St Joseph's Catholic Primary School

Computing Long Term Plan

Key

Predominant Areas of Computing		
Information Technology	Computer Science	Digital Literacy

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Early Years	**Safety and Privacy** • Introduce the idea of ownership and privacy. • Recognise when you are not comfortable with something. • Knowing a helping hand of people to get support from. • The idea of saying no to something. • Staying healthy – link to screen time. Being kind to others. **Using Purple Mash with a Login** • Navigate the Purple Mash login page.	**Mouse and Trackpad skills** • Click the mouse. • Navigate using the movement of the mouse. • Dragging and dropping using the mouse. • Improve hand-eye co-ordination. • Improve fine motor skills. • Introduction of laptop trackpad. **Keyboard Skills** • Simple typing • Typing capital letters	**Drawing Skills** • Choosing pens and styles. • Composing drawn images on screen • Use the undo function. • Use the tablet to mark make using touch. **Quizzes** • Know what a quiz is. • Participate in a multiple choice quiz using pictures. • Answer a quiz question by typing. • Participate in a matching quiz.	**Robots** • Structured play with robots. • Follow instructions. • Create instructions • Make predictions. **Technology around us** • Role – play ideas that use technology.	**Sounds** • Use recording tools within purple mash. • Create music using the tools.	**Photography** • Using photos in the classroom. • Upload an image •

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	• Log in using pictures. • Log in using numbers. • Log in using words. • Find and use "My Work Area" • Complete a 2Do.	• Using the function key such as 'enter'. • Match lower case and capital letters. • Recognise different fonts. • Combine mouse skills and typing skills.	• Participate in a sorting and sequencing quiz. • Play a quiz game.			
	Hardware • Introduce parts of a computer. • Say how to look after equipment. • Know basic computer hygiene, including handwashing, being gentle and keeping food and drinks away from devices.					

Year 1	**Online Safety (4)** • To log in safely. • To create an avatar and to understand what this is. • To be able to create a picture and add their own name to it. • To save work to the My Work area and find teacher comments. • To learn how to find saved work in the Online Work area. • To learn how to search Purple Mash to find resources. • To become more familiar with the icons in the Topics section. • To start to add pictures and text to work.	**Grouping & Sorting (2)** • Sorting and changing picture and text. • Name, save and find my work. • Sort items using a range of criteria. • Sort items on the computer using the 'Grouping' activities in Purple Mash.	**Lego Builders (3)** • Algorithm is a set of instructions • Follow and create simple instructions on the computer. • Emphasise the importance of following instructions. • Consider how the order of instructions affects the result.	**Animated Story Books (5)** • To introduce e-books and the 2Create a Story tool. • Name, save and find my work. • Add animation to a picture. • Add a sound effect to a picture. • Add a voice recording to the picture. • Add created music to the picture. • Add a background to the story. • To save the additional changes and overwrite the file. • Use the copy and paste feature to create additional pages.	**Spreadsheets (3)** • Know what a spreadsheet program looks like. • Name, save and find my work. • Be able to enter data into spreadsheet cells. • Locate 2Calculate in Purple Mash. • Use 2Calculate image tools to add clipart to cells. • Use 2Calculate control tools: lock, move cell, speak and count.	**Coding (6)** • Understand what instructions are and predict what might happen when they are followed. • Use code to make a computer program. • Understand what objects and actions are. • Understand what an event is. • Use an event to control an object. • Begin to understand how code executes when a program is run. • Understand what backgrounds and objects are. • Plan and make a computer program. • Sorting and changing sound, picture and text.
	Technology outside school (2) • Say and give examples of	**Pictograms (3)** • Sorting and changing picture and text.	**Maze Explorers (4)** • Algorithms are a set of instructions			

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	technology at home or school. • Keep my login safe. • Save work in a safe place	• Name, save and find my work. • Understand that data can be represented in picture format. • Contribute to a class pictogram. • Use a pictogram to record the results of an experiment.	• Understand the functionality of the direction keys. • Understand how to create and debug a set of instructions (algorithm). • Understand the functionality of the direction keys. • Understand how to change and extend the algorithm list. • Create a longer algorithm for an activity. • Set a challenge for a friend.			• Name, save and find my work.

