

## Childwall Valley - Computing across the Curriculum Long Term Planning Map - Y4

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	Electricity	States of Matter	Sound	Animals including Humans	Living Things and their Habitats	
History/ Geography	Rivers and the Water Cycle	Titanic	Mountains	The Roman Empire and its impact on Britain Include Boudicca	Biomes & Vegetation Belt and Climate	Ancient Greece – a study of Greek life and achievements & their influence on the Western World
Art / DT	DT - Electricity - To make a night light	Art – Sculpting - wire sculpting - Alberto Giacometti Robin Wright (Trentham gardens)	Art – Drawing – To focus on drawing landscapes inspired by the work of Kyffin Williams	DT – To make a pizza with a mixture of toppings	DT – frame structures – To make a mini greenhouse	Art – Printing – To create a print in the style of Andy Warhol (EYFS)

**Key Skills**  
(used throughout all areas of Computing)

- KS4.1 When using a mouse or trackpad, be able to use left/right/double click and scroll.
- KS4.2 When typing, can hold two hands over different halves of the keyboard and use more than two fingers to enter text.
- KS4.3 Be able to save, name and retrieve work effectively to a suitable location.
- KS4.4 If appropriate, know how to print a document.
- KS4.5 Be able to navigate a folder system to locate a specific file e.g. Shared Drive, iPad camera roll or Dropbox.
- KS4.6 Know and can use keyboard function keys e.g. shift, caps lock, num lock, space bar, return.

## Computer Science

[Tutorial Link](#)

### Code Studio

[Code Studio](#). Create or print off existing user accounts for class on the website. Y4 should be working around Course D 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**

**CS4.1, CS4.2, CS4.3, CS4.4, CS4.5**

### Control and Programming

#### LightBot app

Solve problems by sequencing directions and debugging, extending to the use of procedures (actually a function) by identifying repeating patterns. **T**  
**CS4.1, CS4.2, CS4.3**

#### Dash robot

Control the robot to tell a particular story that the pupils have prepared and then programmed into the wonder app.  
**CS4.1, CSC4.2, CS4.4**

#### Tynker app (Dragon Quest)

Work through the various levels in each of these different games within the app. Each game is broken into different sections, each focussing on different computing concepts such as, sequencing, debugging, repeats and conditionals (selection).  
**CS4.1, CS4.2, SC4.3, SC4.5**

#### Learn Code with El Chavo app

Develop sequencing skills (Level 4).  
**CS4.1, CS4.2**

#### Scratch Jr app **T**

Make a presentation or story linked to Habitats. Add in sprites and backgrounds to a range of different habitats, and program the sprites to move appropriately. The speech command can be used to present information. Conditionals can be used to allow the sprites to interact with one another, using if,

#### What is the world wide web?

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.

					when, whilst, repeat until. <b>CS4.1, CS4.2, CS4.4</b>					
<b>Key Skills</b>	CS 4.1	Design, test and amend programs to achieve an intended objective, including controlling an external output.	CS 4.2	Be able to find errors in a program of their own design and successfully debug to achieve a specific goal.	CS 4.3	Can use and change a pre-written function.	CS 4.4	Understands a wider range of 'events' such as sprite interactions and button presses, and can use them within programs.	CS 4.5	Be able to use nested loops to increase the efficiency of a program.

<b>Digital Literacy</b>						
<b>Tutorial Link</b>						
<b>Research: Internet</b>	<b>Science resources</b> Watch videos and explore activities linked to electricity <a href="#">BBC Bitesize</a> <b>DL4.3</b>	<b>Science resources</b> Watch videos and explore activities linked to states of matter. <a href="#">BBC Bitesize</a> <b>DL4.3</b>	<b>Compare websites</b> Investigate 3 different websites about an aspect of mountains and compare and contrast their usefulness. Generate success criteria in advance e.g. appearance, information, links, images and develop a scoring system. The teacher could suggest 3 or 4 websites and share them with the class via web shortcuts of the shared area. <b>DL4.1, DL4.2, DL4.3</b>	<b>Develop key search questions T</b> Find information about Anglo-Saxons and Scots. Introduce/recap keyword searches using the Common sense Materials. Teacher resources can be found here: <a href="#">link here</a> <b>DL4.1, DL4.2, DL4.3</b>	<b>Image search toolsT</b> Explore the advanced search tools on Google or Bing to find suitable images related to the Biomes. Discuss how choosing different criteria would affect the returns e.g. Search for clipart, black and white images, size etc. Save and store images on iPad or network for use in Word activity. Save to a shared area or Google Drive / Dropbox folder. <b>DL4.1, DL4.2, DL4.3</b>	<b>Add a web page/site</b> Select a web page linked to key artists to Favourites list/ bookmark for use at another time e.g. Word document or shared folder as a link. <b>DL3.1, DL3.2, DL3.3, DL3.4</b>
	<b>Google Expeditions</b> Use the VR headsets for pupils to experience the journey of a river to inform and stimulate writing. <b>DL4.3</b>		<b>Google Expeditions</b>			

