



## St Joseph's (Wallasey) - Computing across the Curriculum Long Term Planning Map - Y5

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
<b>History and Geography</b>	The Viking and Anglo-Saxon struggle for the Kingdom of England to the time of Edward the Confessor	Study of the human and physical aspects of life in South America	A non-European society that provides contrasts with British history – one study chosen from: early Islamic civilization, including a study of Baghdad c. AD 900; Mayan civilization c. AD 900; Benin (West Africa) c. AD 900-1300.  <b>Mayan Civilisation</b>	Climate change and its impact on our planet	A local history study  <b>Liverpool's Sea Power and its links to the Empire</b>	North American study  Comparing NYC to Liverpool

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

## Tutorial Link

Control and Programming	<p><b>Code Studio</b></p> <p><a href="#">Code Studio</a>. 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. <b>T</b></p> <p><b>CS5.1, CS5.2, CS5.3, CS5.4, CS5.5</b></p>					
	<p><b>Spritebox</b></p> <p>In a gaming environment, children sequence and debug instructions to solve problems <a href="#">website</a>. <b>CS5.1, CS5.2</b></p>	<p><b>Scratch Drum Machine</b></p> <p>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. <a href="#">Example project:</a> <b>CS5.1</b></p>	<p><b>Tynker Solar System</b></p> <p>Use the <a href="#">website</a> and follow the instructions to program an interactive model of our Solar System. Then add planet facts. <b>CS5.1, CS5.2, CS5.3</b></p>	<p><b>CodeCombat</b></p> <p>Use <a href="#">Codecombat</a> 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. <b>CS5.1, CS5.3, CS5.4</b></p>	<p><b>Scratch Polygons</b></p> <p>Program length and angles to create polygons by using repeats. Add in a formula to work out the angle required based on the number of sides. Explore options for changing line colour and thickness. Use nested loops to turn these polygons into repeating patterns around a point. <b>CS5.1</b></p>	<p><b>What is digital data?</b></p> <p>Use <a href="#">BBC Bitesize</a> 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>
Key Skills	<p>CS5.1 Can use decomposition when solving problems (break the code/problem into smaller parts).</p> <p>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).</p> <p>CS5.3 Can explain what happens when a variable changes and can use this within a computer program to manipulate data.</p> <p>CS5.4 Can use and change a pre-written function as part of a longer program or sequence.</p> <p>CS5.5 Be able to use a greater range of conditionals (selection) including whilst, if else, repeat until.</p>					

## Digital Literacy

### Tutorial Link

<b>Research: Internet</b>	<b>Google Earth Voyager: Viking Explorers</b> Use <a href="#">Voyager</a> in Google Earth to find out about the Vikings. Ask specific questions for pupils to answer. <b>DL5.1</b>	<b>BBC Bitesize</b> Explore the videos and participate in activities and simulations to find out about the relevant <a href="#">science</a> topic. <b>DL5.1</b>	<b>Compare 3 Websites</b> Explore information about Mayan civilisation 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. <b>DL5.1, DL5.2, DL5.3, DL5.4</b>	<b>Google Advanced search</b> Use a large database (e.g. Google search engine) to search for information e.g. on a specific aspect of climate change. Use Advanced Google search for Boolean searches (AND/OR Same as searches). <a href="#">Teacher materials here</a> <b>DL5.1, DL5.2, DL5.3, DL5.4</b>	<b>Altered Images</b> Use the <a href="#">presentation</a> 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. <b>DL5.2, DL5.3</b>	<b>Reproducing information</b> When researching, on iPads, use information found online to inform presentation work, without copying and pasting text. <b>DL5.1, DL5.2, DL5.3, DL5.4</b>
<b>Online Communication and eSafety</b>	<b>Online Quizzes</b> Use <a href="#">Kahoot!</a> Or <a href="#">Quizizz</a> to take part in online quizzes after signing up to a free teacher account. (this can easily be linked to topics and used throughout the year). <b>DL5.7</b>					
	<a href="#">Private and personal Information</a> - <b>Common Sense Media Materials</b> 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. <b>DL5.6</b>	<a href="#">Digital Citizenship</a> - <b>Common Sense Media Materials</b> Students will establish group norms to create a positive online community that promotes responsible and respectful digital behavior within their classroom. <b>DL5.6</b>	<a href="#">My Media Choices</a> - <b>Common Sense media materials</b> Activities in this lesson will give pupils a framework for making informed media choices about the media they create and consume. <b>DL5.6 DL5.4</b>	<a href="#">A Creator's Rights and Responsibilities</a> <b>Common Sense media materials</b> In the lesson, pupils will learn about the rights and responsibilities they have when it comes to the images they create and use. <b>DL5.6 DL5.4</b>	<a href="#">Keeping game fun and healthy</a> <b>Common Sense media materials</b> 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. <b>DL5.6</b>	<a href="#">Online Tracks</a> <b>Common Sense media materials</b> Learn what a "digital footprint" is and identify the online activities that contribute to it. Identify ways they are in control of their digital footprint and understand responsibilities they have themselves and others. <b>DL5.6</b>

