



Overchurch Juniors school - Computing across the Curriculum Long Term Planning Map - Year 5

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	Lifecycles Living things and their environment Materials		Human life cycle		Forces Galileo and Newton Earth and beyond	
English	The Highway Man	Seasons of Splendour	Stormbreaker	The Errand	FARThER	King Kong
History	Black History Month Nelson Mandela	The Victorians linked to Port Sunlight	Britain's settlement by Anglo-Saxons and Scots		The Viking and Anglo-Saxon struggle for the kingdom of England to the time of Edward confessor	
Geography	Local Area Study		Weather	Types of settlement and land use	Brazil and the rainforest	
DT	Electrical Systems More complex switches and circuits (including programming, monitoring and control)		Structures Frame structures Anglo Saxon link Shelters		Food Quick and easy cupcakes Celebrating culture and seasonality	

<p>Key Skills (used throughout all areas of Computing)</p>	<p>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</p>
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Computer Science

Tutorial Link

<p>Control and Programming</p>	<p>Code Studio</p> <p>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</p> <p>CS5.1, CS5.2, CS5.3, CS5.4, CS5.5</p> <p>The extension activities below are non-essential, but teachers may wish to vary and consolidate learning from Code Studio using additional tools.</p>				
	<p>Spritebox app or online In a gaming environment, children sequence and debug instructions to solve problems website. CS5.1, CS5.2</p>	<p>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.</p>	<p>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</p>	<p>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</p>	<p>Lego Mindstorms (specialist equipment) Create and program robots to solve particular problems. Link to forces by covering the wheels in different materials to make a fair test into friction. CS5.1</p>

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

BBC Bitesize

Explore the videos and participate in activities and simulations to find out about [Life Cycles and Reproduction](#).

DL5.1

Google Earth

Voyager: In Mandela's Footsteps

Use [Voyager](#) in Google Earth to follow Nelson Mandela on his road to freedom and visit key sites from his life in Google Earth. Ask specific questions for pupils to answer.

DL5.1

Internet Research

When researching, use information found online to inform presentation work on Port Sunlight, 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

Compare 3 Websites

Explore information about weather 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

BBC Bitesize

Find out how [Humans Change During Their Lifetime](#).

DL5.1

Google Advanced search

Use a large database (e.g. Google search engine) to search for information e.g. about Anglo Saxons and Scots. 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

Google Earth

Voyager: Viking Explorers

Use [Voyager](#) in Google Earth to find out about the Vikings. Ask specific questions for pupils to answer.

DL5.1

Altered Images

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 about [Earth and Space](#).

DL5.1

<p>Online Communication and eSafety</p>	<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>	<p>Online Tracks Common Sense media materials Learn what a "digital footprint" is and identify the online activities that contribute to it. Identify ways they are -- and are not -- in control of their digital footprint and understand what responsibilities they have for the digital footprints of themselves and others. DL5.6</p>
<p>Modelling and Simulations</p>	<p>Parts of a flower model Use the model on the link below to investigate the different parts of a flower and their role in a plant's life cycle. Parts of a flower T DL5.8</p> <p>Google Earth Use the Google Earth website to explore the local area and compare features. Use street view and 360° views to contrast urban and rural locations. Pupil's findings can then be compared to what they can find in Atlases or on maps and globes. T DL5.8</p>	<p>Solids and liquids simulation Use the simulation on the link below to investigate how heating and cooling can affect different materials. Solid and liquid resources T DL5.8</p> <p>Reversible and irreversible changes simulation Use the simulation on the link below to investigate how some chemical changes can be reversed and some cannot. Changes simulation T DL5.8</p>			<p>Forces simulations Use the simulation on the link below to investigate different aspects of forces and the causes and effects that occur when they are in use: Forces resources T DL5.8</p> <p>Google Earth Use the Google Earth website to explore rainforests around the world and compare features. Use street view and 360° views to contrast urban and rural locations. Pupil's findings can then be compared to what they can find in Atlases or on maps and globes. T DL5.8</p>	<p>Google Earth Mars/Moon module Find out about the Red Planet or Moon using Google Earth software on laptops or desktop computers. T DL5.8</p> <p>If the Moon Were Only 1 Pixel Use the online tool to explore the scale of our solar system. DL5.8</p>

