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Computing Knowledge Progression (Cumulative)

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
UTW To know that technology can make things happen and to coordinate actions accordingly – eg click on icon, touch screen, use a mouse	**Coding** • To understand what instructions are and predict what might happen when they are followed. • To know that coding makes a computer program. • To understand what object and actions are. • To understand what an event is. • To know how an event to control an object. • To begin to understand how code executes when a program is run. • To understand what backgrounds and objects are.	**Coding** • To understand what an algorithm is. • To create a computer program using an algorithm. • To create a program using a given design. • To understand the collision detection event. • To understand that algorithms follow a sequence. • To design an algorithm that follows a timed sequence. • 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	**Coding** • To understand what a flowchart is and how flowcharts are used in computer programming. • To understand that there are different types of timers and select the right type for purpose. • To understand how to use the repeat command. • To understand the importance of nesting. • To understand how to design and create an interactive scene.	**Coding** •To know how to use selection in coding with the 'if/else' command. •To know how to use variables in 2Code. •To know how to use flowcharts for design of algorithms including selection. •To know how to use the 'repeat until' with variables to determine the repeat. •To learn about and use computational thinking terms decomposition and abstraction.	**Coding** •To know how to represent a program design and algorithm. •To know how to create program that simulates a physical system using decomposition. •To explore string and text variable types so that the most appropriate can be used in programs. •To know how to use the Launch command in 2Code Gorilla •To know how to program a playable game with timers and scorepad.	**Coding** •To know the program design process, including flowcharts, to develop algorithms for more complex programs using and understanding of abstraction and decomposition to define the important aspects of the program. •Have the knowledge to code, test and debug from these designs. •To know how to use functions and tabs in 2Code to improve the quality of the code. •To know how to use the user interactivity using input functions

St Joseph's Catholic Primary School

Online Safety & Exploring (PSE) To understand they should ask permission when capturing an image or recording a sound of others.	**Online Safety & Exploring** •To know how to log in safely. •To learn how to find saved work in the Online Work area and find teacher comments. •To learn how to search Purple Mash to find resources. •To become familiar with the icons and types of resources available in the Topics section. •To know how to add pictures and text to work. •To know how the Tools and Games section of Purple Mash. •To learn how to open, save and print. •To understand the importance of logging out	**Online Safety** •To know how to refine searches using the Search tool. •To use digital technology to share work on Purple Mash to communicate and connect with others locally. •To have some knowledge and understanding about sharing more globally on the Internet. •To introduce Email as a communication tool using 2Respond simulations. •To understand how we should talk to others in an online situation. •To know how to send simple online communications in the form of email. •To understand that information put online leaves a digital footprint or trail. •To know the steps that can be taken to keep personal data and hardware secure	**Online Safety** •To know what makes a safe password. •To know the methods for keeping passwords safe. •To understand how the Internet can be used in effective communication. •To understand how a blog can be used to communicate with a wider audience. •To consider the truth of the content of websites. •To learn about the meaning of age restrictions symbols on digital media and devices.	**Online Safety** •To 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. •To Identify the risks and benefits of installing software including apps. •To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. •To know appropriate behaviour when participating or contributing to collaborative online projects for learning. •To know the positive and negative influences of technology on health and the environment.	**Online Safety** •To have a greater understanding of the impact that sharing digital content can have. •To know the sources of support when using technology and children's responsibility to one another in their online behaviour. •To know how to maintain secure passwords. •To know the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. •To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. •To learn about how to reference sources in their work •To know how to search the Internet with a consideration	**Online Safety** •To know the benefits and risks of mobile devices broadcasting the location of the user/device. •To know how to identify secure sites by looking for privacy seals of approval. •To know the benefits and risks of giving personal information. •To review the meaning of a digital footprint. •To have a clear idea of appropriate online behaviour. •To begin to understand how information online can persist. •To understand the importance of balancing game and screen time with other parts of their lives. •To know the positive and negative influences of technology on health and the environment.