St Joseph's Catholic Primary School

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2	**Online Safety (3)** • Using search engines safely online. • Share work and communicate electronically using the display boards. • Use digital technology to share work on Purple Mash to communicate and connect with others locally. • Have knowledge and understanding about sharing information globally on the internet. • Introduce Email as a communication tool using 2Respond simulations. • Understand how we talk to others when they are not there in front of us. • To open and send simple online	**Spreadsheets (4)** • Use copying, cutting and pasting shortcuts in 2Calculate. • Use 2Calculate totalling tools. • Use 2Calculate to solve a simple puzzle. • Explore the spreadsheet to add money. • Name, save and find my work. • Use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. • Use 2Calculate to collect data and produce a graph. • To add and edit data in a table layout.	**Making Music (3)** • Make music digitally using 2Sequence. • Explore, edit and combine sounds using 2Sequence. • Edit digital data in music composition. • Edit and refine composed music. • Organise, find, use data and data programs to organise and search information. • Think about how music can be used to express feelings and create tunes which depict feelings. • Upload a sound from a bank of sounds into the Sounds section. • Record and upload environmental sounds into Purple Mash. Use these sounds to create tunes in 2Sequence.	**Questioning(5)** • Name, save and find my work. • Learn about data handling tools that can give more information than pictograms. • Use yes/no questions to separate information. • Construct a binary tree to identify items. • Use 2Question (a binary tree database) to answer questions. • Use a database to answer more complex search questions. • Use the Search tool to find information. • Enter and edit digital data.	**Creating Pictures(5)** • Organise, find, use data and data programs to organise and search. information • Edit digital data. • Name, save and find my work. • Include photos, text and sound in my creations. • Learn the functions of the 2Paint a Picture tool. • Learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). • Recreate Pointillist art and look at the work of pointillist artists such as Seurat. • Learn about the work of Piet Mondrian and recreate the style using the lines template.	**Presenting ideas (4)** • Organise, find, use data and data programs to organise and search information. • Edit digital data. • Name, save and find my work. • Include photos, text and sound in my creations. • Explore how a story can be presented in different ways. • Make a quiz about a story or class topic. • Make a fact file on a non-fiction topic. • Make a presentation to the class.

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	communications in the form of email. • Understand that information put online leaves a digital footprint or trail. • Identify the steps that can be taken to keep personal data and hardware secure.				• Learn about the work of William Morris and recreate the style using the patterns template. • Explore surrealism and eCollage.	
	Coding (5) • Understand what an algorithm is. • Create a computer program using an algorithm. • Create a program using a given design. • Understand the collision detection event. •Understand that algorithms follow a sequence. • Design an algorithm that follows a timed sequence.					**Effective Searching (3)** • Understand the terminology associated with searching. • Gain a better understanding of searching on the Internet. • Create a leaflet to help someone search for information on the Internet. • Using search engines safely online.

	• To understand that different objects have different properties. • To understand what different events do in code. • To understand the function of buttons in a program. • To understand and debug simple programs •Use algorithm to complete a task. •Plan algorithm using codes. •Correct errors in my program. •Identify actions in a program.					• Organise, find, use data and data programs to organise and search information. • Edit digital data.

St Joseph's Catholic Primary School

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	**Online Safety (3)** • Know what makes a safe password. • Learn methods for keeping passwords safe • Understand how the internet can be used to help communicate effectively. • Understand the importance of having a secure password and not sharing it with others. • Understand the negative consequences of not keeping passwords safe and secure. • Understand the importance of keeping safe online and behaving respectfully. • Use communication tools such as 2Email	**Coding (6)** • Design a program using algorithms for a real life problem. • Design an algorithm carefully, thinking about what I want it to do and how I can turn it into code. • Design a program thinking logically about the sequence of steps required. • Understand what a flowchart is and how flowcharts are used in computer programming. • Understand that there are different types of timers and select the right type for purpose. • Understand how to use the repeat command. • Understand the importance of nesting.	**Touch typing (4)** • Use typing terminology. • Understand the correct way to sit at the keyboard. • Learn how to use the home, top and bottom row keys. • Practise typing with the left and right hand.	**Email (6)** • Discuss different methods of communication. • Open and respond to an email using an address book. • Learn how to use email safely. • Explore a simulated email scenario. • Use communication tools such as 2Email respectfully and use good etiquette. • Report unacceptable content and contact online in more than one way to a trusted adult. • Identify different ways that the internet can be used for communication. • Use email such as 2Email to respond to others appropriately and attach files. • Create purposeful (appropriate) content	**Simulations (3)** • Consider what simulations are and understand. • Explore a simulation, make choices and discuss their effects. • Work though and evaluate more complex simulations.	**Presenting (6)** • Understand the uses of PowerPoint. • Create a page in a presentation. • Add media to a presentation. • Add animations to a presentation. • Add timings to a presentation. • Use the skills learnt to design and create an engaging presentation.

