

Childwall Valley - Computing across the Curriculum Long Term Planning Map - Y6

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	Living things and their habitats	Light	Evolution & Inheritance	Electricity		Animals inc Humans
History/ Geography	UK Energy: UK study on energy.	A Local History Study: WW2	Comparison Study - UK, European country and North America:	The Viking & Anglo Saxon Struggle for the Kingdom of England to the time of Edward the Confessor	Earthquakes	History thematic study Changing Role of Women
Art / DT	Art – Printing - Tyree Guyton - transforming communities - link to Baltic triangle	DT: Computer aided designing using Tynker pad		Art – Sculpting - Lamb bananas - wire and modroc - Taro Chiezo	DT – Cooking – to make a curry	Art – Drawing - Helen Zughuib linked to architecture - women behind the most iconic buildings

Key Skills
(used throughout all areas of Computing)

- KS6.1 When using a mouse or trackpad, be able to use left/right/double click and scroll.
- KS6.2 When typing, be able to hold two hands over different halves of the keyboard and use more than two fingers to enter text, with increasing speed and accuracy.
- KS6.3 Be able to save, name and retrieve work effectively to a suitable location.
- KS6.4 If appropriate, can change print properties to affect the appearance of a printed document.
- KS6.5 Be able to efficiently navigate a folder system to find and open a specific file e.g. Shared Drive, iPad camera roll or Dropbox.
- KS6.6 Be able to create suitably named folders to organise documents, using appropriate file paths.
- KS6.7 Can show knowledge of how to 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. Y6 should be working around Course F 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**

CS6.1, CS6.2, CS6.3, CS.6.4, CS6.5

Control and Programming

Spritebox

In a gaming environment, children sequence and debug instructions to solve problems. [Spritebox Online](#)

CS6.1, CS6.2, CS6.3

Scratch

Make a simple maze game linked to Heroes and Villains. Introduce conditionals such as 'when' and 'until'. See [here](#) for an example.

Lightbot App

Revise basic sequencing and problem solving skills and introduce procedures, loops and conditional language. [Online version..T](#)

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.

Scratch Whack-a-Mole Game

Add a variety of sprites and program them to move in different ways using a forever loop. Program them to change and hide

How do search engines work?

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

		CS6.1, CS6.2, CS6.3, CS.6.4, CS6.5	CS6.1, CS6.5	CS6.2, CS6.3, CS6.4, CS6.5	once clicked and then show again after a period of time. Add variables of score and time. CS6.1, CS6.2, CS6.4	additional research to follow lines of enquiry.
Key Skills	<p>CS6.1 When debugging, can use abstraction to filter out extraneous detail and debug the program.</p> <p>CS6.2 Can use variables efficiently. Be able to create their own variable and use this within a computer program to manipulate data.</p> <p>CS6.3 Be able to use logical operations (not, or, and) to alter and control the outcome of a series of commands.</p> <p>CS6.4 Be able to use a wider range of events (such as broadcasts) and use them efficiently within programs to start and stop scripts.</p> <p>CS6.5 Can demonstrate an understanding of what subroutines (e.g. functions and procedures) are and be able to create them within a computer program to store and retrieve data.</p>					

Digital Literacy

Tutorial Link

Research: Internet	<p>Look at information from different viewpoints and validate information. <i>Possibly link to English or a class debate.</i> Criteria here: Evaluating Internet Resources Further resources here <i>(could be set as a homework task)</i> DL6.2</p> <p>BBC Science Bitesize Watch videos and complete activities to learn about classification.</p>	<p>Accurate Web Searches Discuss how students found out about different questions when researching WW2. What keywords did they use? How useful was the information on the website. How did they use the hyperlinks to find more information? Comment on the media on the website to present the information. DL6.1, DL6.2</p>	<p>Advanced Google search Undertake Boolean searches (AND/OR Same as searches) to find out about energy resources. Continue to use these research skills throughout the year in other areas. Refine web search techniques Additional materials here DL6.1</p> <p>BBC Science Bitesize Watch videos and complete activities to learn about</p>	<p>Range of search engines Find information about Vikings. Compare the range of filters/tools they provide. Look at advanced image search tools for Google, Bing Ask and Yahoo. T DL6.1, DL6.2, DL6.3</p> <p>BBC Science Bitesize Watch videos and complete activities to learn about electricity. DL6.2</p>	<p>Plausibility Look at spoof websites and how they 'appear to be true'. Teacher resources here: and: Eduscapes and Victorian Robots DL6.2, DL6.3</p> <p>Google Expeditions Use the VR headsets for pupils to experience Earthquakes to inform and stimulate writing. DL6.2</p>	<p>Citing Sources Pupils reflect on the importance of citing all sources when they do research into the role of women. They then learn how to write bibliographical citations for online sources. Teacher resources. DL6.3</p> <p>BBC Science Bitesize Watch videos and complete activities to learn about the circulatory system and health.</p>
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	<p>DL6.2</p> <p>Google Expeditions Use the VR headsets for pupils to experience how wind becomes energy to inform and stimulate writing.</p> <p>DL6.2</p>	<p>BBC Science Bitesize Watch videos and complete activities to learn about light and dark.</p> <p>DL6.2</p> <p>Google Expeditions Use the VR headsets to experience the WW2 to inform and stimulate writing.</p> <p>DL6.2</p>	<p>adaptation, inheritance and evolution. And fossils.</p> <p>DL6.2</p>			<p>DL6.2</p>
	<p>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.</p> <p>Online Quizzes Sign up to one or both of Kahoot! Or Quizizz to take part in online quizzes (this is easily linked to any topic throughout the year).</p> <p>DL6.4</p>					

