Westhead Lathom St James' CE Primary School
Year 3/4 Computing

Questions to Develop Children's Spirituality in Computing:	How are we as humans different to computers? Does giving a computer a name make it a person? If a computer went home in your place would anyone notice? Why? What's different? What does it mean to be human? Do we every treat people like machines? Do you ever treat a computer/device as if it is more than just a machine? Can devices/computers break the rules/misbehave? What are the positives and negatives of the technology in our lives?
Development of the child:	Reasoning, enquiry, interpretation, critical mind and questioning.

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Topic: Digital Literacy **Units:** DL- The Internet DL-Connecting Computers **Subject:** Computing	**Prior Knowledge/Links:** DL- Technology Around Us (Y1/2) DL- Information Technology Around Us (Y1/2)		
National Curriculum Objectives	**Key Knowledge and Vocabulary**		
• Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• Know that digital devices accept inputs and produce outputs • Know what input and output devices are and explain how to use digital devices for different activities • Know similarities between using digital devices and non-digital tools • Know why we need a network switch • Know how messages are passed through multiple connections • Know how information can be passed between devices e.g. a switch, server, and wireless access point in a network • Know that devices in a network are connected with one another and identify networked devices in school • Know benefits of computer networks • Know how information is shared across the internet and describe the internet as a network of networks • Know why a network needs protecting • Know how the internet allows us to view the World Wide Web • Know that the World Wide Web is the part of the internet that contains websites and web pages • Know how to access websites on the WWW • Know how to create media which can be found on websites • Know that new content can be created online • Know that individuals can add content to the WWW • Know that there are rules to protect content • Know that not everything on the World Wide Web is true • Know why we need to think carefully before we share or re-share content • Know why some information found online may not be honest, accurate, or legal	Networked World Wide Web Websites Uploaded Content Reshare	Input/output Devices Process Digital Connections Network Switch Server Wireless access port

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Topic: Computer Science **Units:** CS-Repetition in Shapes CS-Sequencing Sounds CS- Repetition in Games CS- Events and Actions in Programmes **Subject:** Computing	**Prior Knowledge/Links:** CS- Move a Robot (Y1/2) CS- Robot Algorithms (Y1/2) CS-Programming Animations (Y1/2) CS-Programming Quizzes (Y1/2)		
National Curriculum Objectives	**Key Knowledge and Vocabulary**		
• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• Know that objects in Scratch have attributes and identify objects e.g. • sprites, backdrops • Know that commands in Scratch are represented as blocks • Know how to create a program following a design • Know that each sprite is controlled by the commands input • Know that a sequence of connected commands will create an output • Know how the objects in a project will respond exactly to the code • Know how to start a program in different ways • Know how to combine sound commands • Know how to build a sequence of commands • Know how to implement an algorithm as code • Know how to attribute keys to use for actions and explain choices • Know the relationship between an event and an action • Know how to identify ways to improve a program • Know how to modify a program using a design • Know how to test a program against a given design • Know the effect of changing a value of a command • Know everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves • Know how to use a count-controlled loop to produce a given outcome • Know the effect of changing the number of times a task is repeated • Know that a computer can repeatedly call a procedure • Know how to re-use existing code snippets on new sprites • Know how to refine an algorithm in my design	Sequence Animation Stop frame Onion skinning Media Programming Sprites Backdrops Attributes Controlled Commands Implement algorithms	Accuracy Code snippet Count controlled loop Modify Procedure Debugging Infinite loop

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Topic: Information Technology **Units:** IT- Audio Editing IT- Stop Frame Animation IT-Data Logging IT- Photo Editing IT-Branching Databases IT-Desktop Publishing **Subject:** Computing	**Prior Knowledge/Links:** IT- Digital Painting (Y1/2) IT- Digital Photography (Y1/2) IT- Grouping Data (Y1/2) IT-Digital Writing (Y1/2) IT-Pictograms (Y1/2) IT-Making Music (Y1/2)		
National Curriculum Objectives	**Key Knowledge and Vocabulary**		
• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• Know how to create an effective flip book-style animation • Know how an animation/flip book works • Know how to create an effective stop frame animation • Know why little changes are needed for each frame • Know how to review a sequence of frames to check work • Know how to use onion skinning to help make small changes between frames • Know how to add other media to animations • Know how to investigate questions with yes/no answers • Know how to arrange objects into a tree structure • Know how to select and refine an attribute to separate objects • Know how to use branching database to answer questions • Know how to create own simple branching database • Know what a pictogram tells me • Know and explain the difference between text and images • Know the advantages and disadvantages of using text and images • Know how to change font style, size, and colours for a given purpose • Know how to copy, cut and paste text and images • Know how to create a template for a particular purpose • Know how to use 'page orientation' and placeholders • Know how to make changes to content after being added	Audio Inspect Soundwave Podcast Editable exporting Data sensors Intervals Captured Interpret Rotating Software Crop Composition Photo edit Cloning Criteria	Tree structures Branching database Uniquely identified Identification tool Page orientation Font style Images Layout Desktop publishing placeholders

	• Know why desktop publishing might be helpful and more efficient than completing a project by hand • Know digital devices that can record sound and play it back • Know the inputs and outputs required to play audio or record sound - Know how to use a device to record audio and play back sound • Know how to save a digital recording as a file • Know how to edit sections of an audio recording • Know how to open a digital recording from a file • Know that sensors are input devices • Know that data from sensors can be recorded • Know how to use data from a sensor to answer a given question • Know how to import a data set • Know how to use a computer program to sort data • Know how images can be changed in real life • Know how to change the composition of an image by selecting parts of it • Know how to choose effects to make an image fit a scenario • Know how to select and use appropriate tools to retouch an image • Know how to combine parts of images to create new images		