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	respectfully and use good etiquette. • Report unacceptable content and contact online in more than one way to a trusted adult. • Understand how a blog can be used to communicate with a wider audience. • Consider the truth of the content of websites. • Learn about the meaning of age restrictions symbols on digital media and devices. • Know what PEGI means and why it exists.	• Design and create an interactive scene.		and attach this to emails.		
		Spreadsheets (3) • Add and edit data in a table layout. • Find out how spreadsheet programs can automatically		**Branching Databases (4)** • Carry out searches to find digital content on a range of online systems, such as within Purple Mash or	**Graphing (2)** • Carry out searches to find digital content on a range of online systems, such as within Purple Mash	

		create graphs from data. • Introduce the 'more than', 'less than' and 'equals' tools. • Introduce the 'spin' tool and show how it can be used to count through times tables. • Introduce the Advanced mode of 2Calculate. • To learn about describing cells using their addresses.		on an internet search engine. • Collect data and input it into software. • Present data and information using different software such as 2Question (branching database tool). • Consider what the most appropriate software to use when given a task by my teacher. • Sort objects using just 'yes' or 'no' questions. • Complete a branching database using 2Question. • Create a branching database of the children's choice.	or on an internet search engine. • Collect data and input it into software. • Present data and information using different software such as 2Graph (graphing tool). • Solve and investigation and present the results in a graph.	

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 4	**Online Safety (4)** •Understanding of the online safety rules we learn at school. •How to use different online technologies safely. •How to use a few different online services safely. •Right to privacy both on and offline. •Recognise that my wellbeing can be affected by how I use technology. •Understand how children can protect themselves from online identity theft. •Understand that information put online leaves a digital footprint or trail and that this can aid identity theft. •Identify the risks and benefits of installing	**Coding: (6)** • Build up from previous vocabulary and knowledge. • To create a simple computer programme. • To begin to understand selection in computer programming. • To understand how an IF statement works. • To understand how to use co-ordinates in a computer. • To the Repeat until command. • To begin to understand selection in computer programmng. • To understand how IF/ELSE statement works.	**Animation (3)** •Share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards. • Discuss what makes a good animated film or cartoon. • Learn how animations are created by hand. • Find out how 2Animate can be created in a similar way using the computer. • Learn about onion skinning in animation. • Add backgrounds and sounds to animations. • Introduced to 'stop motion' animation. • Share animation on the class display board and by blogging. •Work collaboratively to create content and solutions	**Writing for difference Audiences (5)** •Share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards. •Review solutions that others have created, using a checklist of criteria. •Explore how font size and style can affect the impact of a text. • Use a simulated scenario to produce a news report. • Use a simulated scenario to write for a community campaign.	**Making Music (4)** •Can work collaboratively to create content and solutions. • Identify and discuss the main elements of music: Pulse, Rhythm, Tempo, Pitch, Texture. • Understand and experiment with rhythm and tempo. • Create a melodic phrase. • Electronically compose a piece of music.	**Hardware investigations (2)** •Understand the different parts that make up a computer. • Recall the different parts that make up a computer. •Recognise the main component parts of hardware which allow computers to join and form a network. •Understand that network and communication components can be found in many different devices which allow them to join the internet.

