Childwall Valley - Computing across the Curriculum Long Term Planning Map - Y5

This is your long-term overview for Computing. Please add to or amend this plan throughout the year. Underneath each section are the key skills for that area of computing. These can be assessed using the Assessment tracker spreadsheet. More activities and suggestions can be added as other subject areas are added to the plan.

T = Tutorial Available

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	Local		UK		World	
Science	Properties and Changes of materials		Forces	Earth and Space	Animals including humans	Living Things and their Habitats
History/ Geography	Suffragettes - Votes for Women	Liverpool as an urban area	Britain's Settlement by the Anglo-Saxons and Scots	Time Zones, Climate Zones, Longitude and Latitude	A non-European society that provides contrasts with British history Maya	Volcanoes
Art / DT	Art – Painting - Frida Khalo - portrait painting	DT – cooking/nutrition – To make biscuits combining flavours based on prior surveys	Art – Drawing – Focus on tone and texture when still life drawing Artist – Paul Cezanne	DT – CAMS project - linked to Space	Art – Sculpting/textiles – Mayan masks	DT – Textiles – To create a modern item using felt with a finish technique (purse/phone case/pencil case)

(CAD for design) |

Key Skills *(used throughout all areas of Computing)*	
KS5.1	When using a mouse or trackpad, be able to use left/right/double click and scroll.
KS5.2	When typing, often holds two hands over different halves of the keyboard and can use more than two fingers to enter text.
KS5.3	Be able to save, name and retrieve work effectively to a suitable location.
KS5.4	If appropriate, knows how to change print properties to affect the appearance of a printed document.
KS5.5	Be able to navigate a folder system to find and open documents e.g. Shared Drive, iPad camera roll or Dropbox.
KS5.6	Be able to create suitably named folders to organise documents, using appropriate file paths.
KS5.7	Know and use more advanced keyboard function keys e.g. insert, delete, ctrl+c, ctrl+v, ctrl+z

Computer Science

Tutorial Link

Code Studio

Code Studio. Create or print off existing user accounts for class on the website. Y5 should be working around Course E level, at a pace that is appropriate for the class. We would recommend teaching the whole class a lesson at a time, and using the extension materials to allow more able pupils to progress once they have completed the lesson materials, rather than moving on through the lessons independently. Track and target pupil progress using the built-in pupil tracker. **T**

CS5.1, CS5.2, CS5.3, CS5.4, CS5.5

Control and Programming	**Dash robot** Control the robot to perform a particular function , e.g. room guard that the pupils have prepared and then programmed into the blockly app. **CS5.2, CS5.4**	**Scratch Drum Machine** Make a Drum Machine by adding suitable sprites and programming them to make a noise when tapped. Then control using key presses. Develop by adding basic animation to make the sprite move and change its appearance simultaneously. Example project: **CS5.1**	**What is digital data?** Use BBC Bitesize for a video, information and glossary. Use this as a basis to create a digital presentation to show learning, and undertake any additional research to follow lines of enquiry.	**Tynker Solar System** Use the website and follow the instructions to program an interactive model of our Solar System. Then add planet facts. **CS5.1, CS5.2, CS5.3**	**Scratch Polygons** On Laptops/PCs or iPads, program length and angles to create polygons by using repeats. Add in a formula to work out the angle required based on the number of sides. Explore options for changing line colour and thickness. Use nested loops to turn these polygons into repeating patterns around a point.	**CodeCombat** Use Codecombat online to develop basic sequencing and problem solving skills using a text based programming language (e.g. Python) and introduce procedures, loops and conditional language. **CS5.1, CS5.3, CS5.4**

					CS5.1	
Key Skills		CS5.1 Can use decomposition when solving problems (break the code/problem into smaller parts). CS5.2 Show an understanding of when to use 'while', 'repeat until' and 'forever if" loops to make programs shorter and more efficient and can use them appropriately (understanding the differences between them). CS5.3 Can explain what happens when a variable changes and can use this within a computer program to manipulate data. CS5.4 Can use and change a pre-written function as part of a longer program or sequence. CS5.5 Be able to use a greater range of conditionals (selection) including whilst, if else, repeat until.				