<p><b>Modelling and Simulations</b></p>	<p><b>Sketch Nation app</b> Create a viking themed up jumping game. Drawing or downloading an image for the main character. Develop various power ups e.g. weapons, or longships and enemies e.g. monks. Develop a story for the game e.g. collecting items in Scandinavia before crossing the North Sea to reach the rich lands of Britain. Consider playability and appearance. Once created, children can play each other's games and video each other playing the games to create game reviews. <b>T</b> <b>DL5.8</b></p>	<p><b>Forces simulations</b> 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: <a href="#">Forces resources</a> <b>T</b> <b>DL5.8</b></p> <p><b>Materials/Friction simulation</b> Use the simulations on the link below to investigate how different materials create different amounts of friction. <a href="#">Link here</a> <b>DL5.8</b></p>	<p><b>Google Earth Mars/Moon module</b> Find out about the Red Planet or Apollo Landing using Google Earth software on laptops/PCs. <b>T</b> <b>DL5.8</b></p> <p><b>Solar Walk app</b> Explore the Solar System. <b>DL5.8</b></p> <p><b>If the Moon Were Only 1 Pixel (SPACE)</b> <a href="#">Use the online tool</a> to explore the scale of our solar system. <b>DL5.8</b></p> <p><b>Space Augmented Reality (AR) apps</b> Use Spacecraft AR to view space crafts, planets and space stations through Augmented reality. (Trigger images will need to be printed). <b>DL5.8</b></p>	<p><b>Energy Island app (energy and sustainability)</b> Use the app to simulate the powering of the island to see how sustainable power can be generated lessening damage to the environment. <b>DL5.8</b></p> <p><b>Energy Farm website (energy and sustainability)</b> Use the website link <a href="#">here</a> 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. <b>DL5.8</b></p>	<p><b>Google Earth</b> Explore <a href="#">Google Earth</a> to find Liverpool and it's historical locational links to the Empire, including it's involvement in the slave trade. <b>DL5.8</b></p>	<p><b>Parts of a flower model</b> Use the model on the link below to investigate the different parts of a flower and their role in a plant's life cycle. <a href="#">Parts of a flower</a> <b>T</b> <b>DL5.8</b></p> <p><b>Google Earth</b> Explore and compare New York and Liverpool at different scales on <a href="#">Google Earth</a> Using Street View.. <b>DL5.8</b></p>
<p><b>Key Skills</b></p>	<p>DL5.1 To be able to search the internet for specific information using tools such as Google Advanced Search.</p> <p>DL5.2 To be able to check information for accuracy and bias.</p> <p>DL5.3 Can save media from the internet to be used in further work.</p> <p>DL5.4 Is aware that some media is copyrighted and cannot be used without permission.</p> <p>DL5.5 Be able to upload/download informative and interesting content to and from a learning platform, including various media.</p> <p>DL5.6 Demonstrate an understanding of the rules for personal internet safety, including social media and search engine use.</p> <p>DL5.7 Be able to take part in a range of digital surveys and quizzes to communicate and collaborate with others.</p> <p>DL5.8 Can use modelling and simulation software to create realistic or fantasy representations of the real world</p>					

## Information Technology

### Tutorial Link

#### Word Processing and Desktop Publishing

##### Microsoft Word or Google Docs

Use word processing software to write an explanatory text on the struggle between the Vikings and Anglo-Saxons 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**

##### Typing practice:

Play online typing game: [Nitrotype](#) to improve typing speeds and skills. Children can choose their difficulty to differentiate the task.

**KS5.2**

##### Timeline app

Sequence events in the history of the Mayan civilisation. Can extend to include text, images and hyperlinks *as part of a history lesson*.

