



Overchurch Juniors school- Computing across the Curriculum Long Term Planning Map - Year 4

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
Science	Solids, Liquids, Gases	Water cycle, making Sound	Humans & Animals	Hearing Sound	Electricity	Sound: Pitch and Volume
English	The Journey	The Lost Happy Endings	Charlotte's Web	Arthur and the Golden Rope	Varjak Paw	Manfish
History	Black History Month Martin Luther King	Ancient Greece	Local History Study- Birkenhead		The Roman Empire and its impact on Britain	
Geography	Greece Drawing accurate maps with more complex keys.		Local Area Study- Birkenhead and Barnston.		Comparison study of Italy, UK and Canada	Rivers and mountain Water cycle
DT	Electrical Systems		Food Bird Feeders		Mechanical Systems Levers and linkages Pop up books.	

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

The extension activities below are non-essential, but teachers may wish to vary and consolidate learning from Code Studio using additional tools.

Control and Programming

Playground Games

If not done in Y3, use CS Unplugged playground games to introduce flowcharts. Debug faulty code. Playground games: [\(hi-impact resources\)](#)
CS4.1, CS4.2

Purple Mash: 2Code Gibbon

[Functions](#): Learn about functions.
CS4.1, CS4.2, CS4.3

Tynker (Space Cadets and Dragon Quest)

[online](#)
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

Purple Mash: 2Code Gibbon

[Splatty Bug](#): Splat the bugs before the time is up.
CS4.1, CS4.2

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.

LightBot app or [online](#)

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

Key Skills

- 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.

Digital Literacy

Tutorial Link

Research: Internet

Save and store images

Use Google images for use in other multimedia activities relating to Martin Luther King. Save to a shared area or Google Drive/Dropbox folder, if applicable.

DL4.2

BBC Bitesize: States of Matter

Watch videos and explore activities linked to states of matter.

[BBC Bitesize](#)

DL4.3

Image search tools T

Explore advanced search tools on Google to find suitable images related to Ancient Greece. Discuss how choosing different criteria would affect the returns. Save and store images on the network for use in Word activity.

DL4.1, DL4.2, DL4.3

BBC Bitesize: Water Cycle

Watch videos and explore activities linked to the water cycle. [BBC Bitesize](#)

DL4.3

Develop key search questions T

Find information about Birkenhead. Introduce/recap keyword searches using the Common sense Materials. Teacher resources can be found here: [link here](#)

DL4.1, DL4.2, DL4.3

BBC Bitesize: Nutrition

Watch videos and explore activities linked to a balanced diet.

[BBC Bitesize](#)

DL4.3

BBC Bitesize: Sound

Watch videos and explore activities linked to sound and vibrations

[BBC Bitesize](#)

DL4.3

BBC Bitesize: Electricity

Watch videos and explore activities linked to electricity

[BBC Bitesize](#)

DL4.3

Google Earth: Exploring Canada's National Parks

In [Voyager](#) follow the tour around Canada or Italy. Set pupils specific questions to answer as they explore to contrast between Italian and Canadian locations as well the UK.

DL4.3

Compare websites

Investigate 3 different websites about an aspect of the Roman Empire 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.

DL4.1, DL4.2, DL4.3

<p>Online Communication and eSafety</p>	<p>Password powerup Common Sense media lesson Explore reasons why people use passwords, learn the benefits of using passwords and discover strategies for creating and keeping strong, secure passwords. DL4.4</p>	<p>Rings of Responsibility Commonsense Media lesson. 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. DL4.4, DL4.5</p>	<p>This is me - Online - Common Sense media lesson 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. DL4.4</p>	<p>Our Digital Citizenship Pledge Common Sense media lesson 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. DL4.4, DL4.5, DL4.6</p>	<p>The Power of Words Common Sense media lesson 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. DL4.4</p>	<p>Seeing is believing Common Sense media lesson 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. DL4.3, DL4.4</p>
<p>Modelling and Simulations</p>	<p>States of Matter PhET Simulation Use the relevant simulations to demonstrate the chemical bonds affecting states of matter. DL4.8</p>	<p>Google Earth Look at the geography of Greece on Google Earth. Look at human and 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> T DL4.8</p>	<p>Health Simulations Explore the digestive system with the following simulation: Link here Please note, the simulation may take some additional explaining from the teacher. DL4.8</p>	<p>Google Earth Use Google Earth to explore Birkenhead and Barnston. Look at an urban and rural area comparison. T DL4.8</p>	<p>Electricity resources Use the link 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> DL4.8</p>	<p>Google Earth Use Google Earth to explore rivers and follow the River Mersey from source to mouth highlighting physical and human features along the way. T DL4.8</p> <p>Purple Mash 2DIY3D Design and plan a 3D maze game based on Romans. DL3.5, DL3.6</p>
<p>Key Skills</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.</p>					

DL4.8 Can predict the effect(s) of changing the variables in digital simulations and observe the results.

