



Curriculum Map Subject: Computing



Intent Statement

At St Nicholas Catholic Primary School it is our intent to deliver a broad and balanced computing curriculum that is ambitious, challenging and engaging. We aim to prepare our learners, including those who are disadvantaged and pupils with SEND, for future learning and employment by giving them the opportunities to cumulatively gain knowledge and develop skills that will equip them for an ever changing digital world. Knowledge and understanding of ICT is of increasing importance for children's future both at home and for employment. Our Computing curriculum focuses on a progression of skills in digital literacy, computer science, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology. These strands are revisited repeatedly through a range of themes during children's time in school to ensure the learning is embedded and skills are successfully developed. Our intention is that Computing supports children's creativity and cross curricular learning to engage children and enrich their experiences in school.

<https://www.twinkl.co.uk/resource/deep-dive-into-computing-whole-school-progression-map-t-i-133>

Implementation - curriculum coverage

| Year group | |
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| Reception | In the EYFS computing is not taught as a stand alone subject as just like pens and pencils it should just form part of the overall education in EYFS. Using cameras, Sound/ voice recorders, Ipads, computers and programs on the IWB should encourage children to be aware that technology is part of the world they live in. Screen-based technology is used in more active, creative, and collaborative ways that encourage communication. Children work together to tell a story or recount an event using the interactive whiteboard software or an ipad. These tools allow children to combine text, sounds and images in their own ways to express their ideas. Cameras can allow children to create an image of a moment and to |

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| | express an idea long before they can read or write. Sound recording devices are used to capture ideas or concepts. |
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| Year group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| Year 1 | <p>Computer Skills Children will learn the basic computer skills that they will need in order to be able to use a desktop or laptop computer. Children will learn how to use a computer mouse or a trackpad and how to switch on and shut down a computer. They will apply their mouse or trackpad skills by launching applications, manipulating windows and opening and saving files and</p> | <p>Online Safety Children learn basic online safety and digital literacy skills. In this unit, children learn about the potential dangers in the online world and what basic steps we all need to take in order to have positive digital experiences. Children learn about using a search engine safely to find pictures. Children learn the SMART rules and look at what information should be kept safe when using the Internet.</p> | <p>Using and Applying Children are given the opportunity to reinforce skills taught throughout the year. Children are given the opportunity to use their skills in a new context and apply them with the software they are familiar with, in order to reinforce their learning. The lessons focus primarily on the three units of Computer Skills, Word Processing and Painting</p> | <p>Word Programming Skills Children learn typing and word processing skills. Children will learn how to type with two hands, use the shift, space and enter key properly, and edit work by using the backspace, delete and arrow keys. Children will then go on to learn how to use undo and redo and to select and format text.</p> | <p>Painting Children will be introduced to painting skills in a painting application on a computer or tablet device. Children will use a simple painting program to paint with different colours and brushes, create shapes, fill areas, undo and redo and add text.</p> | <p>.Programming Toys Children are introduced to the principles of programming through unplugged tasks and the use of Bee-Bots. They will be introduced to algorithms as a set of step-by-step instructions given to a device, will learn how to debug simple algorithms and how to use logical reasoning to predict how a program will behave.</p> |

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| | <p>folders. The children will then practise their clicking skills and learn how to drag objects, either using a mouse or trackpad.</p> | <p>Children explore the positives and potential negatives of online communication, such as email, and children will develop the skills to recognise potential dangers and act accordingly to keep themselves and others safe.</p> | | | | |
| <p><u>Key objectives (Pupils must know and remember theses facts / Improve, hone & apply these skills)</u></p> <ul style="list-style-type: none"> ★ Do they know that personal information should not be shared online and can they act if they find something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc.) ★ Can they create a simple series of instructions and begin to plan and test their instructions? ★ Can they create original content using digital technology and know how to save and retrieve it? ★ Do they recognise the different forms of digital communication (e.g. emails address, twitter handle etc.) and understand the appropriate vocabulary? ★ Can they develop awareness and use of keyboard layout and use navigation skills appropriately? (e.g. backspace) | | | | | | |