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

Tutorial Link

<p>Word Processing and Desktop Publishing</p>	<p>Typing practice: Lesson starter: Play online typing game: Nitrotype to improve typing speeds and skills. Children can choose their difficulty to differentiate the task. KS5.2</p>	<p>Google Earth Project In Google Earth create a 3D tour presentation around Birkenhead. From the menu, select <i>projects</i>. 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</p>	<p>Adobe Spark Page Use Adobe Spark Page website (a school or class account login will be required) to create a digital writing presentation based on different weather. Pupils should plan different sections to showcase their learning. The completed presentations can be shared online. IT5.1, IT5.2</p>	<p>Purple Mash writing Frame Anglo Saxons Use some of the writing frames. E.g. Write about the Norman invasion of Anglo-Saxon England. IT5.1, IT5.2</p>	<p>Microsoft PowerPoint or Google Slides Make a non-linear hyperlinked slide show presentation based on Vikings and Anglo-Saxons 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</p>	<p>Microsoft Word or Google Docs Use word processing software to write a summary of King Kong with images inserted. 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</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). IT5.1, IT5.2, IT5.4, IT5.6</p>					
<p>Purple Mash 2 Animate Create animated scenes by repeating and changing images in a storyboard. Link Use this to show the lifecycle of an animal. IT5.2</p>	<p>Pixlr online Use the website to edit the look and style of images taken from their fieldwork. Filters and various tools can be used to create different styles and outcomes. IT5.5</p>	<p>Sketchpad online Use the digital art website to combine shapes and colours to draw weather scenes. <i>This could be done in art lessons.</i> IT5.5</p>	<p>Adobe Spark Video Using the app or online, combine images, text and narration to create a video guide Britain's settlement by Anglo-Saxons. T IT5.1, IT5.2, IT5.4, IT5.6</p>	<p>Audacity Record play script based on Vikings and Anglo Saxons. 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</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</p>	

					adding sound effects. T Write scripts in English. IT5.6 Search for sound file using safe audio search sites e.g. Sound Bible FreeSound . T IT5.2	playback and readjust. IT5.6
Data Handling	Digital Graphing Use online graph maker to present data from science or maths investigations. Students can select the most appropriate form of graph to present their data. IT5.9	Purple Mash 2calculate Use activities 1-6 to begin to develop use of spreadsheets IT5.10	Spreadsheets - formulae Use Microsoft Excel or Google Sheets to input data related to Science or Maths topics. Use simple formulae such as SUM, MAX and MIN, 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 IT5.9, IT5.10	Spreadsheets - graphs Use Microsoft Excel or Google Sheets to create a range of graphs and charts, deciding on which are the most appropriate, and using them to answer questions. Examples here IT5.9, IT5.10	Purple Mash 2Investigate Sort data to answer questions using the premade databases. Extend to designing and creating the field and records to be used in a planets database and populate with information from research. IT5.7, IT5.8	
Key Skills	<p>IT5.1 When word processing, can format the text to indicate relative importance, including bold, italic, underline and strikethrough.</p> <p>IT5.2 Can include a range of media in documents, including images and sound.</p> <p>IT5.3 Can use modelling software to create virtual environments or simulations.</p> <p>IT5.4 Can select sounds, text, movie clips and other effects to suit purpose and audience.</p> <p>IT5.5 To be able to use a range of editing techniques and filters to improve photographs and digital art.</p> <p>IT5.6 To be able to layer and edit sounds in appropriate sound editing software.</p> <p>IT5.7 Can organise data by designing fields and records in a database, with support.</p> <p>IT5.8 Be able to design questions using keywords, to search a large pre-prepared database.</p> <p>IT5.9 Can add simple formulae to spreadsheets, such as SUM, MAX, MIN and AVERAGE, enter data and use filters to sort information.</p> <p>IT5.10 Can use a spreadsheet to produce bar and pie charts.</p>					