St Joseph's Catholic Primary School

				•To understand the importance of balancing game and screen time with other parts of their lives.	for the reliability of the results of sources to check validity and understand the impact of incorrect information.	
Maths To explore simple programs where they can input and view data in a range of ways – text, pictogram	**Spreadsheets** •To know what a spreadsheet program looks like. •To know how to open 2Calculate in Purple Mash. •To know how to enter data into spreadsheet cells. •To know how to use 2Calculate image tools to add clipart to cells. •To know how to use 2Calculate control tools: lock, move cell, speak and count.	**Spreadsheets** •To know how to use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. •To learn how to copy and paste in 2Calculate. •To know how to use the totalling tools. •To learn about spreadsheet for money calculations. •To learn how to use 2Calculate equals tool to check calculations. •To learn about 2Calculate to collect data and produce a graph.	**Spreadsheets** •To learn the symbols more than, less than and equal to, to compare values. •To learn how to 2Calculate to collect data and produce a variety of graphs. •To know the advanced mode of 2Calculate to learn about cell references.	**Spreadsheets** •To know how to format cells as currency, percentage, decimal to different decimal places or fraction. • To know how to use the formula wizard to calculate averages. • To know how to use the combining tools to make spreadsheet activities such as timed times tables tests. •Understand how to use a spreadsheet. •To know how to add a formula to a cell to automatically make a calculation in that cell.	**Spreadsheets** • To know how to use the formula wizard to add a formula to a cell to automatically make a calculation in that cell. • To know how to use the copy and paste within 2Calculate. Using 2Calculate tools to test a hypothesis. • To know how to use add a formula to a cell to automatically make a calculation in that cell. •To have knowledge of a spreadsheet to model a real-life situation and answer questions	**Spreadsheets** • To know how to use an Excel spreadsheet to investigate the probability of the results of throwing many dice. • To know how to use the formula wizard to add a formula to a cell to automatically make a calculation in that cell. • To know how to use the create graphs showing the data collected. • To know how to use the type in a formula for a cell to automatically make a calculation in that cell. • To know how to use an Excel spreadsheet to create computational

St Joseph's Catholic Primary School

						models and answer questions.
Maths To explore simple programs where they can sort, input and view data in a range of ways – text, pictogram, image	**Grouping & Sorting** •To learn how to sort items using a range of criteria. • To learn how to sort items on the computer using the 'Grouping' activities in Purple Mash.	**Questioning** •To learn about data handling tools that can give more information than pictograms. •To learn about yes/no questions to separate information. • construct a binary tree to identify items. • To learn how to use 2Question (a binary tree database) to answer questions. • To learn how to use a database to answer more complex search questions. • To learn how to use Search tool to find information.	**Touch Typing** • To introduce typing terminology. • To understand the correct way to sit at the keyboard. • To learn how to use the home, top and bottom row keys. • To know that how to type with the left and right hand.	**Writing for different audiences** • To know how font size and style can affect the impact of a text. • To learn how to simulated scenario to produce a news report. • To learn about a community campaign.	**Database** • To learn how to search for information in a database. • To learn how to contribute to a class database. • To know how to create a database around a chosen topic.	**Blogging** • To know how to identify the purpose of writing a blog and its key features. • To know how to plan the theme and content for a blog and write the content. • To consider the effect upon the audience of changing the visual properties of the blog. • To understand the importance of regularly updating the content of a blog. • To understand how to contribute to an existing blog. • To understand how and why blog posts are approved by the teacher. • To understand the importance of commenting on blogs.

St Joseph's Catholic Primary School

EAD	Maze Explorers	Effective Searching	Email	Logo	Game Creator	Text Adventures
To begin to know similarities and differences in using digital and non-digital media and share what they have discovered	•To understand the functionality of the direction keys. •To understand how to create and debug a set of instructions (algorithm). •To know the additional direction keys which are part of an algorithm. •To understand how to change and extend the algorithm list. •To know how to create a longer algorithm for an activity. .	•To understand the terminology associated with searching. •To gain a better understanding of searching on the Internet. •To know how to create a leaflet to help someone search for information on the Internet.	•To know the different methods of communication. •To know how to use email using an address book. •To know how to use email safely. •To know how to add an attachment to an email.	•To know the structure of the coding language of Logo. •To know how to input simple instructions in Logo. Using 2Logo to create letter shapes. •To know how to use the Repeat function in Logo to create shapes. To know how to use and build procedures in Logo.	•To know how to set the scene on 2DIY3D. •To know how to create the game environment on 2DIY3D.	•To know what a text adventure is. •To know map-based text adventures. •To know how to code a map-based text adventure.

