St Mary and St Paul's

Computing

The overview develops from Knowsley CLC scheme of work.

	Autumn	Spring	Summer
Year 1	**Our Local Area** In this computing activity, we will be using technology to help us explore our local area. It uses investigative tasks to introduce children to the idea of looking at their local area with the aid of technology. The local area will be studied frequently during a child's time in primary school and therefore this unit focuses on aspects of local features to support learning about directional language. *Resources: Google Earth, Google Maps and Bee-bots.*	**Pictures Tell a Thousand Words** This project will teach children about the main functions and buttons on an ipad camera, as well as about different shots to enable the children to confidently capture their own pictures, using the camera app on an iPad. Finally, the children will develop an understanding of using pictures to tell a story, which can then be presented on the pic collage app. *Resources: ipads (camera app) and pic collage.*	**Walking with dinosaurs** Children will learn about sequencing and algorithms. By the end of this project, the children will fully understand the term algorithm and will be able to use a simple app on an iPad to reinforce this learning. *Resources: ipads (Daisy Dinosaur app and BeeBot app, Scratch Jnr app)*
Year 2	**You've Got Mail!** The aim of this unit of work is to help children to explore how they can use email to communicate with real people within their school. It also covers keeping safe online. *Resources: Laptops, Google Classroom (login details).*	**Code-tastic** The best way for children to learn about computer programs and algorithms is to have a go themselves. This unit of work lets them use a variety of programming apps/software to give children a practical understanding of how computer programs actually run, how a computer follows a sequence of instructions and what to do when a program goes wrong. *Resources: ipads with these apps on: Daisy Dinosaur app, A.L.E.X app, Move the Turtle app and Hopscotch app.*	**Mythical Creatures** The children will learn about the history of and different types of animation. They will firstly produce a story about their made up mythical creature and then create their animation out of clay/plasticine or paper and then animate it. *Resources: ipads (Animate It app)*
Year 3	**Big Robots** The project will reinforce children's understanding of directional language and programming. Children are able to understand and explain the meaning of algorithms and the importance of order and accuracy. The final lesson will provide children with the opportunity to write their own algorithm. Children will understand how to be able to break down tasks into a sequence of steps and understand the order of sequence. *Resources: ipads (PureFlow) and Beebots.*	**Get Blogging** In this project, children will learn about how the internet works and how the internet is used for communication. Children will develop an understanding of how Twitter works and they will then be given the opportunity to take over our school Twitter account for the day, blogging about what is happening around our school. *Resources: Laptops, teacher ipad (with access to our Twitter account and camera app for photographs).*	**My First Program** The children will create their very first computer game in Scratch. This will involve using sprites and background images. The character will choose a random number between 1 to 100 and it's the player's job to guess the number selected. Each guess will be tested to see if it is correct or if the player needs to go higher or lower with their next guess. This programme will include: variables, user input, loops and conditions and operators. *Resources: Laptops (access to Scratch via online website).*
Year 4	**Back to the Future** The children will learn about different technologies both old and new, about inventors and the different components of a computer. They will then present what they have learned in a PowerPoint presentation. *Resources: Websites showing how technology has changed over time, resources of different technology (tape cassette, cd player, videos etc), laptops (for PowerPoints).*	**Making Games** The children will develop their skills from Year 3 and draw a picture of their own sprite/background on paper and input these into Scratch to use. They will create a game involving user interaction, whereby the user needs to click on the characters before they disappear to score points. The characters will be different sizes and appear and disappear at different points throughout the game. The programme will include: animation, artificial intelligence, player interaction and a scorer and timer. *Resources: Laptops (access to Scratch via online website).*	**Hurray for Hollywood** From this project, the children will learn about the key factors in producing good footage. The children will devise their own characters, plot and storyboard before filming their short movie. The children will then import their film clips into iMovie, where they will edit and enhance their footage before sharing their movie with the rest of the class. *Resources: iPads (to use the camera app to film and record and also iMovie).*

