St Joseph's Catholic Primary School
Computing - Progression in Skills

Information Technology								
	Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Design, Create, Manage and Manipulate Digital Content			Create a range of digital assets (resources) such as presentations, movies, books and animations. Create online content such as images, forum posts or blog entries safely. Create digital assets using more than one piece of software. Save and store work in an appropriate area, and be able to print, retrieve and amend it. Begin to add different forms of media together e.g. text and images in blogs or word processing documents. Organise and name files appropriately and accurately.		Use a range of software and internet services to create digital assets (resources) for a specific purpose. Combine and use various software tools to complete a project, problem or task. Use a range of computer devices to accomplish specific tasks. Create a range of digital assets such as presentations, comics, movies, programs, animations, apps and webpages, with increasing independence. Recognise the intended audience and suggest improvements to make their work more relevant to that audience. Through self and peer assessment, analyse and evaluate presentations and projects so that suitable improvements can be added to work		Select, use and combine internet services and other software to create a range digital 'content' (inc. programs and systems) such as movies, animations, presentations, games, apps, webpages etc ... Demonstrate awareness of intended audience in work. Independently select the most appropriate ICT tools (hardware and software) for intended purpose and audience. Routinely evaluate and improve work as part of the design process. Use a range of digital devices to produce digital 'content'.	
Creating digital resources - Text and images			On a range of devices: - Develop correct use of the keyboard (e.g. spacebar, backspace, delete, shift (not caps lock) and enter keys). - Add captions to photos and graphics. - Select text appropriately e.g. highlighting or clicking text to select. - Make simple changes to text e.g. colour, style and size.					

			- Select text from word lists (if necessary). - Select appropriate images to add to work. - Word process short texts directly onto the computer (i.e. do not just copy up handwritten work). - Navigate round text in a variety of ways e.g. mouse, arrow keys, touch, when editing work. Use a range of digital devices to capture and save both still and moving images. These could include digital cameras, video cameras, tablets, Refine the use of shape, line and colour to communicate a specific idea or artistic style/effect through various tools including brushes, pens, lines, flood fill, spray and stamps. Talk about their use of graphics package and their choice of tools. Begin to make changes to images e.g. cropping using basic tools in image manipulation software. Upload images or video from cameras and other digital devices to a computer, or into a document, with support if needed. Create a sequence of images to form a short animation. Change the content of a project for a specific audience.		
Sound			Explore a range of electronic music and sound devices and software.	Use a variety of devices and software to select, playback and record voice and other sounds.	Independently select and use a variety of devices to record musical and non-musical sounds.

			Be able to listen to and to select a sound from a bank of pre-recorded sounds. Use sound recorders, both at and away from the computer, to record and playback sounds e.g. voices, instruments, environmental sounds. Use software to explore and create sound and musical phrases for a purpose. Use basic editing tools to change recorded sounds (speed up, slow down, reverse, echo) to alter the mood or atmosphere Use recorded sound files in other software applications. Be able to save sound files. Be able to share recordings with a known audience.	Locate and use sound files from online sources. e.g. Audio Networks, and other multimedia resources. Select, import and edit existing sound files in sound editing software, e.g., Audacity. Use editing tools to refine and improve outcomes and performances. Use recorded sound files in other software applications. Be able to share sound recordings with a wider audience. Use music software to experiment with capturing, repeating and sequencing sound patterns. Use ICT to create and perform sounds or music that would otherwise not be possible in a live situation, e.g., editing a multi-part piece.	Independently select, edit, manipulate and combine sound files from a range of sources to create a composition which could be broadcast for a specific purpose and audience, e.g. a soundbyte, radio show or podcast. Upload and download projects to other devices and online space e.g. VLE, blog or website, collaborating and communicating with audiences in locations beyond school. Create their own sounds and compositions to add to presentations, animations and films. Use ICT to produce music or sound effects for a specific purpose, considering the impact on the audience, e.g. length, style, genre.
Data Handling			Develop classification skills by carrying out sorting activities Use simple graphing software to produce pictograms and other basic tables, charts or graphs. Use graphing software to enter data and change a graph type, e.g. pictogram to bar chart. Interpret the graphs, discuss the information contained and answer simple questions. Sort and classify a group of items by asking simple yes / no questions. This	Create frequency diagrams and graphs to answer questions. Create and use a branching database to organise and analyse information to answer questions. Begin to identify what data should be collected to answer a specific question. Create tables or forms and collect data and enter it into a database under appropriate field headings. Use a database to answer straightforward questions by	Construct, refine and interpret different types of chart. Discuss how IT enables you to search and sift through large amounts of different types of information and describe the advantages of using the tools Design questions and perform complex searches using key words, to search a large pre-prepared database looking for relationships and patterns, e.g. data on the Internet; census data.