St Joseph's Catholic Primary School

Literacy To explore how technology can be used to create and capture writing, drawing, pictures, sound and video	**Animated Story Books** •To know how to use e-books and the 2Create a Story tool. •To have knowledge of how to add animation to a story. •To know how to add a sound to a story, including voice recording and music the children have composed. •To work on a more complex story, including adding backgrounds and copying and pasting pages. •To learn how to share e-books on a class display board.	**Creating Pictures** •To know the functions of the 2Paint a Picture tool. •To know the Impressionist style of art (Monet, Degas, Renoir). •To know Pointillist art and look at the work of pointillist artists such as Seurat. •To know the work of Piet Mondrian and recreate the style using the lines template. •To know the work of William Morris and recreate the style using the patterns template. •To know surrealism and eCollage	**Branching Databases** •To know how to sort objects using just 'yes' or 'no' questions. •To know how to complete a branching database using 2Question. •To know how to create a branching database of the children's choice.	**Animation** •To know what makes a good animated film or cartoon. •To know how animations are created by hand. •To know how 2Animate can be created in a similar way using the computer. •To know how to add backgrounds and sounds to animations. •To be introduced to 'stop motion' animation.	**3D Modelling** •To know how to use 2Design and Make and the skills of computer aided design. •To know and understand the effect of moving points when designing. •To understand designing for a purpose. •To understand printing and making.	**Networks** •To learn about what the Internet consists of. •To know what a LAN and a WAN are. •To know how the Internet is accessed in school. •To know about the age of the Internet. .

St Joseph's Catholic Primary School

Maths	Lego Builders	Making Music	Simulations	Effective Searching	Concept Maps	Quizzing
To explore simple programs where they can input and view data in a range of ways – text, pictogram, image	•To learn how to complete and follow instructions on the computer. •To consider how the order of instructions affects the result.	•To know how to make music digitally using 2Sequence. •To learn how to use 2Sequence. •To know how to edit and refine composed music. •To know how to upload a sound from a bank of sounds into the Sounds section. •To know how to record and upload environmental sounds into Purple Mash. •To know how to use these sounds to create tunes in 2Sequence.	•To know what simulations are. •To know how to analyse and evaluate a simulation.	•To know how to locate information on the search results page. •To know whether an information source is true and reliable.	•To understand the need for visual representation when generating and discussing complex ideas. •To understand and use the correct vocabulary when creating a concept map. •To create a concept map. •To understand how a concept map can be used to retell stories and present information.	•To know how to create a picture-based quiz for young children. •To learn how to use the question types within 2Quiz. •To know how to make a quiz that requires the player to search a database. Are you smarter than a 10- (or 11-)year-old? To test your teachers or parents.

St Joseph's Catholic Primary School

	Pictograms •To understand that data can be represented in picture format. •To contribute to a class pictogram. •To learn how to use a pictogram to record the results of an experiment.	**Presenting Ideas** •To know how a story can be presented in different ways using 2Create, 2Publish. •To know how to make a quiz about a story or class topic using 2 Quiz. •To know how to make a fact file on a non-fiction topic. •To know how to make a presentation to the class 2 Connect.	**Graphing** •To know how to enter data into a graph and answer questions using 2Graph. •To know how to solve an investigation and present the results in graphic form.	**Hardware Investigators** •To know the different parts that make up a computer. •To recognise the different parts that make up a computer.	**Microsoft Word** • To know what a word processing tool. • To know how to add and edit images to a word document. • To know how to use word wrap with images and text. To change the look of text within a document. • To know how to add features to a document to enhance its look and usability. • To know how to use the sharing capabilities in Google Docs. • To know how to use tables within to present information. • To know how to use templates.	**Binary** • To know what the terms binary and denary mean and how they relate to the number system, the digital system and the terms base-10 and base-2 •T o relate binary to the on and off states of electrical switches. • To know how to convert numbers from decimal to binary. • To know how to convert numbers from binary to decimal. • To know how to represent states of object in their own program using binary.
UTW	**Technology Outside School**		**Microsoft PowerPoint**	**Making Music**		

Love and learn in the footsteps of Christ

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To know about different types of technology within the school.	•To know about different types of technology outside of school.		•To know and understand the uses of PowerPoint. •To know how to create a page in a presentation. •To know how to add media to a presentation. •To know how to add add animations to a presentation. •To know what is needed to design and create an engaging presentation.	•To know the main elements of music. •To understand rhythm and tempo. •To know how to create a melodic phrase. •To know how to electronically compose a piece of music.		

Key

Predominant Areas of Computing		
Information Technology	Computer Science	Digital Literacy