	<p>Common Sense Media lesson Media balance In this lesson pupils will reflect on how balanced they are in their daily lives. Consider what "media balance" means, and how it applies to them. They will then create a personalised plan for healthy and balanced media use. DL6.5</p>	<p>Common Sense Media lesson You Wont Believe this! The internet is full of catchy headlines and outrageous images, all to make us curious and get our attention. In this activity the pupils will understand what "the curiosity gap" is; explain how clickbait uses the curiosity gap to get your attention and use strategies for avoiding clickbait DL6.2</p>	<p>Common Sense Media lesson Beyond Gender Stereotypes In this lesson pupils will understand and Define "gender stereotypes" and describe how they can be present online. They will also learn how gender stereotypes can lead to unfairness or bias. Finally, they will create an avatar and a poem that shows how gender stereotypes impact who they are. DL6.5</p>	<p>Common Sense Media lesson Digital Friendship In this lesson pupils will Compare and contrast different kinds of online-only friendships and describe the benefits and risks of online-only friendships. They will learn how to respond to an online-only friend if the friend asks something that makes them uncomfortable DL6.5</p>	<p>Common Sense Media lesson Cyber bullying In this lesson pupils will learn about cyber bullying and what they can do to stop it DL6.5</p>	<p>Common Sense Media lesson Reading the News In this lesson pupils will learn about the purposes of different parts of an online news page. They will identify the parts and structure of an online news article and finally learn about things to watch out for when reading online news pages, such as sponsored content and advertisements. DL6.2, DL6.3</p>
<p>Modelling and Simulations</p>	<p>Energy Island app Use the app to simulate the powering of the island to see how sustainable power can be generated lessening</p>	<p>CoSpaces Edu Using the online interface on PC or iPad app, pupils can create a virtual WW2 Museum using 3D design tools. These experiences can be</p>	<p>Google Earth Compare North and South America and a European location, investigate at different scales. Use Street View and 360°</p>	<p>Electricity Simulation Use the simulation link to explore the different parts of a circuit and how altering them affects the outcome of the circuit. Link here</p>		<p>The Human Body This website allows you to explore the different systems of the human body and view digital models of how they function. Human Body models</p>

	<p>damage to the environment. DL6.6</p> <p>Energy Farm website Use the website link here to have pupils complete their own energy simulations. They must select from a number of different energy systems to investigate which are the most affordable or impact the least on the environment when running a farm. DL6.6</p>	<p>explored through VR headsets. Basic account is free but extra features are unlocked with subscription. DL6.6</p>	<p>images to explore key locations further. T DL6.6</p> <p>PhET Inheritance simulation Use the simulation to show how inheritance, and environmental factors impact a species' survival. Link here DL6.6</p>	<p>DL6.6</p> <p>PhET circuit construction simulation Use the simulation to create different types of circuits and learn about the various components. Link here DL6.6</p>		DL6.6
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Key Skills	<p>DL6.1 Be able to search the internet for specific information using tools such as Google Advanced Search, discerning how results are ranked.</p> <p>DL6.2 Be able to identify irrelevant, implausible and inappropriate information, checking for bias.</p> <p>DL6.3 Can show an awareness that some media is copyrighted and cannot be used without permission.</p> <p>DL6.4 Be able to initiate and take part in collaborative learning using a variety of digital platforms.</p> <p>DL6.5 Be able to develop and understand a suitable code of conduct for internet use, and explain what to do in cases of cyberbullying</p> <p>DL6.6 Can use modelling software to create detailed virtual environments or simulations.</p>
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Information Technology