Information Technology

[Tutorial Link](#)

Word Processing and Desktop Publishing

Typing Skills

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

KS4.2

Purple Mash writing Frame

Storyboard That

Create a comic-strip story linked to Ancient Greece 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

Microsoft Word/Google Docs

Develop basic word processing skills. Present writing linked to Charlotte's Web, focusing on layout, adding borders, changing fonts and inserting pictures while also teaching skills of saving and opening work correctly. **T**

Adobe Spark Page

Use the [website](#) (a login will be required) to create a webpage to present writing alongside based on the local history of Birkenhead.

IT4.1, IT4.2

Microsoft PowerPoint/Google Slides

Present a non-chronological report to compare the UK, Italy and Canada. Add sounds as well as images and text. Experiment with animations and slide transitions. **T**
IT4.1, IT4.2

Purple Mash writing Frame

[Rivers](#). Use some of the writing frames. E.g. Describe the features of a river from the source to the sea.

IT4.1, IT4.2

	<p>Martin Luther King Use some of the writing frames. E.g. Create an information text showing what you know about Martin Luther King Jr. IT4.1, IT4.2</p>	<p>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, IT4.2</p> <p>Purple Mash writing Frame Ancient Greece Use some of the writing frames. E.g. Write about the life of children in Ancient Greece. IT4.1, IT4.2</p>	<p>IT4.1, IT4.2</p>		<p>Purple Mash writing Frame Romans. Use some of the writing frames. E.g. Write a newspaper report about the Roman Invasion. IT4.1, IT4.2</p>	
<p>Multimedia</p>	<p>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). IT4.1, IT4.2, IT4.3</p>					
	<p>Adobe Spark Video Use the Adobe Spark Video website (a school or class account login will be required) to create a fact based presentation about the geography of Ancient Greece. IT4.1, IT4.2</p>	<p>Purple Mash 2 Animate Create animated scenes by repeating and changing images in a storyboard to show the sequence of events in the water cycle Link IT4.3, IT4.4</p>	<p>Purple Mash 2Sequence Use the app to drag and drop sounds into the grid: explore harmony and build up musical scores. IT4.6</p>	<p>Audacity Record a radio advert to promote tourism on the Wirral. Record either using a digital microphone, or directly into Audacity. Add to Audacity (if needed), where the raw recording can be edited, manipulated and have musical beds added. Sound effects from websites such as Sound Bible and Freesound. T IT4.6</p>	<p>Online Roman mosaics Pupils can create their own Roman mosaic designs online using this website. IT4.5</p>	<p>Chrome Music Lab Use Chrome Music Lab online to explore how sounds can be manipulated digitally in a variety of ways. IT4.6</p>

<p style="text-align: center;">Data Handling</p>	<p>Purple Mash 2Graph Use the app to create a range of block, pie and line graphs to show information. IT4.8</p>	<p>Purple Mash 2Question Use the apps to interrogate existing branching databases and create records to populate their own. IT4.8</p>	<p>Decibel X app Use iPads to 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 graph maker or in Pic Collage on a plan of the school to spot trends. IT4.7</p>	<p>Purple Mash 2calculate Use activities 6-10 to begin to develop use of spreadsheets IT4.9</p>	
<p style="text-align: center;">Key Skills</p>	<p>IT4.1 When word processing, can use font sizes and effects appropriately to fit a purpose and audience of text. 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. IT4.3 Be able to edit video footage and still images to create a video presentation or animation for an audience. IT4.4 Able to add text, sound effects and other graphic effects to a video presentation. IT4.5 Can make use of a range of visual effects such as filters, hues and combining images to give different effects. IT4.6 Able to layer sounds using music composition software. IT4.7 Be able to collect snapshot data from data loggers, selecting the appropriate tool. IT4.8 Be able to enter data into a graphing package and use it to create a range of graphs, and to interpret data. 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>				