			<p>Use the VR headsets for pupils to experience mountains of the world to inform and stimulate writing. <b>DL4.3</b></p>		<p><b>Google Expeditions</b> Use the VR headsets for pupils to experience biomes to inform and stimulate writing. <b>DL4.3</b></p>	
<p><b>Online Communication and eSafety</b></p>	<p><b>Using the VLE</b> 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><b>Online Quizzes</b> Introduce <a href="#">Kahoot!</a> or <a href="#">Quizizz</a> websites for pupils to participate in online quizzes and continue throughout the year. <b>DL4.7</b></p>					
	<p><a href="#">Password powerup</a> <b>Common Sense media lesson</b> Explore reasons why people use passwords, learn the benefits of using passwords and discover strategies for creating and keeping strong, secure passwords. <b>DL4.4</b></p>	<p><a href="#">Rings of Responsibility</a> <b>Commonsense Media lesson.</b> How does the Internet connect you to others? Students explore the concept that people can connect with one another through the Internet. They understand how the ability for people to communicate online can unite a community. Create a set of Class Rules for working online. <b>DL4.4, DL4.5</b></p>	<p><a href="#">This is me - Online</a> - <b>Common Sense media lesson</b> Pupils explore online identities. From selfies to social media, many students and adults create unique online identities for ourselves, and our students are no different. This activity will help pupils think critically about online identities they are creating. <b>DL4.4</b></p>	<p><a href="#">Our Digital Citizenship Pledge</a> <b>Common Sense media lesson</b> Belonging to various communities is important for kids' development. But some online communities can be healthier than others. Show your students how they can strengthen both online and in-person communities by creating norms that everyone pledges to uphold. <b>DL4.4, DL4.5, DL4.6</b></p>	<p><a href="#">The Power of Words</a> <b>Common Sense media lesson</b> Discuss that they may get online messages from other people that can make them feel angry, hurt, sad or fearful. Pupils identify actions that will make them strong in the face of cyberbullying. <b>DL4.4</b></p>	<p><a href="#">Seeing is believing</a> <b>Common Sense media lesson</b> The web is full of photos, and even videos, that are digitally altered. It's often hard to tell the difference between what's real and what's fake. In this lesson pupils will learn to ask critical questions about why someone might alter a photo or video in the first place. <b>DL4.3, DL4.4</b></p>

<p style="text-align: center;"><b>Modelling and Simulations</b></p>	<p><b>Electricity resources</b> Use the <a href="#">link</a> to find several different simulations and activities based around the topic of Electricity. Particular activities, within the link, that may be relevant are: <i>Changing Circuits</i> <i>Circuits and Conductors</i> <i>The Blobz Guide</i> <i>Switched on Kids</i> <b>DL4.8</b></p>	<p><b>States of Matter PhET Simulation</b> Use the relevant <a href="#">simulations</a> to demonstrate the chemical bonds affecting states of matter. <b>DL4.8</b></p>	<p><b>Google Earth</b> Explore mountains, rivers and coasts on Google Earth. Compare human and physical features. Locate global mountains ranges and identify correlation with continental plate boundaries, trace rivers from their source to mouth. Hunt for coastal features. <b>T</b> <a href="#">Link here</a> <b>DL4.8</b></p>	<p><b>Health Simulations</b> Explore the digestive system with the following simulation: <a href="#">Link here</a> Please note, the simulation may take some additional explaining from the teacher. <b>DL4.8</b></p>	<p><b>Google Earth</b> Look at the physical geography of different climate zones on <a href="#">Google Earth</a>. Look at physical features and also look at positions on the 3D globe. Identify key landmark features using the aerial view. Use Street view and 360° images to compare and contrast with another locality. <i>This could be done as part of a Geography lesson.</i> <b>T</b> <b>DL4.8</b></p>	<p><b>Ancient Civilisations</b> Use the Soundgate App to interactively explore a number of archaeological sites as they might have looked in the ancient past. Three World Heritage Sites are virtually modelled visually and sonically, including prehistoric caves in Spain; Stonehenge in England; and Paphos Theatre in Cyprus. You can trigger musical sounds that may have been heard in the past, and hear how the acoustics of the space enhances them. <b>DL4.8, DL4.3</b></p>
<p style="text-align: center;"><b>Key Skills</b></p>	<p>DL4.1 Can identify and use keywords for effective Internet searches. DL4.2 Can select relevant information (pictures and text) to use in other software. DL4.3 Can use information found online to answer specific questions, and evaluate how appropriate a site is. DL4.4 Be able to explain how to keep yourself safe online DL4.5 Demonstrates respect towards others on the internet. DL4.6 Can independently share suitable pictures and work to an online digital platform. DL4.7 Able to take part in digital surveys and quizzes. Analyse data with support. DL4.8 Can predict the effect(s) of changing the variables in digital simulations and observe the results.</p>					

Tutorial Link

Word Processing and Desktop Publishing

**Typing Skills**

Use [BBC dancemat typing](#) activities to improve keyboard skills. Children can choose their difficulty to differentiate the task.