Year 5	**Newsroom** The children will firstly learn about how news is delivered and the differences between local and national news reports. The project culminates in the children recording their own news report. *Resources: iPads (camera app to record, microphones), laptops (visiting websites for research, MS word to type up their newspaper script).*	**Cars** The children will develop their Scratch knowledge and create a detailed two player game that includes racing cars around a track. The children will design their own cars (sprites) and background, using the paint app. The first to three laps wins the race. The programme will include: developing skills learned in years 3 and 4, as well as introducing more sprites (created themselves in paint) which will have an impact on the overall game (slowing or speeding the cars up/down). *Resources: Laptops (access to Scratch via online website).*	**Let's Change the World Inventors** The children will be reminded of the work they did in year 2 with the Animate It! app. They will firstly be introduced to the concept of creating basic animations by using still images to create a moving scene. Next, the children will film their own animated sequence using props and sets that they have created and will also learn how to edit their final piece in iMovie. *Resources: Laptops (IMovie)*
Year 6	**Heroes and Villains** – This project will take the children through the steps to create their own Heroes and Villains style came, using the programme Scratch. As the hero of the game, the children will battle against the villain to collect diamonds and destroy each other's health. The aim of the game is to either be the first to collect 5 diamonds or destroy the villain's health to 0. The programme will include: developing skills learned in years 3, 4 and 5, as well as user input, sensors, sounds and conditional statements. The children will also be encouraged to follow the coding instructions more independently and fix any bugs that may arise, drawing on knowledge from previous year groups. *Resources: Laptops (access to Scratch via online website).*	**Young Authors** During this project, the children will develop a story idea in small groups to create a storyboard. The children will then use Book Creator and Brushes to create their own eBook, including text, illustrations and audio. *Resources: iPads (Book Creator and Brushes apps).*	**Let's learn a language** By Year 6 it, the children will have prior experience of coding through using a visual based programming language (Scratch). This unit of work will be the first time that they will code using a scripting language (i.e. writing lines of code, as opposed to dragging blocks to build algorithms and programs). The aim of this unit is to introduce children to the world of programming languages, of which there are many. They will experiment with learning some basic coding on the laptops, using this website to work through the different coding challenges (on JavaScript and Python - tabs along the top). *Resources: Laptops (internet access to access this website: https://www.w3schools.com/js/default.asp)*

Where will we find Computing in our EYFS Curriculum?

PSED Understanding Emotions (internet Safety)	Is more able to recognise the impact of their choices and behaviours/actions on others and knows that some actions and words can hurt others' feelings.	Talks about their own and others' feelings and behaviour and its consequences. Attempts to repair a relationship or situation, where they have caused upset and understands how their actions impact other people.
Communication and Language - Understanding	Showing understanding of prepositions such as under, on top, behind by carrying out an action or selecting correct picture.	Understands questions such as who; why; when; where and how?
Literacy -Writing	Showing interest in letters on a keyboard, identifying initial letters of their own name and familiar words.	Enjoys creating texts to communicate meaning for an increasingly wide range of purposes, such as making greetings cards, tickets, lists, invitations and creating their own stories and books with images and sometimes with words, in print and digital formats. Gives meaning to the marks they make as they draw, write, paint and type using a keyboard or touch-screen technology.
Literacy - Reading	Knowing information can be relayed through signs and symbols in various forms (digital screens, environmental print). Handles books and touch screen technology carefully and the correct way up with growing competence. Begins to navigate apps and websites on digital media using drop down menu to select websites and icons to select apps.	Enjoys an increasing range of print and digital books, both fiction and non-fiction. Knows that information can be retrieved from books, computers and mobile digital devices.
Mathematics - spacial awareness	Responding to and uses language of position and direction. Predicts, moves and rotates objects to fit the space or create the shape they would like.	Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints. Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spacial reasoning).
UTW - Technology	Knowing how to operate simple equipment e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support. Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets. Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or	Completes a simple program on electronic devices. Uses ICT hardware to interact with age appropriate computer software. Can create content such as a video recording, stories, and/or draw a picture on screen. Develops digital literacy skills by being able to access, understand and interact with a range of technologies. Can use the internet with adult supervision to

	new images. Knows that information can be retrieved from digital devices and the internet. Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet.	find and retrieve information of interest to them.