

Overchurch Juniors school - Computing across the Curriculum Long Term Planning Map -Year 6

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	Humans		Electricity Light		Evolution and inheritance Human circulatory system, brain and body Charles Darwen	
English	There's a Boy in the Girl's Bathroom	Shackleton's Journey	Skellig	Rose Blanche	Hansel and Gretel	Shine
History	Monarchs and 1066 Black History Month Ibn Battuta	Monarchs chronological knowledge beyond 1066	Local History Study World War II		A non-European society The Mayans	
Geography	Polar regions		Locate countries in Europe		World geography – equator, latitude, longitude, Northern and Southern hemisphere, arctic circle and Antarctic.	
Music	Bob Marley Songs		Beatles Songs	1950s/1960s songs	Classroom Jazz1	Leavers Production
DT	Mechanical Systems Pulleys or gears Use a pulley system to drive your vehicle.		Textiles Combining different fabric shapes (including computer-aided design)		Food Celebrating culture and seasonality Bread	

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

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

Lightbot App

Revise basic sequencing and problem solving skills and introduce procedures, loops and conditional language. [Online version](#). **T**
CS6.1, CS6.5

Blockly Maze

Use the [online](#) Blockly games in order to further apply the coding knowledge children have absorbed already in their time at school. Use the Maze activity in particular to develop problem solving skills and use of conditional functions such as 'repeat' and 'if':
CS6.1, CS6.2

Lego Mindstorms (specialist equipment)

Create and program robots to solve particular problems. Use sensors and link to the light topic by programming to interact with different colours.
CS6.1, CS6.3

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 additional research to follow lines of enquiry.

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 once clicked and then show again after a period of time. Add variables of score and time.
CS6.1, CS6.2, CS6.4

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. (Free teacher accounts can be created and then children can generate their own login accounts).
CS6.1, CS6.3

Key Skills

- CS6.1 When debugging, can use abstraction to filter out extraneous detail and debug the program.
- CS6.2 Can use variables efficiently. Be able to create their own variable and use this within a computer program to manipulate data.
- CS6.3 Be able to use logical operations (not, or, and) to alter and control the outcome of a series of commands.
- 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.
- 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.

Digital Literacy

Tutorial Link

Research: Internet

Accurate Web Searches

Discuss the ways students found out about different questions when researching. 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 on Harriet Tubman.

DL6.1, DL6.2

Google Earth Voyager

Take a trip to the [South Pole](#) and explore different locations using Street View.

DL6.2

Look at information from different viewpoints

and validate information. *Possibly link to English or a class debate.*

Criteria here:

[Evaluating Internet Resources](#)

Further resources [here](#) (could be set as a homework task)

DL6.2

BBC Science Bitesize

Watch videos and complete activities to learn about [classification](#).

DL6.2

Range of search engines

Find information about WW2 locally. 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

BBC Science Bitesize

Watch videos and complete activities to learn about [electricity](#).

DL6.2

Plausibility

Look at spoof websites and how they 'appear to be true'.

[Teacher resources here](#) and [Eduscapes](#) and [Victorian Robots](#)

DL6.2, DL6.3

BBC Science Bitesize

Watch videos and complete activities to learn about [light and dark](#).

DL6.2

Advanced Google search

Undertake Boolean searches (AND/OR Same as searches) to find out about Mayans. Continue to use these research skills throughout the year in other areas.

[Refine web search techniques](#) [Additional materials here](#)

DL6.1

BBC Science Bitesize

Watch videos and complete activities to learn about [adaptation, inheritance and evolution](#). And [fossils](#).

DL6.2

Citing Sources

Pupils reflect on the importance of citing all sources when they do research. They then learn how to write bibliographical citations for online sources. [Teacher resources](#).

DL6.3

BBC Science Bitesize

Watch videos and complete activities to learn about the [circulatory system and health](#).