			may take place away from the computer, e.g. a 'Guess Who' game. Use a branching database program to sort and identify items. Use basic search tools in a prepared database to answer simple questions.	searching, matching and ordering the contents of a single field. Based on the data collected, children should raise their own questions and translate them into search criteria that can be used to find answers to specific questions. Compare different charts and graphs, e.g., in tables, frequency diagrams, pictograms, bar charts, databases or spreadsheets and understand that different ones are used for different purposes. Select and use the most appropriate method to organise and present data.	Check the reliability of the data; identify and correct inaccuracies. Solve complex enquiries involving selecting, processing and presenting data; drawing conclusions, e.g. is there a relationship between minibeast habitat and diet? Design a data capture form, e.g. a questionnaire or table to collect information to answer a specific question. Search data according to more than one criterion. Present data to a specified audience and display findings in other software, e.g. through presentation software. Compare different charts and graphs, e.g., in tables, frequency diagrams, pictograms, bar charts, databases or spreadsheets and understand that different ones are used for different purposes. Select and use the most appropriate method to organise present, analyse, interpret and evaluate data.
Digital Research			Locate specific, teacher defined, age appropriate websites through a favourites menu and /or by typing a website address (URL) into the address bar in a web browser. Use technology to source, generate and amend ideas e.g. searching a suitable resource for images by a specific artist.	Use a range of child friendly search engines to locate different media, e.g. text, images or sound. Evaluate different search engines and explain their choices in using these for different purposes. Develop specific key questions and key words to search for information e.g., a question such as 'Where could we go	Choose to use the internet when appropriate as a tool for independent research, e.g., gathering text, images, videos and sound as resources to use in their own work. Use more advanced searching techniques using a range of search operators (e.g. advanced search, Boolean and relational operators).

			Talk about their use of technology and other ways of finding information, e.g. books, asking other people. Use and explore appropriate buttons, arrows, menus and hyperlinks to navigate teacher selected web sites, and other sources of stored information. Use key words to search a specific age-appropriate resource for information, under the guidance and supervision of an adult. Be able to retrieve files from a computer using a search of the computer.	on holiday?' would become a search for 'holiday destinations'. Consider the effectiveness of key questions on search results and refine where necessary. Use strategies to verify the accuracy and reliability of information, distinguishing between fact and opinion, e.g. cross checking with different websites or books. Use appropriate tools to save and retrieve accessed information, e.g. through the use of favourites, history, copy/paste and save as. Identify and cancel unwanted advertising, pop-ups and potentially malicious downloads by using the task manager function and NOT through buttons on the pop-up window, or the cross in the right hand corner. Know how to temporarily allow useful pop-ups from a website. Choose the most appropriate search engine for a task, e.g., image search, search within a specific site or searching the wider internet. Start to develop the use of search operators (e.g. Boolean operators) in searches. Develop use of more advanced searching techniques, e.g., searching for a phrase using quotation marks to locate precise information.	Choose the most appropriate search engine for a task, e.g., image search, search within a specific site or searching the wider internet. Use search tools to sort information according to their copyright or the size (e.g. images). Be able to create and use folders within lists of book-marks or favourites to organise content. Apply their knowledge of what to do and who to tell if they discover something inappropriate or offensive on a website, at home and in school. Use and develop strategies to evaluate different search engines. Use several optional features (e.g. size, copyright, file type) of search engines. to refine searches further

				Use features of search engines such as size and colour options	
Texts and Images (and Movies – Upper KS2)				Use different font sizes, colours and effects to communicate meaning for a given audience. Use various layouts, formatting, graphics and illustrations for different purposes or audiences. Use page setup to select different page sizes and orientations. Use cut, copy and paste to refine and re-order content. Use appropriate editing tools to ensure their work is clear and error free, e.g. spell checker, thesaurus, find and replace. Select and import sounds from other sources, e.g. own recordings, sound effects and music. Select and import graphics from digital cameras, graphics packages and other sources and prepare for use, e.g. cropping, resizing and editing. Use and combine internet services such as those that provide images, sounds, 3D representations and graphic software. Recognise and use key layout and design features, e.g., text boxes, columns and borders. Insert and edit simple tables.	Develop and use criteria to evaluate design and layout of a range of resources including web sites, pages on VLE, online resources and presentations. Evaluate design and layout of a range of resources including web sites, pages on VLE, online resources and presentations. Select suitable text, sounds and graphics from other electronic sources, and import into own work. Create an outline plan for a non-linear presentation; producing a diagram to demonstrate understanding how pages link and the need for clarity. Develop the use of hyperlinks to produce more effective, interactive, non-linear presentations. Use of hyperlinks to produce more effective, interactive, non-linear presentations. Develop consistency across a document - same style of font, colour, body text size, etc. Make effective use of transitions and animations in presentations. Consider their appropriateness and overall effect on the audience. Independently select process and import images, video and sounds from a variety of sources to enhance work.

