in Online Safety Day along with the rest of the school and regularly revisit the topic of keeping safe online. 					
Year 1	<p>Technology around us</p> <p>To identify technology in our classroom To identify a computer and its main parts To use a computer responsibly</p>	<p>Digital painting</p> <p>To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when</p>	<p>Grouping data</p> <p>To label objects To identify that objects can be counted To describe objects in different ways</p>	<p>Moving a robot</p> <p>To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a</p>	<p>Digital photography</p> <p>To know what devices can be used to take photographs To use a digital device to take a photograph To describe what makes a good</p>	<p>Introduction to animation</p> <p>To choose a command for a given purpose To show that a series of commands can be joined together</p>

	To create rules for using technology responsibly	painting a digital picture To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper	To count objects with the same properties To compare groups of objects To answer questions about groups of objects	sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem	photograph To decide how photographs can be improved To use tools to change an image To recognise that images can be changed	To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program
Year 2	Information technology around us To recognise the uses and features of information technology To identify information technology in the home To identify information technology beyond school To explain how information technology benefits us To show how to use information technology safely To recognise that choices are made when using information technology	Digital writing To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text To explain why I used the tools that I chose To compare writing on a computer with writing on paper	Robot algorithms To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program (series of commands) To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written	Pictograms To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	Making music To say how music can make us feel To identify that there are patterns in music To describe how music can be used in different ways To show how music is made from a series of notes To create music for a purpose To review and refine our computer work	Introduction to quizzes To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved
Year 3	Connecting computers To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way 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 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	Sequence in music To explore a new programming environment I can identify that each sprite is controlled by the commands I choose 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	Branching databases To create questions with yes/no answers To identify the object attributes needed to collect relevant data To create a branching database To identify objects using a branching database To explain why it is helpful for a database to be well structured To compare the information shown in a pictogram with a branching database	Starter to Micro:bits To learn to create code for a Micro:bit To use the accelerometer To use variables to count To use light and temperature sensors To make use of the pins on the micro:bit To adapt a micro:bit project with our own ideas	Desktop publishing 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
Year 4	The internet To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web	Vector drawing To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect	Repetition in shapes To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given	Audio editing To identify that sound can be digitally recorded To use a digital device to record sound To explain that a digital recording is stored as a file To explain that audio can be	Micro:bit- Beyond Basics To use the magnetometer on the micro:bit To use logic with the micro:bit To create sounds using the micro:bit To use radio networks with the micro:bit	Data logging To learn to record and analyse data using the micro:bit To collect and analyse data using the Micro:bit To record earthquake data using the micro:bit To investigate sounds and

	<p>To describe how content can be added and accessed on the World Wide Web</p> <p>To recognise how the content of the WWW is created by people</p> <p>To evaluate the consequences of unreliable content</p>	<p>To recognise that vector drawings consist of layers</p> <p>To group objects to make them easier to work with</p> <p>To evaluate my vector drawing</p>	<p>outcome</p> <p>To decompose a program into parts</p> <p>To create a program that uses count-controlled loops to produce a given outcome</p>	<p>changed through editing</p> <p>To show that different types of audio can be combined and played together</p> <p>To evaluate editing choices made</p>	<p>To use radio networks with the Micro:bit</p> <p>To create games for our Micro:bit</p> <p>To code our own game.</p>	<p>materials</p> <p>To record and analyse energy use</p> <p>To create a home to withstand an earthquake</p> <p>PROGRAMMING ALSO USED</p>
Year 5	<p>Photo editing</p> <p>To explain that digital images can be changed</p> <p>To change the composition of an image</p> <p>To describe how images can be changed for different uses</p> <p>To make good choices when selecting different tools</p> <p>To recognise that not all images are real</p> <p>To evaluate how changes can improve an image</p>	<p>Video editing</p> <p>To recognise video as moving pictures, which can include audio</p> <p>To identify digital devices that can record video</p> <p>To capture video using a digital device</p> <p>To recognise the features of an effective video</p> <p>To identify that video can be improved through reshooting and editing</p> <p>To consider the impact of the choices made when making and sharing a video</p>	<p>Sharing information</p> <p>To explain that computers can be connected together to form systems</p> <p>To recognise the role of computer systems in our lives</p> <p>To recognise how information is transferred over the internet</p> <p>To explain how sharing information online lets people in different places work together</p> <p>To contribute to a shared project online</p> <p>To evaluate different ways of working together online</p>	<p>Flat-file databases</p> <p>To use a form to record information</p> <p>To compare paper and computer-based databases</p> <p>To outline how grouping and then sorting data allows us to answer questions</p> <p>To explain that tools can be used to select specific data</p> <p>To explain that computer programs can be used to compare data visually</p> <p>To apply my knowledge of a database to ask and answer real-world questions</p>	<p>Selection in physical computing</p> <p>To control a simple circuit connected to a computer</p> <p>To write a program that includes count-controlled loops</p> <p>To explain that a loop can stop when a condition is met, eg number of times</p> <p>To conclude that a loop can be used to repeatedly check whether a condition has been met</p> <p>To design a physical project that includes selection</p> <p>To create a controllable system that includes selection</p>	<p>Sensing</p> <p>To create a program to run on a controllable device</p> <p>To explain that selection can control the flow of a program</p> <p>To update a variable with a user input</p> <p>To use an conditional statement to compare a variable to a value</p> <p>To design a project that uses inputs and outputs on a controllable device</p> <p>To develop a program to use inputs and outputs on a controllable device</p>
Year 6	<p>Communication</p> <p>To identify how to use a search engine</p> <p>To describe how search engines select results</p> <p>To describe how search engines select results</p> <p>To explain how search results are ranked</p> <p>To recognise why the order of results is important, and to whom</p> <p>To recognise how we communicate using technology</p> <p>To evaluate different methods of online communication</p>	<p>Web page creation</p> <p>To review an existing website and consider its structure</p> <p>To plan the features of a web page</p> <p>To consider the ownership and use of images (copyright)</p> <p>To recognise the need to preview pages</p> <p>To outline the need for a navigation path</p> <p>To recognise the implications of linking to content owned by other people</p>	<p>Variables in games</p> <p>To define a 'variable' as something that is changeable</p> <p>To explain why a variable is used in a program</p> <p>To choose how to improve a game by using variables</p> <p>To design a project that builds on a given example</p> <p>To use my design to create a project</p> <p>To evaluate my project</p>	<p>Spreadsheets</p> <p>To identify questions which can be answered using data</p> <p>To explain that objects can be described using data</p> <p>To explain that formula can be used to produce calculated data</p> <p>To apply formulas to data, including duplicating</p> <p>To create a spreadsheet to plan an event</p> <p>To choose suitable ways to present data</p>	<p>3D modelling</p> <p>To use a computer to create and manipulate three-dimensional (3D) digital objects</p> <p>To compare working digitally with 2D and 3D graphics</p> <p>To construct a digital 3D model of a physical object</p> <p>To identify that physical objects can be broken down into a collection of 3D shapes</p> <p>To design a digital model by combining 3D objects</p> <p>To develop and improve a digital 3D model</p>	<p>Micro:bit</p> <p>To create a program to run on a controllable device</p> <p>To understand a block systems diagram of the heart monitoring system.</p> <p>To understand the use of and apply an accelerometer as a heart monitoring device.</p> <p>To successfully program the BBC micro:bit so that the system meets the design criteria.</p> <p>To debug a program and evaluate the effectiveness.</p>