**KS4.2**

**Google Earth Project**

In [Google Earth](#) create a 3D tour presentation around the Titanic (construction to sinking). 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.

**IT4.4**

**Microsoft PowerPoint/ Google Slides**

Present a non-chronological report on European mountains. Add sounds as well as images and text. Experiment with animations and slide transitions. **T**

**IT4.1, IT4.2**

**Storyboard That**

Create a comic-strip story linked to the Roman Empire on PCs with the [Storyboard That website](#). Initially plan the story first, considering scenes and dialogue and story progression. Use Google logins to access via PCs. Use relevant characters (mythology section) and backgrounds from the site. Change elements of the appearance as relevant. Format speech bubbles and captions with consideration for the audience. NB Pupils will need individual logins.

**IT4.1, IT.4.2**

**Microsoft Word/Google Docs**

Develop basic word processing skills. Write up a persuasive argument about endangered biomes, focusing on layout, adding borders, changing fonts and inserting pictures while also teaching skills of saving and opening work correctly. **T**

**IT4.1, IT4.2**

**Adobe Spark Page app/website**

Use the app or [website](#) (a login will be required) to create a webpage to present writing based on Ancient Greek life.

**IT4.1, IT4.2**

**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**

	<p><b>Shadow Puppet Edu app</b> Add images to represent the different climates into the app, add captions and then narrate a scientific explanation of biomes. Watch back and evaluate to ascertain what improvements can be made relating to clarity, expression, interest levels and engagement of their audience. <b>IT4.1, IT4.3, IT4.4</b></p>	<p><b>Garageband app</b> Create music by exploring different instruments and loops building up layers of sound to create a musical piece. <b>T</b> <b>IT4.6</b></p>	<p><b>Use a paint app/software</b> Create digital art Andy Warhol repetitions. Import an image and duplicate and colour enhance in different ways. Model how to select colours, choose brush styles and textures. Developing skills in using all the tools available to create art considering the audience. Use <a href="#">Sketchpad online.</a> <b>IT4.5</b></p>	<p><b>Adobe Video Spark app/website</b> Use the Adobe Video Spark app or <a href="#">website</a> (a school or class account login will be required) to create an information film on Vikings with the narration planned during English. <b>IT4.1, IT4.2</b></p>	<p><b>Green Screen</b> Use the DoInk green screen app to film children against the cloth backdrop. Add in scenes from mountains. Children act out pre-written information scripts. Edit together the scenes in e.g. iMovie and add effects and titles. <b>IT4.3, IT4.4, IT4.5</b></p>	<p><b>iMotion app (water cycle)</b> Use stop motion to animate the process of the water cycle. Use clay/play dough, paper and other materials to show the different stages. Each stage could be animated separately and then edited together using Puppet Edu. Save the project as video and share. <b>IT4.3, IT4.4</b></p>
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<p style="text-align: center;"><b>Data Handling</b></p>	<p><b>Spreadsheets</b> A variety of resources and lesson plans <a href="#">here</a> or complete the <a href="#">Shopping list Spreadsheet</a> Edit the items in the list and revise the prices. Pupils can copy the formula to work out the number of items times the prices by dragging down the cell into the cells below. Pupils can be given a budget to complete based on a family for a week, a group of friends etc. <b>T</b> <b>IT4.9</b></p>	<p><b>Galactica Luxmeter app</b> 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. <b>IT4.7</b></p>	<p><b>Branching database</b> Classify different animals by asking questions and sorting by the answer on the <a href="#">J2e</a> website. <i>This could be done in science lessons.</i> <b>IT4.8</b></p>	<p><b>Decibel X app</b> Record the volume of sound either as part of a science investigation. Alternatively visit different locations within school or the grounds and take pictures at each place in the app to record the sound levels. These results can be plotted on a digital <a href="#">graph maker</a> or in Pic Collage on a plan of the school to spot trends. <b>IT4.7</b></p>
	<p><b>Key Skills</b></p> <p>IT4.1 When word processing, can use font sizes and effects appropriately to fit a purpose and audience of text.</p> <p>IT4.2 Can use a range of features of layout and design such as text boxes, columns and borders, to control the layout and presentation of a document.</p> <p>IT4.3 Be able to edit video footage and still images to create a video presentation or animation for an audience.</p> <p>IT4.4 Able to add text, sound effects and other graphic effects to a video presentation.</p> <p>IT4.5 Can make use of a range of visual effects such as filters, hues and combining images to give different effects.</p> <p>IT4.6 Able to layer sounds using music composition software.</p> <p>IT4.7 Be able to collect snapshot data from data loggers, selecting the appropriate tool.</p> <p>IT4.8 Be able to enter data into a graphing package and use it to create a range of graphs, and to interpret data.</p> <p>IT4.9 Understand that spreadsheets perform calculations. Explore the effect of changing the cell values in spreadsheets and use them to make and test predictions.</p>			