



Sacred Heart RC Primary School

'Where Every Heart is Sacred'

Whole-School Curriculum Progression Map: Computing

	Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
D I G I T A L L I T E R A C Y	<p>Recognise that a range of technology is used for different purposes.</p> <p>Log in and out of devices.</p>	<p>Log in and out of the computers and save work on their own account such as Google Classroom.</p> <p>When using the internet to search for images, learn what to do if they come across something online that worries them or makes them feel uncomfortable.</p> <p>Understand how to interact safely with others online.</p> <p>Recognise how actions on the internet can affect others.</p> <p>Recognise what a digital footprint is and how to be careful about what we post.</p>	<p>Learn how to create a strong password.</p> <p>Understand how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable</p> <p>Identify whether information is safe or unsafe to be shared online.</p> <p>Learn to be respectful of others when sharing online and ask for their permission before sharing content.</p> <p>Learn strategies for checking if something they read online is true.</p>	<p>Recognise that different information is shared online including facts, beliefs and opinions.</p> <p>Learn how to identify reliable information when searching online.</p> <p>Learn how to stay safe on social media.</p> <p>Consider the impact technology can have on mood.</p> <p>Learn about cyberbullying.</p> <p>Learn that not all emails are genuine, recognising when an email might be fake and what to do about it.</p>	<p>Recognise that information on the internet might not be true or correct and that some sources are more trustworthy than others.</p> <p>Learn to make judgements about the accuracy of online searches.</p> <p>Identify forms of advertising online.</p> <p>Recognise what appropriate behaviour is when collaborating with others online.</p> <p>Reflect on the positives and negatives of time spent online.</p> <p>Identify respectful and disrespectful online behaviour.</p>	<p>Identify possible dangers online and learn how to stay safe.</p> <p>Evaluate the pros and cons of online communication.</p> <p>Recognise that information on the internet might not be true or correct and learning ways of checking validity.</p> <p>Learn what to do if they experience bullying online.</p> <p>Learn to use an online community safely.</p>	<p>Learn about the positive and negative impacts of sharing online.</p> <p>Learn strategies to create a positive online reputation.</p> <p>Understand the importance of secure passwords and how to create them.</p> <p>Learn strategies to capture evidence of online bullying in order to seek help.</p> <p>Use search engines safely and effectively.</p> <p>Recognise that updated software can help to prevent data corruption and hacking.</p>



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INFORMATION TECHNOLOGY	<p>Software</p> <p>Use a simple online paint tool to create digital art.</p>	<p>Software</p> <p>Use a basic range of tools within graphic editing software.</p> <p>Take and edit photographs.</p> <p>Develop control of the mouse through dragging, clicking and resizing of images to create different effects.</p> <p>Develop an understanding of different software tools.</p>	<p>Software</p> <p>Develop word processing skills, including altering text, copying and pasting and using keyboard shortcuts.</p> <p>Use word processing software to type and reformat text.</p> <p>Use software (and unplugged means) to create story animations.</p> <p>Create and label images.</p>	<p>Software</p> <p>Take photographs and record video to tell a story.</p> <p>Use software to edit and enhance their video adding music, sounds and text on screen with transitions.</p>	<p>Software</p> <p>Build a webpage and create content for it</p> <p>Design and create a webpage for a given purpose.</p> <p>Use online software for documents, presentations, forms and spreadsheets – Google Classroom</p> <p>Use software to work collaboratively with others.</p>	<p>Software</p> <p>Use logical thinking to explore software more independently, making predictions based on their previous experience.</p> <p>Use software programme Sonic Pi/Scratch to create music.</p> <p>Use the video editing software to animate.</p> <p>Identify ways to improve and edit programs, videos, images etc.</p> <p>Independently use 3D design software package TinkerCAD.</p>	<p>Software</p> <p>Use logical thinking to explore software independently, iterating ideas and testing continuously.</p> <p>Use search and word processing skills to create a presentation.</p> <p>Create and edit sound recordings for a specific purpose.</p> <p>Create and edit videos, adding multiple elements: music, voiceover, sound, text and transitions.</p> <p>Use design software TinkerCAD to design a product.</p> <p>Create a website with embedded links and multiple pages.</p>
		<p>Email and Internet Searches</p> <p>Recognise devices that are connected to the internet.</p> <p>Search and download images from the internet safely.</p> <p>Understand that we are connected to others when using the internet.</p>	<p>Email and Internet Searches</p> <p>Search for appropriate images to use in a document.</p> <p>Understand what online information is.</p>	<p>Email and Internet Searches</p> <p>Learn to log in and out of an email account.</p> <p>Write an email including a subject, 'to' and 'from.'</p> <p>Send an email with an attachment.</p> <p>Reply to an email.</p>	<p>Email and Internet Searches</p> <p>Understand why some results come before others when searching.</p> <p>Use keywords to effectively search for information on the internet.</p> <p>Understand that information found by searching the internet is not all grounded in fact.</p> <p>Search the internet for data.</p>	<p>Email and Internet Searches</p> <p>Develop searching skills to help find relevant information on the internet.</p> <p>Learn how to use search engines effectively to find information, focussing on keyword searches and evaluate search returns.</p>	<p>Email and Internet Searches</p> <p>Understand how search engines work.</p>