Tutorial Link

Word Processing and Desktop Publishing	<p>Microsoft Word or Google Docs Create a formal document. Focus on layout and justification features</p>	<p>Microsoft PowerPoint or Google Slides Create a "Choose Your Own Adventure" style non-linear narrative, by</p>	<p>Google Earth Projects Class will need a Google account to login. Add information and images to a tour of North American</p>	<p>Typing practice Play online typing games to improve typing speeds and skills. Children can choose their difficulty</p>	<p>Adobe Spark Page app or online Simulate a website to link to the topic of earthquakes, combining images</p>	
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	<p>e.g. a letter to the local council asking for more solar panels on council buildings</p> <p>IT6.1, IT6.2</p>	<p>hyperlinking slides with choices in a WW2 Story based on e.g. Goodnight Mr Tom.</p> <p>IT6.1, IT6.2</p>	<p>tourist attractions located within Google maps. Research, plan and write in English or geography lessons in advance. Part way through reviewing each others work to make improvements.</p> <p>Link here</p> <p>IT6.1, IT6.2</p>	<p>to differentiate the task.</p> <p>KS6.2</p>	<p>and text. Use the slideshow option to group similar ideas together. (A free school account will be required for Adobe). T</p> <p>IT6.1, IT6.2</p>	
<p>Multimedia</p>	<p>Lit Film Fest</p> <p>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.)</p> <p>IT1.4</p>					
	<p>Sketchpad online</p> <p>Use the digital art website to combine shapes and colours to draw Tyree Guyton inspired pictures. <i>This could be done in art lessons.</i></p> <p>IT5.5</p>	<p>Adobe Spark Video app or online</p> <p>Combine images, text and narration where each slide is a scene relating to a stanza from a war poem. Use this to narrate the poem with respect to the subject and to encourage appropriate expression. (A free school account will be required for Adobe). T</p> <p>IT6.1, IT6.2</p>	<p>Garageband app</p> <p>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.</p> <p>IT6.4</p>	<p>iMotion app storytelling</p> <p>Create a stop motion animation to tell a story written in English times. Children can draw and cut out their 2D characters and maybe create an A3 background for their film. Move characters a tiny amount between photos. Add speech bubbles for multiple photos to allow time to read. Finished films could be edited in a video making app, adding titles and music. The scripts and shots could be</p>	<p>iMovie app</p> <p>Create a movie trailer. This could be as an advert for an Earthquake film based on a story written in English. Adapt a trailer storyboard template in app. 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.</p> <p>IT6.3, IT6.4</p>	<p>Green Screen</p> <p>Create a video of children acting out their own scripts as experts travelling back in time to meet Women in different roles, direct and film as a group. Use Doink App on iPad. Use iMovie app to edit scenes and edit videos.</p> <p>IT6.3</p>

				planned and pre-written using the relevant storyboard template. These can be downloaded from here . IT6.3, IT6.4 IT6.3, IT6.4		
Data Handling	<p>Airtable WW2 tanks Use Airtable to create a collaborative database linked to WW2 e.g. WW2 tanks or planes. Decide on fields as a class and collect data Sort and filter the relevant information. Children can research the chosen area, and add fields (e.g. type, name, max speed, range, crew, armour, weight) and then input into the Airtable. By searching the database, pupils can answer questions as set by the teacher. (hi-impact support available If required. Logins needed, 1 login per group of 4-6.) IT6.5, IT6.6</p>	<p>Toolbox app Use the seismometer function to demonstrate how earthquakes are measured. Possibly use this in an investigation into how structures withstand different forces. IT6.8</p>	<p>Cardiio app Use data logging of heart rate, as part of a science lesson or investigation. IT6.8</p>	<p>Microsoft Excel or Google Sheets Organise data research about North American cities. Answer specific questions by sorting and filtering. Extend to use conditional formatting. IT6.5, IT6.6, IT6.7</p>	<p>Galactica Luxmeter app Take light readings from around the school. Find and record where in the school has the most light using the Skitch app. Use arrows and coloured spots on the map. IT6.8</p>	
Key Skills	<p>IT6.1 Can independently plan and structure the layout of multimedia presentations, drawing on a range of different techniques and styles as appropriate for the task.</p> <p>IT6.2 Be able to make appropriate use of hyperlinks to produce a non-linear presentation or document.</p> <p>IT6.3 Can create, edit and refine media to ensure quality.</p> <p>IT6.4 Be able to import sounds into sound editing software, layering and editing to refine their work.</p> <p>IT6.5 Be able to organise data by independently designing fields and records in a database.</p> <p>IT6.6 Be able to query a large pre-prepared database using 'greater and less than', 'equal to' and 'contains'.</p> <p>IT6.7 Can add data validation to spreadsheets, including drop down lists and conditional formatting.</p> <p>IT6.8 Can export and analyse continuous data from data logging and present in graph form.</p>					