				Create a range of hyperlinks and produce a non-linear, interactive presentation.	Format and edit work to improve clarity and purpose using a range of tools, e.g. cut and paste, justify, tabs, insert and replace. Through peer and self assessment, evaluate presentations and make improvements. Make use of transitions and special effects in video editing software, understanding the effect on the audience. Export images, presentations and movies in formats appropriate for the purpose and use them in multimedia presentations. Plan and create a short animated sequence to communicate a specific idea, using a storyboard and timeline. Design and create a short animated sequence.
Images, video and animation – graphics (drawing and painting)				Acquire, store and retrieve images from cameras, scanners and the internet for a purpose. Select specific areas of an image, copy and paste to make repeating patterns. Be able to resize various elements in a graphics or paint package. Use various tools in paint packages or photomanipulation software to edit/change an image, e.g. applying different special effects.	

				Use the 'print screen' function to capture images. Explore the use of graphics and paint packages to design and plan an idea.	
Images, video and animation – digital photographs, video and animation				Use a range of devices to capture still and moving images for a purpose. These could include digital cameras, video cameras, iPads, microscopes and webcams. Discuss and evaluate the quality of their own and others' captured images and make decisions whether to keep, delete or change them. Independently download and save images and video onto a computer. Independently upload images and movies from digital cameras and other devices to a computer and save in a relevant location. Be able to 'resize' images (pixels, resolution, aspect ratio and dimensions). Be able to use basic tools in a software package to change images according to purpose. Import music, stills or video into video editing software for a specific project. Arrange, trim and cut clips to create a short film that conveys meaning. Add simple titles, credits and special effects, e.g .transitions.	

				Storyboard, then use captured images to create a short animated sequence which communicates a specific idea.	
Digital Literacy					
Online Safety			Use technology safely. Keep personal information safe. Use technology respectfully. Recognise situations involving content and contact that are not safe, (e.g. In emails, text messages, videos) and know where to go for help. Minimise screen, turn off the monitor, or use back buttons to return to the home page if anything inappropriate appears on the screen.	Use technology responsibly. Keep passwords and personal data safe. Be able to identify issues with posting personal information online. Recognise acceptable behaviour. Recognise unacceptable behaviour. Be able to create a 'secure' password, e.g. combination of letters, symbols and numbers in accordance with the school's online safety policies and procedures /AUP. Know what to do and who to tell if they discover something inappropriate or offensive on a website, at home and in school. Recognise how to find the terms and conditions on websites and the importance of reading them. Begin to develop strategies to evaluate the reliability of information on websites.	Locate and respond appropriately to the terms and conditions on websites. Identify unsuitable posts (e.g. on blogs, a forum …) pertaining to content and conduct. Identify inappropriate and unacceptable behaviour when analysing resources such as videos, text-based scenarios and electronic communications. Continue to develop the skills to identify risks involved with contact, content and their own conduct whilst online. Use electronic communication and collaboration tools safely. Develop strategies to check and evaluate digital footprints.
Use of technology			Use a range of computer devices and technologies such as bar codes, QR codes and augmented reality.		
Electronic communication			Contribute ideas to class and group emails.	Use a range of digital tools to communicate and collaborate, e.g. contributing to chats and/or discussion	Independently, and with regard for online safety, select and use appropriate communication tools to