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	<p>Data Represent data through sorting and categorising objects in unplugged scenarios.</p> <p>Represent data through physical pictograms.</p> <p>Explore branch databases through physical games.</p>	<p>Data Understand that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc.</p> <p>Use representations to answer questions about data.</p> <p>Use software to explore and create pictograms and branching databases.</p>	<p>Data Collect and input data into a spreadsheet.</p> <p>Interpret data from a spreadsheet.</p>	<p>Data Understand the vocabulary to do with databases: field, record, data.</p> <p>Learn about the pros and cons of digital versus paper databases.</p> <p>Sort and filter databases to easily retrieve information.</p> <p>Create and interpret charts and graphs to understand data.</p>	<p>Data Understand that data is used to forecast weather.</p> <p>Record data in a spreadsheet independently.</p> <p>Sort data in a spreadsheet to compare using the 'sort by...' option.</p> <p>Design a device which gathers and records sensor data.</p>	<p>Data Understand how data is collected in remote or dangerous places.</p> <p>Understand how data might be used to tell us about a location.</p>	<p>Data Understand how barcodes, QR codes and RFID work.</p> <p>Gather and analyse data in real time.</p> <p>Create formulas and sort data within spreadsheets.</p>
		<p>Wider Use of Technology Recognise common uses of information technology, including beyond school.</p> <p>Understand some of the ways we can use the internet.</p>	<p>Wider Use of Technology Learn how computers are used in the wider world.</p>	<p>Wider Use of Technology Understand the purpose of emails.</p> <p>Recognise how social media platforms are used to interact.</p>	<p>Wider Use of Technology Understand that software can be used collaboratively online to work as a team.</p>	<p>Wider Use of Technology Learn about different forms of communication that have developed with the use of technology.</p>	<p>Wider Use of Technology Learn about the Internet of Things and how it has led to 'big data'.</p> <p>Learn how 'big data' can be used to solve a problem or improve efficiency.</p>



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COMPUTER SCIENCE	<p>Hardware</p> <p>Operate a camera or tablet to take photographs of meaningful creations or moments.</p> <p>Explore and tinker with hardware to develop familiarity and introduce relevant vocabulary.</p> <p>Recognise and identify familiar letters and numbers on a keyboard.</p> <p>Develop basic mouse skills such as moving and clicking.</p>	<p>Hardware</p> <p>Operate a camera or tablet to take photos and videos.</p> <p>Explore and tinker with hardware to find out how it works.</p> <p>Recognise that some devices are input devices and others are output devices.</p> <p>Locate where keys are on the keyboard.</p>	<p>Hardware</p> <p>Understand what a computer is and that it's made up of different components.</p> <p>Recognise that buttons cause effects and that technology follows instructions.</p> <p>Learn how we know that technology is doing what we want it to do via its output.</p> <p>Use greater control when taking photos with cameras, tablets or computers.</p> <p>Develop confidence with the keyboard and the basics of touch typing.</p>	<p>Hardware</p> <p>Understand what the different components of a computer do and how they work together.</p> <p>Draw comparisons across different types of computers.</p> <p>Learn about the purpose of routers.</p>	<p>Hardware</p> <p>Use chroma key (green screen) technology to change a background.</p> <p>Understand that weather stations use sensors to gather and record data which predicts the weather.</p>	<p>Hardware</p> <p>Learn that external devices can be programmed by a separate computer.</p> <p>Learn the difference between ROM and RAM.</p> <p>Recognise how the size of RAM affects the processing of data.</p> <p>Understand the fetch, decode, execute cycle.</p>	<p>Hardware</p> <p>Learn about the history of computers and how they have evolved over time.</p> <p>Use the understanding of historic computers to design a computer of the future.</p> <p>Understand and identifying barcodes, QR codes and RFID.</p> <p>Identify devices and applications that can scan or read barcodes, QR codes and RFID.</p> <p>Understand how corruption can happen within data during transfer (for example when downloading, installing, copying and updating files).</p>
				<p>Networks and Data Representation</p> <p>Understand the role of the key components of a network.</p> <p>Identify the key components within a network, including whether they are wired or wireless.</p> <p>Understand that websites and videos are files that are shared from one computer to another.</p> <p>Learn about the role of packets.</p> <p>Understand how networks work and their purpose. Recognise links between networks and the internet.</p>	<p>Networks and Data Representation</p> <p>Understand that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration.</p>	<p>Networks and Data Representation</p> <p>Learn the vocabulary associated with data: data and transmit.</p> <p>Learn how the data for digital images can be compressed.</p> <p>Recognise that computers transfer data in binary and understand simple binary addition.</p> <p>Relate binary signals (Boolean) to the simple character-based language, ASCII.</p> <p>Learn that messages can be sent by binary code, reading binary up to eight characters</p>	<p>Networks and Data Representation</p> <p>Understand that computer networks provide multiple services.</p>



