



St John's Catholic Primary School  
Computing Progression of Skills  
**Computer Science**



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"><li>• Give instructions to a friend and follow their instructions to move around a space.</li><li>• Describe what happens when buttons are pressed on a robot or device.</li><li>• Press buttons in the correct order to make a robot follow a short sequence.</li><li>• Understand what an algorithm is and be able to create a simple algorithm.</li><li>• Understand and explain how algorithms are used in every day life.</li><li>• Begin to predict what will happen for a short sequence of instructions.</li><li>• Begin to use different software or applications to create movement and patterns on a screen.</li><li>• Use the word debug to correct an algorithm that doesn't work in the way it was intended.</li></ul>	<ul style="list-style-type: none"><li>• Understand what an algorithm is and demonstrate simple linear algorithms.</li><li>• Be able to explain the order needed to do things to make something happen and to talk about it as an algorithm.</li><li>• Program a robot or software to do a particular task.</li><li>• Look at a basic program and explain what will happen.</li><li>• Use programming software and applications to make objects move.</li><li>• Use logical reasoning to predict and debug more complex programs.</li><li>• Can create and debug with improved confidence &amp; efficiency.</li><li>• Begin to program using simple block code.</li></ul>	<ul style="list-style-type: none"><li>• Understand how an algorithm is implemented using a sequence of precise instructions.</li><li>• Can predict the outcome of a sequence of precise instructions.</li><li>• Repeatedly test a program and recognise when they need to debug it.</li><li>• Detect a problem in an algorithm, which could result in a different outcome to the one intended.</li><li>• Understand what inputs and outputs are, how they can be used.</li><li>• Provide examples of how to use inputs and outputs effectively.</li><li>• Design, write, execute and debug programs of increasing complexity that accomplish a specific goal.</li><li>• Use logical reasoning to predict and debug more complex programs including inputs and outputs.</li></ul>	<ul style="list-style-type: none"><li>• Design simple algorithms using loops and repeats, whilst detecting and correcting errors is debugging.</li><li>• Write and execute an efficient program, using loops such as forever, repeat &amp; repeat until commands.</li><li>• Decompose a problem into smaller parts with some verbal reasoning.</li><li>• Has an understanding of how sequencing, using inputs and repetition in programs has specific effects on the output, works with 'loops' and understands their effect.</li><li>• Recognise that an algorithm will help to sequence more complex programs.</li><li>• Use logical reasoning to predict and debug more complex programs including loops and repeats.</li></ul>	<ul style="list-style-type: none"><li>• Program a condition that uses a sensor to detect a change, which can select an action within a program.</li><li>• Decomposes more open-ended problems into smaller parts, provides some reasoning for their choices.</li><li>• Approaches a range of problems using computationally thinking concepts, helping them to design other algorithms for other specific outcomes.</li><li>• Design, write and execute an efficient program, including selection (IF...THEN) command.</li><li>• Change an input to a program to achieve a different output.</li><li>• Use logical reasoning to predict and debug more complex programs including selection.</li><li>• Uses programs linked to physical systems and sensors e.g. the alarm goes off when the sensor is triggered.</li><li>• Design, write and execute an efficient program, which demonstrates and understanding of the difference between, and appropriate use of IF...THEN, IF...THEN...ELSE, and nested IF statements.</li></ul>	<ul style="list-style-type: none"><li>• Understand the importance of planning, testing and correcting algorithms.</li><li>• Demonstrate a range of different strategies to solve a problem including: abstraction, decomposition, logic &amp; evaluation.</li><li>• Understand why sequence &amp; patterns are important when creating simple algorithms that are part of a more complex program.</li><li>• Gives reasoning for each step within algorithms and applying them to a program.</li><li>• Understand &amp; develop complex flow diagrams.</li><li>• Use a variable to increase programming possibilities.</li><li>• Use a variable and relational operators (e.g. &lt; = &gt;) within a loop to stop a program.</li><li>• Evaluate the effectiveness and efficiency of an algorithm while continually testing the programming of that program.</li><li>• Use different inputs (including sensors) to control a device or onscreen action and predict what will happen.</li><li>• Use logical reasoning to predict and debug more complex programs including: selection, variables and operators.</li></ul>



St John's Catholic Primary School  
Computing Progression of Skills  
**Digital Literacy**