| Year group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| Year 2 | <p>Computer Art This 'Computer Children will have the opportunity to learn about reproducing the painting styles of great artists using computer programs. The children will use this as inspiration for mastering specific techniques within design-based software. Children will have the opportunity to use a mixture of the styles and skills learnt within this topic to produce their own computer-paint</p> | <p>Algorithms Children learn how to create and debug algorithms. Children use the basic commands in Logo to move and draw using the turtle on screen, and then further develop algorithms using the "repeat" command. These skills are then developed by teaching children to create algorithms in Scratch using a selection of blocks.</p> | <p>Online Safety Children learn about how what they do online leaves a trail called a digital footprint. They will look at how to improve the efficiency of their online searches, the types of websites that are best for children to access when looking for information, as well as how to identify inappropriate content and the actions they should take if they do. Children will be introduced to the term 'cyberbullying'</p> | <p>Presentation Skills Children focus on important computer skills needed for safe and effective computer use and introduce some further skills concerning the use of folders, searching for files and printing. Children are introduced to presentations and teach the skills needed to create a simple presentation.</p> | <p>Using the internet Children learn to use the internet safely and with a purpose. Children are shown how to search the Internet using one word; how to make sense of the returned results; how to use "for kids" to return more suitable results; how to follow links and return to the search results. Children are encouraged to use a range of search engines, including Google, Bing and Yahoo, and some more child-friendly</p> | <p>Using and Applying Children get an opportunity to reinforces skills taught throughout the year and link them together with a common theme. Children are given the opportunity to use their skills in a new context and apply them within software they are familiar with in order to complete a final project.</p> |

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| | ed masterpiece! | | and look at how they should communicate online and deal with instances of people being unkind via digital means. | | engines like Kidrex. The children then learn to blog safely and responsibly. | |
| <p><u>Key objectives (Pupils must know and remember these facts / Improve, hone & apply these skills)</u></p> <ul style="list-style-type: none"> ★ Can they appreciate that some algorithms are more efficient than others and use methods of efficiency to test these? (e.g. most efficient method to enable a sprite to move left and right along the x axis or up and down along the y axis). ★ Can they use digital technology to create, organise and edit a range of content for a specific purpose using an appropriate app? ★ Can they consider how text is presented and formatted and adapt this to suit the purpose of a document? ★ Can they communicate safely online (e.g. appropriate communication?) ★ Can they create, edit and format text (insert/delete words, use bold/italics/underline)? | | | | | | |

| Year group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| Year 3 | <p>Drawing and Desktop Children develop their graphic and presentation skills by introducing drawing as opposed to painting. It also goes on to</p> | <p>Internet Research and Communication Children learn how to effectively search using keywords and how to safely communicate online. The</p> | <p>Online Safety Children are introduced to email and other forms of online communication. They will look at how to write and send emails, as well as how to decide if an</p> | <p>Presentation Skills This unit develops children's use of presentation software. Children learn new skills, following on from previous</p> | <p>Programming Turtle Logo and Scratch Children learn to create and debug algorithms. The children use the basic commands in Logo to move and draw using</p> | <p>Using and Applying Children are given an engaging, open-ended project for to apply the skills they have developed. Children working</p> |

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| | <p>further children's understanding of layouts using a desktop publishing application. Children will learn to draw, order, group and manipulate objects to make a picture. They will also learn to evaluate and create effective layouts, combining text and images</p> | <p>lessons focused on Internet research will demonstrate the importance of word order when searching. They will also start to examine the results returned and how to distinguish between a reliable and unreliable website or webpage. Children will learn to save webpages in a browser, as well as in a file or folder. They will also understand how this can be shared with others. Children will identify ways of communicating online, how they can keep safe and the importance of being responsible</p> | <p>email is safe to open. They will build on their existing knowledge of cyberbullying and how to deal with unkind behaviour online. The use and importance of privacy settings is introduced and children will discuss the types of information we should not share online. They will build on the idea of a digital footprint by thinking about how the adverts they see online are targeted at them. Children will finish the unit by using the knowledge they have gained to plan a party using online communication methods.</p> | <p>skills learnt; setting the theme, slide transitions, animating objects onto the slide, creating hyperlinks in the action settings and adding audio and video.</p> | <p>the turtle on screen, and then further develop algorithms using the "repeat" command. These skills are then developed to create algorithms in Scratch using a selection of blocks.</p> | <p>in groups, the project incorporates software, skills and aims that have been covered in previous units. Pupils should be encouraged to plan activities thoroughly before dividing up the separate tasks required to complete the whole project. Different elements of the project can be completed by different children, who will combine their work at the end, but must communicate and work together as a team throughout. Children have an opportunity for to present their finished projects.</p> |
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| | | while communicating online with others. | | | | |
| <p><u>Key objectives (Pupils must know and remember these facts / Improve, hone & apply these skills)</u></p> <ul style="list-style-type: none"> ★ Can they understand the importance of clear and precise instructions and can they use algorithms to control movement? ★ Do they understand the need for caution when using an internet search for images? ★ Can they use ICT to organise and present their work? ★ Can they recognise that cyber bullying is unacceptable and will be sanctioned in line with the school's policy? ★ Can they recognise the importance of ICT in the real world? | | | | | | |

