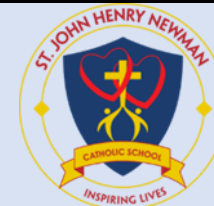




St John Henry Newman Catholic Primary School
Yearly Curriculum Overview
Computing progression



| | <i>Computing systems and networks</i> | <i>Programming</i> | <i>Creating media</i> | <i>Data handling</i> | <i>Online safety</i> |
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| <i>EYFS</i> | <p><i>Using a computer</i> <i>Exploring hardware</i> To be able to understand what a computer keyboard is and recognising some letters and numbers. To know that a mouse can be used to click, drag and create simple drawings. To know that to use a computer you need to log in to it and then log out at the end of your session. To know that different types of technology can be found at home and in school. To know that you can take simple photographs with a camera or iPad. To know that you must hold the camera still and ensure the subject is in the shot to take a photo.</p> | <p><i>All about instructions</i> To know that being able to follow and give simple instructions is important in computing. To understand that it is important for instructions to be in the right order. To understand why a set of instructions may have gone wrong.</p> | <i>N/A</i> | <p><i>Introduction to data</i> To know that sorting objects into various categories can help you locate information. To know that using yes/no questions to find an answer is a branching database.</p> | <i>Through class discussions</i> |
| <i>Year 1</i> | <p><i>Improving mouse skills</i> To know that "log in and log out" means to begin</p> | <p><i>Algorithms unplugged</i> <i>Bee-bot</i> To understand that an algorithm is when</p> | <p><i>Digital imagery</i> To understand that holding the camera still and considering angles</p> | <i>N/A</i> | <p><i>Online safety Y1</i> To know that the internet is many devices</p> |

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| | <p>and end a connection with a computer.</p> <p>To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art.</p> <p>To know that passwords are important for security.</p> <p>To know that when we create something on a computer it can be more easily saved and shared than a paper version.</p> <p>To know some of the simple graphic design features of a piece of online software.</p> | <p>instructions are put in an exact order.</p> <p>To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.</p> <p>To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'.</p> <p>To understand the basic functions of a Bee-Bot.</p> <p>To know that you can use a camera/tablet to make simple videos.</p> <p>To know that algorithms move a bee-bot accurately to a chosen destination.</p> | <p>and light are important to take good pictures.</p> <p>To know that you can edit, crop and filter photographs.</p> <p>To know how to search safely for images online.</p> | | <p>connected to one another.</p> <p>To know that you should tell a trusted adult if you feel unsafe or worried online.</p> <p>To know that people you do not know on the internet (online) are strangers and are not always who they say they are.</p> <p>To know that to stay safe online it is important to keep personal information safe.</p> <p>To know that 'sharing online means giving something specific to someone else via the internet and 'posting' online means placing information on the internet.</p> |
| Year 2 | <p>What is a computer?</p> <p>To know the difference between a desktop and laptop computer.</p> <p>To know that people control technology.</p> <p>To know that buttons are a form of input that give a computer an instruction about what to do (output).</p> <p>To know that computers often work together.</p> | <p>Algorithms and debugging Scratch Jr</p> <p>To understand what machine learning is and how that enables computers to make predictions.</p> <p>To know that abstraction is the removing of unnecessary detail to help solve a problem.</p> <p>To know that coding is writing in a special language so that the</p> | N/A | <p>International Space Station</p> <p>To understand that you can enter simple data into a spreadsheet.</p> <p>To understand what steps you need to take to create an algorithm.</p> <p>To know what data to use to answer certain questions.</p> <p>To know that computers can be used to monitor supplies.</p> | <p>Online safety Y2</p> <p>To understand the difference between online and offline.</p> <p>To understand what information I should not post online.</p> <p>To know what the techniques are for creating a strong password.</p> <p>To know that you should ask permission from others before sharing</p> |