			Send an email, using a subject heading, to a known member of the school community e.g. another class teacher, bursar. Open and reply to an email from a known person. Contribute to a blog, journal or forum safely. Develop an awareness of appropriate language to use when communicating online by email, blogs, wikis or app-based systems. Begin to use webcams and /or video conferencing as a class, if appropriate and available, with external providers, another class or school. Talk openly about their use of online communication in school and at home.	forums, in school's VLE, blog or text messages, making purposeful contributions to respond to another pupil's question or comment. Investigate the different styles of language, layout and format of different electronic communications and how these vary depending on the audience. Continue to use webcams and /or video conferencing as a class, if appropriate and available, e.g. with external providers, another class or school, or abroad as part of a wider topic. Begin to publish their work to a wider audience, e.g. using VLE, websites or podcasting tools.	solve problems by collaborating and communicating with others within and beyond school, e.g., email, discussion forums, blogs, wikis, text messages and other digital communication tools. Make use of webcams and /or video conferencing, if appropriate and available, e.g., to exchange ideas and collaborate on projects with external providers, another class or school, or abroad. Extend online publishing to a more global audience, e.g. creating and publishing web pages, blogs and podcasting. Evaluate the effectiveness of a variety of digital communication tools for communicating and collaborating.
Digital Research					Use strategies to verify the accuracy and reliability of information, distinguishing between fact and opinion, e.g. cross checking with different websites or books. Identify whether a file has copyright restrictions and can be legally downloaded from the internet then used in their own work. Use appropriate strategies for finding, critically evaluating, validating and verifying information, e.g., using different keywords, skim-reading to check relevance of information, cross checking with different websites or other non ICT resources.

					Distinguish between fact and opinion and make informed choices about the sources of online information used to inform their work. Apply their knowledge of the meaning of domain names and common website extensions, e.g., .co.uk, .com, .ac, .sch .org, .gov, .net, to support the validation process. Develop skills to question where web content might originate from and understand that this gives clues to its authenticity and reliability, e.g., by looking at web address, author, contact us sections, linked pages. Use acquired search skills to question where web content might originate from and understand that this gives clues to its authenticity and reliability, e.g., by looking at web address, author, contact us sections, linked pages. Identify how copyright restrictions can affect how a file can be used in their own work, e.g., those produced under Creative Commons Licensing.
Computer science					
Programming			Give and follow commands (one at a time) to navigate other children and programmable toys around a course or a familiar journey, including straight and turning movements. Plan, generate and follow a sequence of instructions (actual and on-screen) to make something happen; or complete a given task or problem to create a simple program.	Write programs that accomplish specific goals. Read what a sequence in a program does. Work with various forms of input. Work with problems involving the binary system. Work with various forms of output.	Use repetition* and selection* in programs. Use variables* in programs. Design and create programs using decomposition. Design programs to accomplish specific tasks or goals.

			Explore and create sequences of commands/instructions in a variety of programs/devices. Make predictions and describe the effects when creating programs and controlling devices. Identify errors in instructions. Use logical reasoning to predict what will happen in simple programs. Use computational thinking skills and approaches such as algorithmic thinking.	Use logical reasoning to predict outputs. Design programs, showing skills needed to plan and implement a task/problem that accomplish specific goals. Design programs showing appropriate planning and implementing skills. Create programs that implement algorithms to achieve specific goals. Debug programs that accomplish specific goals through self and peer assessment. Predict what algorithms and programs will do. Use sequence, repetition and selection in programs. Plan, test and evaluate programs that solve specific problems using a screen turtle or other programmable devices. Demonstrate and develop a sense of audience when appropriate. Use and debug programs to control physical devices - Note real or screen simulations could be used. Use logical reasoning to detect and correct errors in programs. Use computational thinking skills and approaches to support the planning, design and the evaluation of projects.	Use logical reasoning to develop systematic strategies that can be used to debug algorithms and programs. Use procedures in programs. Design, test and refine programs to control robots or floor turtles taking account of purpose and needs. Use programming software to create simulations (e.g. to show how the Solar System works). Predict what is happening in complex algorithms and programs. Explain and evaluate the algorithms used in their own and other people's programs. Use and discuss a wide range of inputs and outputs. Use computational thinking skills and approaches (e.g. abstraction, generalisation and decomposition) to support the planning, designing and evaluation of complex tasks and programs.

Simulations and modelling			.Explore the effects of changing variables in models and simulations, asking 'What if?' questions. Create simple simulations using software programs such as Scratch e.g. to simulate a simple circuit.	Explore the effects of changing variables in models and simulations, asking 'What if?' questions. Create simple simulations using software programs such as Scratch e.g. to simulate a simple circuit. Make and test predictions. Use a pre-prepared spreadsheet to record data to answer questions and produce graphs. Use a pre-prepared spreadsheet to explore simple number patterns, e.g. multiples. Change the contents of cells in a pre-prepared spreadsheet and explore the consequences.	Explore the effects of changing variables in models and simulations in order to solve a problem. Create through programming simulations using software tools (e.g. Scratch). Make and test predictions. Enter formulae into a pre-prepared spreadsheet - explore the effects of changing variables. Develop simple spreadsheet models to investigate a real life problem. Create simple spreadsheet models to investigate a real life problem. Identify and enter the correct formulae into cells. Make predictions of the outcome of changing variables.