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	software including apps. •Understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. •Identify appropriate behaviour when participating or contributing to collaborative online projects for learning. •Identify the positive and negative influences of technology on health and the environment. •Understand the importance of balancing game and screen time with other parts of their lives. •Understand how to report with ease any concerns with content and contact online and know immediate strategies to keep safe.	• To understand what a variable is in programming. • To use a number variable. To create a playable game.				

	Spreadsheets (5) • Format cells as currency, percentage, decimal to different decimal places or fraction. • Use the formula wizard to calculate averages. • Combine tools to make spreadsheet activities such as timed times tables test. • Use a spreadsheet to model a real life situation. • To explore how tools can be combined to use 2Calculate to make number games. • To explore the use of a time, random number and spin button tools. • To use the line graphing tool in 2Calculate with appropriate data. •To read a line graph to estimate values between data readings.	**Logo(4)** •Use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths. • Learn the structure of the coding language of Logo. •Input simple instructions in Logo. • Using 2Logo to create letter shapes. • Use the Repeat function in Logo to create shapes. • Use and build procedures in Logo.	**Effective Searching (3)** •Understand the purpose of a search engine and the main features within it. •Look at information on a webpage and make predictions about the accuracy of information contained within it. •Locate information on the search results page. • Use search effectively to find out information. • Assess whether an information source is true and reliable. • Use the user inputs and output features within my program, such as 'Print to screen'			

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	•To use the currency formatting tool in 2Calculate. •To use 2Calcualte to create a model of a real-life situation. • To use the functions of allocating value to images I 2Calculate to make a resource to teach place value.					

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 5	**Online Safety (4)** •Explain in detail how accurate, safe and reliable the content is on a webpage. •Secure knowledge of online safety rules taught at school. •Gain a greater understanding of the impact that sharing digital content can have. •Demonstrate the safe and respectful use of different online technologies and online services. •Always relate appropriate online behaviour to my right to have personal privacy. •Know how to not let my mental wellbeing or others be affected by use of online	**Coding (5)** •Begin to simplify code. • Create a playable game. • Understand what a simulation is. • Program a simulation using 2Code. • Know what decomposition and abstraction are in computer science. • Take a real-life situation, decompose it and think about the level of abstraction. • Understand how to use friction in code • Begin to understand what a function is and how functions work in code. • Understand what the different variables types are and how they are used differently.	**Spreadsheets (6)** • Use formulae within a spreadsheet to convert measurements of length and distance. • Use the count tool to answer hypotheses about common letters in use. • Use a spreadsheet to model a reallife problem. • Use formulae to calculate area and perimeter of shapes. • Create formulae that use text variables. • Use a spreadsheet to help plan a school cake sale.	**Game Creator (5)** •Introdcuce the 2DIY 3D tool • Plan a game. • Design and create the game environment. • Design and create the game quest. • Finish and share the game. • Self and peer evaluate. •Work collaboratively with others creating solutions to problems using appropriate software.	**3D Modelling (4)** •Use 2Design and Make and the skills of computer aided design. • Explore the effect of moving points when designing. • Design a 3D Model to fit certain criteria. • Refine and print a model.	**Word processing (8)** •Know what a word processing tool is for. • Add and edit images to a word document. • Know how to use word wrap with images and text. • Change the look of text within a document. • To add features to a document to enhance its look and usability. • Use tables within MS Word to present information. • Introduce children to templates. • Consider page layout including heading and columns.

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	technologies and services. • Review sources of support when using technology and children's responsibility to one another in their online behaviour. • Know how to maintain secure passwords. • Understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. • Aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. • Learn about how to reference sources in their work. • Search the Internet with a consideration for the reliability of the results of sources to check validity and	• Understand how to create a string. • Understand what concatenation is and how it works. **<u>Build up on from previous years.</u>** •Make more complex real-life problems into algorithms for a program. •Test and debug my programs as I work. •Convert (translate) algorithms that contain sequence, selection and repetition into code that works. •Use sequence, selection, repetition, and some other coding structures in my code •Organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently. •Use logical methods to identify the cause of				

	understand the impact of incorrect information. •Ensure reliability through using different methods of communication.	any bug with support to identify the specific line of code.				
			Databases (4) •Learn how to search for information in a database. • Contribute to a class database. • Create a database around a chosen topic. •Make appropriate improvements to digital work I have created.		**Concept Maps (4)** •Understand the need for visual representation when generating and discussing complex ideas. • Understand the uses of a 'concept map'. • Understand and use the correct vocabulary when creating a concept map. • Create a concept map. • Understand how a concept map can be used to retell stories and information. • Create a collaborative concept map and present this to an audience.	