**IT5.2**

##### Microsoft PowerPoint or Google Slides

Make a non-linear hyperlinked slide show presentation based on climate change 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**

##### Adobe Spark Page app

Use Adobe Spark Page app (a school or class account login will be required) to create a digital writing presentation linked to Liverpool's Sea Power.

**IT5.1, IT5.2**

##### Tiny Tap app

Create a multimedia set of games to share their knowledge about North America. Combine images and text along with short narrated segments to create multiple pages of mini-games, including Cut-a-Shape, Soundboard and Ask a Question. Part way through, play each other's games and evaluate for improvements.

**IT5.1, IT5.2, IT5.4, IT5.5, IT5.6**

#### Multimedia

##### 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**

Data Handling	<p><b>Adobe Spark Video app or online</b> Combine images, text and narration to create a video of a historical recount of events at the time of Edward the Confessor. Use this to present their research and writing from history or English lessons. <b>T</b> <b>IT5.1, IT5.2, IT5.4, IT5.6</b></p>	<p><b>Sketchpad online</b> Use the <a href="#">digital art website</a> through Safari on the iPads to combine shapes and colours to draw South American art. <i>This could be done in art lessons.</i> <b>IT5.5</b></p>	<p><b>Garageband</b> 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. <b>IT5.6</b></p>	<p><b>iMovie app</b> Create a movie trailer. This could be as a persuasive film to educate and instruct people to live in an environmentally sensitive way. Adapt a trailer storyboard template in app. The scripts and shots could be planned and pre-written using the relevant storyboard template. These can be downloaded from <a href="#">here</a>. <b>IT5.2, IT5.4, IT5.6</b></p>	<p><b>Pixlr app</b> Edit the look and style of photos taken around Liverpool. Filters and various tools can be used to create effective styles and outcomes. <b>IT5.5</b></p>	<p><b>iMotion app (Properties and changes of materials)</b> Create a stop motion animation. Use Play-Doh, paper and craft materials to represent how materials dissolve, how they can be separated, mixed, burned and show if they are reversible or irreversible. Add speech bubbles as captions for multiple photos to allow time to read. Finished films could be edited in iMovie app, adding titles and music. Pupils could be allocated different processes. They will need to make a plan before they begin. <b>IT5.2, IT5.4, IT5.6</b></p>
	<p><b>Microsoft Excel</b> Use Microsoft Excel software to input data taken from Science experiments. Then use the spreadsheet to create graphs or charts which can be analysed and the results evaluated. <b>IT5.10</b></p>	<p><b>Spreadsheets (Maths)</b> Use Excel or Google Sheets To create a spreadsheet linked to area and perimeter. Show the pupils the sample spreadsheet and ask them to complete. Now show them how to create a simple calculator using the formula function. Ask the pupils to create a formula that will calculate area and perimeter automatically once dimensions are added to certain cells. Show how to format their work to enhance the presentation. They can change the font, font size etc . They can colour cells and merge cells if they need. To extend, give the pupils a 'worksheet' with different shapes on. Can they use the spreadsheet to calculate the area and perimeter of each shape? <a href="#">Resources here</a> <b>IT5.10, IT5.11</b></p>			<p><b>Airtable</b> Use <a href="#">Airtable</a> to create a collaborative database of US States. Decide on fields as a class and collect data Sort and filter the relevant information. (hi-impact support available If required. Logins needed, 1 login per group of 4-6.) Children can research chosen states, and add fields for size, populations, age, capital etc. and then input into the Airtable. <b>IT5.8, IT5.9</b></p>	

### **Key Skills**

- IT5.1 When word processing, can format the text to indicate relative importance, including bold, italic, underline and strikethrough.
- IT5.2 Can include a range of media in documents, including images and sound.
- IT5.3 Can use modelling software to create virtual environments or simulations.
- IT5.4 Can select sounds, text, movie clips and other effects to suit purpose and audience.
- IT5.5 To be able to use a range of editing techniques and filters to improve photographs and digital art.
- IT5.6 To be able to layer and edit sounds in appropriate sound editing software.
- IT5.7 Can organise data by designing fields and records in a database, with support.
- IT5.8 Be able to design questions using keywords, to search a large pre-prepared database.
- IT5.9 Can add simple formulae to spreadsheets, such as SUM, MAX, MIN and AVERAGE, enter data and use filters to sort information.
- IT5.10 Can use a spreadsheet to produce bar and pie charts.