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"><li>• Understand why we need passwords.</li><li>• Understand that we must keep passwords private.</li><li>• Explain what personal information is.</li><li>• Understand that we must keep personal information private.</li><li>• Communicate safely and respectfully online.</li><li>• Know what to do when concerned about online content.</li><li>• Know what to do if someone tries to contact you online.</li></ul>	<ul style="list-style-type: none"><li>• Understand the need to keep a password private.</li><li>• Understand the need to keep personal information private.</li><li>• Demonstrate the use of technology responsibly in terms of how we use it and the time we spend using it.</li><li>• Know how to report inappropriate content or contact online.</li></ul>	<ul style="list-style-type: none"><li>• Children consider their responsibilities and actions to others online.</li><li>• Children consider that all of the media they see could have been altered.</li><li>• Understand how to use a search engine responsibly and safety.</li></ul>	<ul style="list-style-type: none"><li>• Understand that media can be edited online for advertising and other purposes.</li><li>• Recognise what is acceptable and unacceptable behavior when using technology and online services.</li><li>• Children understand how effective a strong password is and what a strong password looks like.</li></ul>	<ul style="list-style-type: none"><li>• Be aware of their digital footprint.</li><li>• Understand the dangers of building online relationships.</li><li>• Explain what the consequences might be to using technology inappropriately or accessing inappropriate content intentionally.</li></ul>	<ul style="list-style-type: none"><li>• Be aware of fake news and how to dissect it.</li><li>• Understand the difference between misinformation and disinformation.</li><li>• Understand what Copywriting is and using someone else's work responsibly.</li><li>• Manage their conduct and contact appropriately and safely when using technology and online services.</li></ul>



St John's Catholic Primary School  
Computing Progression of Skills  
**ICT Beyond the school**



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"><li>• Recognise that a range of digital devices and products can be considered computers.</li><li>• Recognise the ways in which technology is used in their homes and community.</li><li>• Understand that computers have no intelligence and can do nothing without being programmed.</li><li>• Begin to identify some of the benefits to using technology.</li></ul>	<ul style="list-style-type: none"><li>• Children can explain why they use technology in the classroom, in their homes and in the community.</li><li>• Identify the benefits of using technology, such as creating content and communicating efficiently.</li><li>• Can identify a computer by knowing that it has inputs, a processor and outputs.</li><li>• Can identify parts of a computer including what an input and output is.</li></ul>	<ul style="list-style-type: none"><li>• Save and retrieve work online, on the school network and their own device.</li><li>• Tell you ways to communicate with others online.</li><li>• Knows how navigate the web responsibly.</li><li>• Can carry out effective web searches to collect digital content.</li><li>• Think about whether they can use images that they find online in their own work.</li></ul>	<ul style="list-style-type: none"><li>• Understand the difference between the Internet and online services such as the World Wide Web, instant messaging and email.</li><li>• Tell you whether a resource they are using is from the World Wide Web, the school network or their own work.</li><li>• Identify key words to use when searching safely on the World Wide Web.</li><li>• Show an awareness of a range of Internet services such as the World Wide Web, email and instant messaging.</li><li>• Explain how to check who owns photos, text and clipart.</li></ul>	<ul style="list-style-type: none"><li>• Use different online tools for different purposes.</li><li>• Use a search engine effectively to find appropriate information and check the reliability of a website.</li><li>• Understand how search results are selected and ranked and the algorithms they use.</li><li>• Recognise and evaluate different types of information they find on the World Wide Web.</li><li>• Think about the reliability of information they read on the World Wide Web or other Internet services (Fake News)</li></ul>	<ul style="list-style-type: none"><li>• Explain the Internet services they need to use for different purposes.</li><li>• Describe the different parts of a webpage.</li><li>• Understands how to construct a website using basic HTML tags.</li><li>• Explain what copyright is and acknowledge the sources of information that they find online.</li><li>• Understands how data is transmitted across a network.</li><li>• Understand what IP is and how it's used.</li><li>• Can explain how networks use the Internet to send and receive data.</li></ul>



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Computing Progression of Skills