Digital Literacy

Tutorial Link

Research: Internet	Image Search	Internet Research	Google Advanced search	Compare 3 Websites	Altered Images	Padlet
	Use Google or Bing to search for small clipart images for use in multimedia work on suffragettes. Use the image filters, e.g. type and size and compare the two search engines. **DL5.1, DL5.2, DL5.3, DL5.4**	When researching, use information found online to inform presentation work on Liverpool, without copying and pasting text. This could be done as part of a multimedia activity. **DL5.1, DL5.2, DL5.3, DL5.4** **BBC Bitesize** Explore the videos and participate in activities and simulations to find out about Changing Materials. **DL5.1**	Use a large database (e.g. Google search engine) to search for information e.g. about Anglo Saxons. Use Advanced Google search for Boolean searches (AND/OR Same as searches). Continue to use these research skills throughout the year in other areas. Teacher materials here **DL5.1, DL5.2, DL5.3, DL5.4** **BBC Bitesize** Explore the videos and participate in activities and simulations to find out about Forces and Motion. **DL5.1**	Explore information about Climate zones using 3 websites. Discuss the usefulness of each by generating and measuring against success criteria. Teacher to select three appropriate websites related to the topic prior to the lesson. **DL5.1, DL5.2 ,DL5.3, DL5.4** **Google Expeditions** Use the VR headsets to experience space. **DL5.1**	Use the presentation for pupils to learn how photos can be altered digitally. They will consider the creative upsides of photo alteration as well as its power to distort our perceptions. **DL5.2, DL5.3** **BBC Bitesize** Explore the videos and participate in activities and simulations to find out how Humans Change During Their Lifetime. **DL5.1** **Google Expeditions** Use the VR headsets for pupils to experience Ancient Maya to inform and stimulate writing. **DL5.1**	Discuss aspects of Volcanology and create subsections of research. Model using the web browser to look for information. Talk about relevance, is it reliable, how to make brief notes. Model adding information to Padlet along with images saved from the web. Section by section: build up information and display on the screen. Discuss usefulness and detail and interest of responses. Discuss which websites are useful and why. Padlet link here **DL5.1, DL5.2, DL5.3, DL5.4** **Google Expeditions** Use the VR headsets for pupils to experience volcanoes to inform and stimulate writing. **DL5.1**
Online Communication and eSafety	**Using the VLE** Use the school VLE (virtual learning environment) eschools or platforms like Seesaw to show or allow children to partake in uploading content to a digital platform. For example a child could upload a collage made on the iPad to their own area on Seesaw. **Online Quizzes**					

Private and personal Information - **Common Sense Media Materials** Pupils will identify the reasons why people share information about themselves online;explain the difference between private and personal information and understand why it can be risky to share private information online. **DL5.6**	Digital Citizenship - **Common Sense Media Materials** Students will establish group norms to create a positive online community that promotes responsible and respectful digital behavior within their classroom. **DL5.6**	My Media Choices - **Common Sense media materials** Activities in this lesson will give pupils a framework for making informed media choices about the media they create and consume. **DL5.6 DL5.4**	A Creator's Rights and Responsibilities **Common Sense media materials** In the lesson, pupils will learn about the rights and responsibilities they have when it comes to the images they create and use. **DL5.6 DL5.4**	Keeping game fun and healthy **Common Sense media materials** Pupils will learn that Social interaction is part of what makes online gaming so popular and engaging. Online communication can come with some risks. This lesson will show how to keep gaming experiences fun, healthy, and positive. **DL5.6**	Online Tracks **Common Sense media materials** Pupils will learn what a "digital footprint" is and identify the online activities that contribute to it. Identify ways they are in control of their digital footprint and understand responsibilities they have themselves and others. **DL5.6**
Modelling and Simulations	**CoSpaces Edu** Using the online interface on PC or iPad app, pupils can create their own Suffrage Museum. These experiences	**Solids and liquids simulation** Use the simulation on the link below to investigate how heating and cooling	**Phet Forces Simulations** Use the Forces basics and Skatepark Phet simulations to investigate different forces and their	**Google Earth Mars/Moon module** Find out about the Red Planet or Apollo Landing using Google Earth software on laptops/PCs. **T**	**Google Earth** Explore Google Earth linking to geography work on climate zones and global countries and cities.. **DL5.8**	**Google Earth (Volcanoes and Earthquakes)** Explore areas that are prone to earthquakes and volcanoes. Identify key features

can be explored through AR and VR with the correct equipment or through the browser window. Basic account is free but extra features are unlocked with subscription. **DL5.8**	can affect different materials. https://phet.colorado.edu/en/simulation/states-of-matter **T** **DL5.8**	effects. **DL5.8**	**DL5.8** **Solar Walk app** Explore the Solar System. **DL5.8** **If the Moon Were Only 1 Pixel (SPACE)** Use the online tool to explore the scale of our solar system. **DL5.8** **Space Augmented Reality (AR) apps** Use Spacecraft AR to view space crafts, planets and space stations through Augmented reality. (Trigger images will need to be printed). **DL5.8**		and landmarks using street view and 360° images.. **T** Link here **DL5.8** **Quiver app (Volcanoes)** Use the augmented reality app to model an erupting volcano and then label the different parts of a volcano. (The trigger sheet will need to be downloaded and printed out prior to the session. **DL5.8**

Key Skills	DL5.1 To be able to search the internet for specific information using tools such as Google Advanced Search. DL5.2 To be able to check information for accuracy and bias. DL5.3 Can save media from the internet to be used in further work. DL5.4 Is aware that some media is copyrighted and cannot be used without permission. DL5.5 Be able to upload/download informative and interesting content to and from a learning platform, including various media. DL5.6 Demonstrate an understanding of the rules for personal internet safety, including social media and search engine use. DL5.7 Be able to take part in a range of digital surveys and quizzes to communicate and collaborate with others. DL5.8 Can use modelling and simulation software to create realistic or fantasy representations of the real world