| Year group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| Year 4 | <p>Scratch: Questions and Quizzes</p> <p>Children write quizzes by combining questions. Children learn the wider programming skills of solving problems, testing, debugging,</p> | <p>Word Processing</p> <p>Children develop their word processing and text formatting skills. Children will learn about formatting images and organising content into and effective</p> | <p>Programming Turtle Logo</p> <p>Children learn how to create an algorithm to program a procedure. Children are reminded of the basic commands and how to repeat alongside a variable. The</p> | <p>Animation</p> <p>Children learn the basic principles and techniques of simple animation. Beginning with the history of animation, children research some of the early animation</p> | <p>Using and Applying Skills</p> <p>Children are given an engaging, open-ended project for pupils to apply the skills they have developed by working on other units within the year</p> | <p>Online Safety</p> <p>Children learn about preventing and dealing with cyberbullying; how to use search engines efficiently; how to avoid plagiarism online; and how to be a good digital citizen.</p> |

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| | <p>improving and evaluating.</p> | <p>layout.. Children will learn new skills and techniques and apply them to creating a range of different word documents (posters, letters to parents, job rotas, recipe cards and e-vouchers) which they will use during the cake sale project.</p> | <p>children are then shown how to program their own procedures, use colour and set the position of the turtle using coordinates. In the concluding lesson they use the arc command to create patterns using different shapes and randomly selected colours.</p> | <p>techniques used before the use of computers. The lessons then compare a range of free animation software and children incorporate the different techniques into their own animation. After experimenting, children are then given the opportunity to evaluate their experiences in the final lesson.</p> | <p>group. Children work in groups, the project incorporates software, skills and aims that have been covered in previous units. Pupils plan activities thoroughly before dividing up the separate tasks required to complete the whole project. Different elements of the project can be completed by different children, who will combine their work at the end, but must communicate and work together as a team</p> | <p>The unit ends with children applying their new knowledge to design a character to be displayed around school to promote online safety</p> |
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| | | | | | throughout. | |
| <p><u>Key objectives (Pupils must know and remember these facts / Improve, hone & apply these skills)</u></p> <ul style="list-style-type: none"> ★ Can they design and create content on a computer in response to a given goal, paying attention to the needs of a known audience? ★ Can they give reasons for errors in programs and explain how they have corrected these through decomposition and debugging? ★ Can they explain an algorithm using sequence, repetition and selection in their own words? ★ Do they recognise the difference between the work of others which has been copied (plagiarism) and restructuring and re-presenting materials in ways which are unique and new? ★ Can they navigate using an internet browser (e.g. use tabbed browsing to open two or more web pages at the same time, open a link to a new window)? | | | | | | |