DL6.2

<p>Online Communication and eSafety</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>Google Earth Locate Polar regions and investigate at different scales. Use Street View and 360° images to explore key locations further. online. T DL6.6</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 DL6.6</p>	<p>Google Earth Locate European countries and investigate at different scales. Use Street View and 360° images to explore key locations further. online. T DL6.6</p>	<p>Google Earth Locate equator, latitude, longitude, Northern and Southern hemisphere, arctic circle and Antarctic online. T DL6.6</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 DL6.6</p>
<p>Key Skills</p>	<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>					

Information Technology

Tutorial Link

<p>Word Processing and Desktop Publishing</p>	<p>Microsoft Word or Google Docs Create a formal document. Focus on layout and justification features e.g. a biography of Harriet Tubman. IT6.1, IT6.2</p>	<p>Adobe Spark Page Online, simulate a website to link to the topic of monarchs, combining images and text. Use the slideshow option to group similar ideas together. (A free school account will be required for Adobe). T IT6.1, IT6.2</p>	<p>Google Earth Projects Class will need a Google account to login. Add information and images to a tour of WW2 countries 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. Link here IT6.1, IT6.2</p>	<p>Typing practice Play online typing game: Typing Club to improve typing speeds and skills. Children can choose their level of difficulty to differentiate the task and work through the different skills. KS6.2</p>	<p>Microsoft PowerPoint or Google Slides Create a "Choose Your Own Adventure" style non-linear narrative, by hyperlinking slides with choices in a Hansel and Gretel themed story. App and computer versions available. IT6.1, IT6.2</p>	<p>Purple Mash writing Frame Mayans Use some of the writing frames. E.g. Write an informative text about Mayan homes. IT6.3</p>
<p>Multimedia</p>	<p>Adobe Spark Video app or online Using the app or online, combine images, text and narration to create a guide to Polar regions. T IT6.1, IT6.2</p>	<p>Bandlab Use the website (login required). Create music by browsing loops. Choose one pack with a range of instruments. Add in the loops and control when they start and end and duration. Change the volume to control significance. Often playback and readjust. Create Bob Marley style tunes. IT6.4</p>	<p>WW2 Audacity Record a WW2 radio broadcast. Examples here to use during input. Digitally record dialogue, edit and add music and sound effects using Audacity desktop software. Use cut, copy, paste and effects such as amplify and fade in/fade out. Extend by adding sound effects. T Write scripts in English. Or use transcripts from the original broadcasts. IT6.4</p>	<p>Purple Mash 2 Animate Create animated scenes by repeating and changing images in a storyboard. Link. Use this to demonstrate electrical circuits connecting and lighting bulbs. IT6.1, IT6.30</p>	<p>Sketchpad online Use the digital art website to combine shapes and colours to draw Mayan artwork. <i>This could be done in art lessons.</i> IT6.3</p>	<p>Isle of Tune Use Isle of Tune website to explore ways of combining textures and sounds in loops and melodies to create music. <i>This could be incorporated into a music lesson.</i> IT6.4</p>

<p>Data Handling</p>	<p>Purple Mash 2investigate Organise data, design fields and populating records in a database, and then use a range of queries to answer specific questions. IT6.5, IT6.6</p>	<p>Purple Mash 2calculate Use activities 7-11 to begin to develop use of spreadsheets IT5.10</p>	<p>Spreadsheets Use Microsoft Excel or Google Sheets to input data related to Science or Maths topics. Use SUM, number operations and Average and add conditional formatting to colour cells. Then focus on filtering, data validation and conditional formatting to explore the data in more detail. Examples here T6.5, IT6.6, IT6.7</p>	<p>Galactica Luxmeter app Use the iPads to take light readings from around the school. Find and record where in the school has the most light. Use arrows and coloured spots on the map. IT6.8</p>	<p>Cardiio app Use the iPads for data logging of heart rate, as part of a science lesson or investigation. IT6.8</p>
<p>Key Skills</p>	<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. IT6.2 Be able to make appropriate use of hyperlinks to produce a non-linear presentation or document. IT6.3 Can create, edit and refine media to ensure quality. IT6.4 Be able to import sounds into sound editing software, layering and editing to refine their work. IT6.5 Be able to organise data by independently designing fields and records in a database. IT6.6 Be able to query a large pre-prepared database using 'greater and less than', 'equal to' and 'contains'. IT6.7 Can add data validation to spreadsheets, including drop down lists and conditional formatting. IT6.8 Can export and analyse continuous data from data logging and present in graph form.</p>				