Information Technology

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"><li>• Talk about the different ways in which information can be shown.</li><li>• Use technology to collect information, including photos, videos and sound.</li><li>• Sort different kinds of information and present it to others.</li><li>• Add information to a pictogram and talk about their findings.</li><li>• Use software with support, to create, store and edit digital content using appropriate file and folder names.</li><li>• Use the keyboard or a word bank on a device to enter text into a program.</li><li>• Understand some of the basic functions on a keyboard (Backspace, Caps Lock, Enter)</li><li>• Save information in a specific place and retrieve it again.</li><li>• Use technology to collect information, including photos, videos and sounds.</li></ul>	<ul style="list-style-type: none"><li>• Create a graph or chart using data collected on a specific topic area.</li><li>• Talk about the data that is shown in their chart or graph.</li><li>• Explain how investigating data can be used to answer a question.</li><li>• Use a variety of software to manipulate and present digital content in different ways with increasing independence.</li><li>• Talk about the different ways to use technology to collect information, including a camera or sound recorder.</li><li>• Use the keyboard on their device to add, delete, edit and format text.</li><li>• Talk about an online tool that will help them to share their ideas with other people.</li><li>• Save and open files on the device they use from a specific file location.</li></ul>	<ul style="list-style-type: none"><li>• Understand the difference between data and information.</li><li>• Talk about the different ways data can be converted into information.</li><li>• Search a ready-made database to answer specific questions.</li><li>• Collect data to help answer questions about a specific topic or theme.</li><li>• Add to and edit an existing database.</li><li>• Combine a mixture of text, graphics and sound to share ideas and learning.</li><li>• Use appropriate keyboard commands to amend text.</li><li>• Be able to effectively use a spell checker.</li><li>• Evaluate their work and improve its effectiveness.</li><li>• Use an appropriate tool to share their work online.</li></ul>	<ul style="list-style-type: none"><li>• Demonstrate the different ways data can be organised.</li><li>• Demonstrate the different ways data can be converted into information.</li><li>• Make a branching database.</li><li>• Collect data and identify where it could be inaccurate.</li><li>• Plan, create and search a database.</li><li>• Select the best way to present data to a specific audience.</li><li>• Log data using a device.</li><li>• Use photos, video and sound to create an atmosphere when presenting to different audiences.</li><li>• Be confident to explore new media to extend what they can achieve.</li><li>• Change the appearance of text to increase its effectiveness depending on the audience or mood.</li><li>• Create, modify and present documents for a particular purpose and audience.</li><li>• Use a keyboard confidently and make use of a spellchecker to write and review their work.</li><li>• Use an appropriate tool to share their work and collaborate online.</li><li>• Be able to evaluate other people's work and give them constructive feedback to help them improve their work.</li></ul>	<ul style="list-style-type: none"><li>• Choose an appropriate tool to help them collect data.</li><li>• Present data in an appropriate way depending on the theme or audience.</li><li>• Use a spreadsheet and database to collect, record and evaluate data.</li><li>• Search a database using different operators to refine a search.</li><li>• Talk about errors in data and suggest how it could be checked.</li><li>• Use text, photo, sound and video editing tools to evaluate and refine their work.</li><li>• Be able to use a variety of familiar and unfamiliar software by using a pre-existing skill set.</li><li>• Select, use and combine the appropriate technology tools to create effects in media.</li><li>• Select an appropriate online or offline tool to create and share ideas.</li><li>• Evaluate and improve their own work and support others in improving their work.</li><li>• Acknowledges sources of information appropriately.</li></ul>	<ul style="list-style-type: none"><li>• Select the most effective tool to collect data for their investigation.</li><li>• Check the data they collect for accuracy and plausibility,</li><li>• Plan the process needed to investigate a set environment or setting.</li><li>• Interpret and present the data they collect.</li><li>• Use the skills developed to interrogate a database.</li><li>• Use a range of strategies to increase the accuracy of keyword searches. Makes confident inferences about their effectiveness.</li><li>• Talk about audience, atmosphere and structure when planning a particular media outcome.</li><li>• Combine a range of media, recognising the contribution of each to achieve a particular outcome.</li><li>• Confidently identify the potential of unfamiliar technology and how it can be used effectively.</li><li>• Explain why they select a particular online tool for a specific purpose.</li><li>• Be digitally discerning when evaluating the effectiveness of their own work and the work of others.</li><li>• Recognise the importance of copyright and how to acknowledge the sources of information.</li></ul>