					•Use collaborative modes such as within 2Connect to work with others and share it.	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 6	**Online Safety (3)** • Identify benefits and risks of mobile devices broadcasting the location of the user/device on apps. • Identify secure sites by looking for privacy seals of approval. • Identify the benefits and risks of giving personal information and device access to different software. • Review the meaning of a digital footprint. • Understand how and why people use their information and online presence to create a virtual image of themselves as a user.	**Coding (6)** •Design a playable game with a timer and a score. • Plan and use selection and variables. • Understand how the launch command works. • Use functions and understand why they are useful. • Understand how functions are created and called. • Use flowcharts to create and debug code. • Create a simulation of a room in which devices can be controlled. • Understand how user input can be used in a program.	**Blogging (4)** •Design and create my own online blogs. • Identify the purpose of writing a blog. • Identify the features of a successful blog. • Plan the theme and content for a blog. • Understand how to write a blog and a blog post. • Consider the effect upon the audience of changing the visual properties of the blog. • Understand how to contribute to an existing blog. • Understand how and why blog posts are approved by the teacher. • Understand the	**Networks (3)** •Learn about what the Internet consists of. • Find out what a LAN and a WAN are. • Find out how the Internet is accessed in school. • Research and find out about the age of the Internet. • Think about what the future might hold. •Explain the difference between the internet and the World Wide Web.	**Quizzing (6)** •Create a picture-based quiz for young children. • Learn how to use the question types within 2Quiz. • Explore the grammar quizzes. • Make a quiz that requires the player to search a database. • Make a quiz to test your teachers or parents.	**Spreadsheets (8)** •Know what a spreadsheet looks like. • Navigate and enter data into cells. • Introduce some basic data formulae in Excel. • Demonstrate how the use of Excel can save time and effort when performing calculations. • Use a spreadsheet to model a situation. • Demonstrate how Excel can make complex data clear by manipulating the way it is presented. • Use formulae for percentages,

	• Have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible dangers online, bullying and other inappropriate behaviour. • Begin to understand how information online can persist and give away details of those who share or modify it. • Understand the importance of balancing game and screen time with other parts of their lives. • Explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health. • Identify the positive and negative influences of technology on health and the environment.	• Understand how 2Code can be used to make a text-adventure game. •Test and debug my program as I work on it and use logical methods to identify a cause of a bug. •Decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work. • Identify the important aspects of a programming task (abstraction). Translate algorithms that include sequence, selection and repetition into code and nest these structures within each other. • Use inputs and outputs within my coded programs such as sound, movement and	importance of commenting on blogs. • Consider the intended audience carefully when I design and make digital content			averages, max and min spreadsheets. • Create a variety of graphs in Excel. • Use a spreadsheet to model real-life situation. • To apply spreadsheet skills to solving problems.

	Use filters when searching for digital content. •Explain in detail how accurate and reliable a webpage and its content is.	buttons and represent the state of an object. • Interpret (understand) a program in parts and can make logical attempts to put the separate parts together in an algorithm to explain the program as a whole.				
	Spreadsheets (5) •Use a spreadsheet to investigate the probability of the results of throwing many dice. • Use a spreadsheet to calculate the discount and final prices in a sale. • Create a formula to help work out prices of items in the sale. • Use a spreadsheet to plan how to spend pocket money and the effect of saving money. • Use a spreadsheet to plan a school charity day to maximise the		**Text Adventures (4)** • Find out what a text based adventure game is. • Explore in 2Create a Story. • Use 2Connect to plan 'Choose your own adventure' type story. • Use 2Connect plans for a story adventure to make the adventure using 2Create a Story. • Introduce an alternative model for a text adventure which has a less sequential narrative. • Use written plans to code a map-based adventure in 2Code.			

	money donated to charity.		• Consider the intended audience carefully when I design and make digital content.			