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| Year 5 | <p>Flowol Children are introduced to flowcharts and how they are used to program and control devices. Children are taught to build sequences of instructions, control multiple outputs and structure algorithms with decisions and</p> | <p>Radio Station Children are introduced to software and digital devices for recording sound. Based around the theme of a Radio Station, children are offered a creative approach including interviewing, making adverts</p> | <p>3D Modelling: SketchUp Children extend their drawing skills to create 3D models based on using the software SketchUp. Children will learn how to create simple and complex 3D models. They will be able to add detail and</p> | <p>Online Safety Children will learn about email safety with a focus on preventing and dealing with spam. They will consider the importance of strong passwords and learn how to create them. Children will build on their</p> | <p>Using and applying Children are given an engaging open-ended project to apply the skills they have developed by working on other units within the year group. Children work in groups on the project which</p> | <p>Scratch 3.0 Developing Games This unit builds on the previous unit in Year 4 (Questions and Quizzes) using Scratch to build and edit algorithms for simple games. The unit is designed to help children develop their skills in</p> |

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| | <p>inputs. Although many external hardware interfaces can be attached and linked to a computer using Flowol, this unit is designed as an introduction to the software and the concepts of flowchart.</p> | <p>and using jingles. Children write scripts and design additional advertising for their Radio Station. Opportunities are included for children to present, listen, review and evaluate their own content as well as professional and commercial examples, plus those created by their peers.</p> | <p>manipulate 3D models using a variety of tools.</p> | <p>knowledge of plagiarism and fair use of people's work by learning how to write citations and references for websites they may use. They will scrutinise photographs that they see online and learn how easy it is to manipulate pictures and present them as reality.</p> | <p>incorporates software, skills and aims that have been covered in previous units.</p> | <p>writing their own algorithms as well as editing and debugging existing codes.</p> |
| <p><u>Key objectives (Pupils must know and remember theses facts / Improve, hone & apply these skills)</u></p> <ul style="list-style-type: none"> ★ Can they create a multimedia project that contains an appropriately selected range of media? (e.g. audio, video clips) ★ Can they save an image using a range of commands? (e.g. 'control' and 'save image as' or 'drag and drop to 'downloads' folder) ★ Can evaluate content according to its effectiveness and impact on a target audience? ★ Can they write programs that have sequences, repetitions and variables? (e.g. creating a scoring system as part of a Scratch game) ★ Do they consider audience when editing media and justify their choices? | | | | | | |

| Year group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| <p>Year 6</p> | <p>Spreadsheets Children are given an understanding of spreadsheets and how they can be used. Different spreadsheet templates are provided in which children learn skills in formatting and entering specific formulas. Children investigate skills in using the spreadsheet to solve specific problems. Examples include number calculations, sports league tables, test scores, and budget planning.</p> | <p>Kodu Programming Children are introduced to programming with Kodu, a simple visual programming language made specifically for creating games. The distinguishing features of Kodu are visual icons that are added together like building blocks to form instructions and game environments constructed by the user in a 3D scene editor.</p> | <p>Film Making Children explore various aspects of film-making. In doing so, they must choose and use appropriate software in order to complete tasks such as writing a script, researching information, filming and editing. As well as using digital devices for recording (video camera or tablet), children work through pre- and post-production stages, planning good-quality interviews for a documentary and completing the process with use of video editing software such as Windows Movie Maker.</p> | <p>Using and Applying Children are given an engaging open-ended project to apply the skills they have developed by working on other units within the year group. Children work in groups on the project which incorporates software, skills and aims that have been covered in previous units.</p> | <p>Online Safety Children take a more in depth look at a variety of online safety issues, most of which they will have been familiarized with in previous years. They will be introduced to the idea of the internet, as a type of media, and how it can shape our ideas about boys and girls through stereotypes. Children will be given ways to deal with online content that they find worrying or even believe to be dangerous</p> | <p>Scratch:Animated Stories Children continue to develop their skills in writing their own algorithms as well as editing and debugging existing codes. New skills are introduced to structure code and animate characters and scenes, gradually building to create a short animated story.</p> |

Key objectives (Pupils must know and remember these facts / Improve, hone & apply these skills)

- ★ Can they incorporate images within a document or project where appropriate, using the most effective text wrapping formats within documents? (e.g. selecting 'wrap to text' or layering images in the Photoshop app)
- ★ Can they compare the information provided on two tabbed websites looking for bias and perspective? (e.g. evaluating the source of content, reliability and credibility of content, sharing information on secure and encrypted websites)
- ★
- ★ Can they apply a range of logical and computational thinking to program robotics and simulate this using an appropriate?