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			Learn how data is transferred.		and carrying out binary calculations. Understand how bit patterns represent images as pixels.	
Computational Thinking	Computational Thinking	Computational Thinking	Computational Thinking	Computational Thinking	Computational Thinking	Computational Thinking
Use logical reasoning to understand simple instructions and predict the outcome.	Learn that decomposition means breaking a problem down into smaller parts. Use decomposition to solve unplugged challenges. Use logical reasoning to predict the behaviour of simple programs. Develop the skills associated with sequencing in unplugged activities. Follow a basic set of instructions. Assemble instructions into a simple algorithm.	Articulate what decomposition is. Decompose a game to predict the algorithms used to create it. Learn that there are different levels of abstraction. Explain what an algorithm is. Follow an algorithm. Create a clear and precise algorithm. Learn that programs execute by following precise instructions. Incorporate loops within algorithms.	Use decomposition to explain the parts of a laptop computer. Use decomposition to explore the code behind an animation. Use repetition in programs. Use logical reasoning to explain how simple algorithms work. Explain the purpose of an algorithm. Form algorithms independently.	Use decomposition to solve a problem by finding out what code was used. Use decomposition to understand the purpose of a script of code. Identify patterns through unplugged activities. Use past experiences to help solve new problems. Use abstraction to identify the important parts when completing both plugged and unplugged activities.	Decompose animations into a series of images. Decompose a program without support. Decompose a story to be able to plan a program to tell a story. Predict how software will work based on previous experience. Write more complex algorithms for a purpose.	Decompose a program into an algorithm. Use past experiences to help solve new problems. Write increasingly complex algorithms for a purpose.



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Programming	Programming	Programming	Programming	Programming	Programming	Programming
<p>Follow instructions as part of practical activities and games.</p> <p>Give simple instructions.</p> <p>Experiment with programming a Bee-bot/Blue- bot and learn how to give simple commands.</p> <p>Debug instructions, with the help of an adult, when things go wrong.</p>	<p>Program a floor robot to follow a planned route.</p> <p>Debug instructions when things go wrong.</p> <p>Use programming language to explain how a floor robot works.</p> <p>Debug an algorithm in an unplugged scenario.</p>	<p>Use logical thinking to explore software, predicting, testing and explaining what it does.</p> <p>Use an algorithm to write a basic computer program.</p> <p>Use loop blocks when programming to repeat an instruction more than once.</p>	<p>Use logical thinking to explore more complex software; predicting, testing and explaining what it does.</p> <p>Incorporate loops to make code more efficient.</p> <p>Continue existing code.</p> <p>Make reasonable suggestions for how to debug their own and others' code.</p>	<p>Create algorithms for a specific purpose.</p> <p>Code a simple game.</p> <p>Use abstraction and pattern recognition to modify code.</p> <p>Incorporate variables to make code more efficient.</p>	<p>Program an animation.</p> <p>Iterate and develop their programming as they work.</p> <p>Confidently use loops in their programming.</p> <p>Use a more systematic approach to debugging code, justifying what is wrong and how it can be corrected.</p> <p>Write code to create a desired effect.</p> <p>Use a range of programming commands.</p> <p>Use repetition within a program.</p> <p>Amend code within a live scenario.</p>	<p>Debug quickly and effectively to make a program more efficient.</p> <p>Remix existing code to explore a problem.</p> <p>Use and adapt nested loops.</p> <p>Program using the language Python.</p> <p>Change a program to personalise it.</p> <p>Evaluate code to understand its purpose.</p> <p>Predict code and adapt it to a chosen purpose.</p>