Information Technology

Word Processing and Desktop Publishing	**Microsoft Word or Google Docs** Use word processing software to write an explanatory text on The Suffrage Movement. Focus the structure and layout of the work to fit the purpose. Format the text to indicate relative importance, including bold, italic, underline and strikethrough. Show how to use the spell checker and thesaurus. **IT5.1, IT5.2**	**Typing practice:** Play online typing game: Nitrotype to improve typing speeds and skills. Children can choose their difficulty to differentiate the task. **KS5.2**	**Comic books** Use Comic Book! (PAID) Comic Life (PAID) app or Seedling Comics Studio app (FREE) to create a one-page guide to the Anglo Saxons or the Scots. Use images found online or their own photos to illustrate. **T** **IT5.1, IT5.2, IT5.5**	**Adobe Spark Page app/website** Use Adobe Spark Page website or app (a school or class account login will be required) to create a digital writing presentation linked to a climate region of choice. **IT5.1, IT5.2**	**Microsoft PowerPoint or Google Slides** Make a non-linear hyperlinked slide show presentation based on Ancient Maya that begins to use a range of hyperlinks and media and also includes the use of custom animation. **T** **IT5.1, IT5.2, IT5.4**	**Google Earth Project** In Google Earth create a 3D tour presentation around famous volcanoes. From the menu select projects. After watching the tutorial, search for key locations, and add images and information for each place. Information could have been researched and written up previously during an English or Geography lesson. Pupils will need a class google account. **IT5.1, IT5.3, IT5.2**

Multimedia	**Lit Film Fest** Use the [Lit Film Fest](#) website to access free English projects. Each project has a set of structured lessons based around writing genres and show how technology can be incorporated to produce a performance video by the end of the project. (Users will have to create a free account to access the free resources, while other projects are under a paid subscription. **IT1.4**					
	Garageband Use Garageband app to create musical compositions from around the world, using various instrumental loops. Children should be given a specific brief and audience to create for. **IT5.6**	**iMotion app (Properties and changes of materials)** Create a stop motion animation. Use Play-Doh, paper and craft materials to represent how materials dissolve, how they can be separated, mixed, burned and show if they are reversible or irreversible. Add speech bubbles as captions for multiple photos to allow time to read. Finished films could be edited in iMovie app, adding titles and music. Pupils could be allocated different processes. They will need to make a plan before they begin. **IT5.2, IT5.4, IT5.6**	**Sketchpad online** Use the [digital art website](#) to combine shapes and colours to create still life drawings. *This could be done in art lessons.* **IT5.5**	**iMovie app** Create a movie trailer. This could be as an advert film of a space story the pupils have written in English. Possibly green screen some shots using the Doink app and add movies to iMovie. The scripts and shots could be planned and pre-written using the relevant storyboard template. These can be downloaded from [here.](#) **IT5.2, IT5.4, IT5.6**	**Green Screen** Create a video of children as news reporters from an event in Ancient MAya (human sacrifice/war etc)Act out their own scripts, direct and film as a group. Use Doink App on iPad. Use iMovie app to edit scenes and edit videos. **IT5.4, IT5.5**	**Adobe Spark Video app or online** Combine images, text and narration to create a movie to explain Volcanoes **T** **IT5.1, IT5.2, IT5.4, IT5.6**

Data Handling	**Microsoft Excel** Use Microsoft Excel software to input data taken from Science investigations. Then use the spreadsheet to create graphs or charts which can be analysed and the results evaluated. **IT5.10**	**Spreadsheets (Maths)** Use Excel or Google Sheets To create a spreadsheet linked to area and perimeter. Show the pupils the sample spreadsheet and ask them to complete. Now show them how to create a simple calculator using the formula function. Ask the pupils to create a formula that will calculate area and perimeter automatically once dimensions are added to certain cells. Show how to format their work to enhance the presentation. They can change the font, font size etc. They can colour cells and merge cells if they need. To extend, give the pupils a 'worksheet' with different shapes on. Can they use the spreadsheet to calculate the area and perimeter of each shape? Resources here **IT5.10, IT5.11**	**Airtable (planets)** Use Airtable to create a collaborative database of planets. Agree on fields as a class then research and collect data (e.g. orbital period, length of day, distance from sun, radius. moons etc). Input the information on Airtable. Sort and filter the relevant information to answer specific questions e.g. which planet has years longer than…. etc. (Logins will be needed, 1 login per group of 4-6.) **IT5.8, IT5.9**
Key Skills	IT5.1 When word processing, can format the text to indicate relative importance, including bold, italic, underline and strikethrough. IT5.2 Can include a range of media in documents, including images and sound. IT5.3 Can use modelling software to create virtual environments or simulations. IT5.4 Can select sounds, text, movie clips and other effects to suit purpose and audience. IT5.5 To be able to use a range of editing techniques and filters to improve photographs and digital art. IT5.6 To be able to layer and edit sounds in appropriate sound editing software. IT5.7 Can organise data by designing fields and records in a database, with support. IT5.8 Be able to design questions using keywords, to search a large pre-prepared database. IT5.9 Can add simple formulae to spreadsheets, such as SUM, MAX, MIN and AVERAGE, enter data and use filters to sort information. IT5.10 Can use a spreadsheet to produce bar and pie charts.		