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| | | <p>computer understands what to do.</p> <p>To understand that the character in ScratchJr is controlled by the programming blocks.</p> <p>To know that you can write a program to create a musical instrument or tell a joke.</p> | | | <p>about them online and that they have the right to say 'no.'</p> <p>To understand that not everything I see or read online is true.</p> |
| Year 3 | <p>Networks</p> <p>Journey inside a computer</p> <p>To know what a tablet is and how it is different from a laptop/desktop computer.</p> <p>To understand what a network is and how a school network might be organised.</p> <p>To know how the internet uses networks to share files.</p> <p>To know what a packet is and why it is important for website data transfer.</p> <p>To know the roles that inputs and outputs play on computers.</p> <p>To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together.</p> | <p>Scratch</p> <p>To know that Scratch is a programming language and some of its basic functions.</p> <p>To understand how to use loops to improve programming.</p> <p>To understand how decomposition is used in programming.</p> <p>To understand that you can remix and adapt existing code.</p> | <p>Video trailers</p> <p>To know that different types of camera shots can make my photos or videos look more effective.</p> <p>To know that I can edit photos and videos using film editing software.</p> <p>To understand that I can add transitions and text to my video.</p> | N/A | <p>Online safety Y3</p> <p>To know that not everything on the internet is true: people share facts, beliefs and opinions online.</p> <p>To understand that the internet can affect your moods and feelings.</p> <p>To know that privacy settings limit who can access your important personal information Information, such as your name, age, gender etc.</p> <p>To know what social media is and that age restrictions apply.</p> |
| Year 4 | <p>Collaborative learning</p> <p>To understand that software can be used</p> | <p>Further coding with Scratch</p> <p>Computational thinking</p> | N/A | <p>Investigating weather</p> <p>To know that computers can use different forms of input to sense the world</p> | <p>Online safety Y4</p> <p>To understand some of the methods used to</p> |

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| | <p>collaboratively online to work as a team.</p> <p>To know that you can use images, text, transitions and animation in presentation slides.</p> | <p>To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch.</p> <p>To know what a conditional statement is in programming.</p> <p>To understand that pattern recognition means identifying patterns to help them work out how the code works.</p> <p>To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.</p> | | <p>around them so that they can record and respond to data. This is called 'sensor data'.</p> <p>To know that a weather machine is an automated machine that responds to sensor data.</p> <p>To understand that weather forecasters use specific language, expression and pre-prepared scripts to help create weather forecast films.</p> | <p>encourage people to buy things online.</p> <p>To understand that technology can be designed to act like or impersonate living things.</p> <p>To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent using technology.</p> <p>To understand what behaviours are appropriate in order to stay safe and be respectful online.</p> |
| Year 5 | <p>Search engines</p> <p>To know how search engines work.</p> <p>To understand that anyone can create a website and therefore we should take steps to check the validity of websites.</p> <p>To understand what copyright is.</p> <p>To know the difference between ROM and RAM.</p> | <p>Programming music</p> <p>To know that a soundtrack is music for a film/video and that one way of composing these is on programming software.</p> <p>To understand that using loops can make the process of writing music simpler and more effective.</p> | <p>Stop motion animation</p> <p>To understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph.</p> <p>To know that decomposition of an idea is important when creating stop-motion animations.</p> <p>To know that editing is an important feature of making and improving a stop motion animation.</p> | <p>Mars Rover 1</p> <p>To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock.</p> <p>To know what numbers using binary code look like and be able to identify how messages can be sent in this format. To know what simple operations can be used to calculate bit patterns.</p> | <p>Online safety Y5</p> <p>To know different ways we can communicate online.</p> <p>To understand how online information can be used to form judgements.</p> <p>To understand some ways to deal with online bullying.</p> <p>To know that apps require permission to access private information and that you can alter the permissions.</p> <p>To know where I can go for support if I am being bullied online or feel that</p> |

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| | | | | | my health is being affected by time online. |
| Year 6 | <p>Bletchley Park To understand the importance of having a secure password and what "brute force hacking" is. To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2.</p> | <p>Intro to Python To know that there are text-based programming languages such as Logo and Python. To know that nested loops are loops inside of loops.</p> | History of computers | <p>Big data 1 To know that data contained within barcodes and QR codes can be used by computers. To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. To know that data is often encrypted so that even if it is stolen it is not useful to the thief.</p> | <p>Online safety Y6 To know that a 'digital footprint' means the information that exists on the internet as a result of a person's online activity. To know what steps are required to capture bullying content as evidence. To understand that it is important to manage personal passwords effectively. To understand what it means to have a positive online reputation. To know some common online scams.</p> |