



## Bidston Village - Computing across the Curriculum Long Term Planning Map - Y6

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>Science</b>	Light	Electricity	Humans including animals	Living things and their habitats	Evolution and inheritance	
<b>English</b>	Star of Fear, Star of Hope by Jo Hoestlandt	Can we save the tiger? by Martin Jenkins	Selfish Giant by Oscar Wilde	Jemmy Button by Alix Barzelay & The Island by Jason Chin	Manfish by Jennifer Berne	Sky Chasers by Emma Carroll
<b>History</b>	War Through the Ages		World War II Focus		The History of Liverpool and its river	
<b>Geography</b>	The Amazon- South America. Compare biomes and the UK		Local Study-Bidston Biome. Compare biomes and UK		Rivers. Why did Liverpool develop on the Mersey?	
<b>Music</b>	Texture and dynamics Music and instruments of South America		Songs of War/ Voices of Refuge Expressive singing (Outside)		Village life and the riverbank Rhythm and performance	
<b>DT</b>	Pop Art	Greek weaponry-shield designs	Art in Conflict	Making a windmill	Futurism	Printing- Rivers and waterways

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

- F6.1** When typing, be able to use more than two fingers to enter text, with increasing speed and accuracy.
- F6.2** Be able to use more advanced keyboard function keys e.g print screen, ctrl+a, ctrl+b, ctrl+t, ctrl+shift+t
- F6.3** Be able to independently create suitably named folders to organise documents, using appropriate file paths.

## 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 of directional commands and employ problem solving skills on the procedure levels. Encourage identification of visual repeating patterns first then, write the procedure before the main program that will call upon it. **T**  
**CS6.1, CS6.3**

#### Scratch Maze

Make a simple maze game. This could link to electricity (electrons navigating a circuit) or Geography (a boat navigating the Amazon river). Introduce conditionals such as 'when' and 'until'. Draw a maze as a background in one colour. Program a sprite to move in 4 directions on different key presses. Set the sprite to return to the

#### Blockly Maze

Use the [online](#) Blockly games to further apply the coding knowledge children have absorbed 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'.  
**C26.1, CS6.2**

#### Scratch Space Invaders

Make a Space Invaders style game. This could be themed according to topics e.g. a healthy eating themed game could have unhealthy foods as 'invaders'. Focus on motion blocks, coordinates on a grid and effective use of show and hide. Use the link below to see others programs in the community to use as [examples](#). Refer to [Scratch Guide](#) (p177)

#### Hopscotch app

Make shapes and patterns linked to Maths as well as looking at coordinate positioning of sprites. Use motion, repeat and drawing commands. Introduce conditionals such as 'when' and 'until'. To extend, begin to create games. Use the tutorial videos in the Guidance section of the app, if required.  
**CS6.5, CS6.4, CS6.3, CS6.2, CS6.1**

#### CodeCombat

Use [Codecombat](#) online to develop basic sequencing and problem solving skills using a text-based programming language (e.g. Python). This activity can be used to introduce procedures, loops and conditional language. Free teacher accounts can be created and then children can generate their own login accounts. This is not necessary for

		starting position if it touches the wall. See <a href="#">here</a> for an example. Refer to <a href="#">Scratch Guide</a> (p37) for steps to make a Chase Game. <b>CS6.1, CS6.2, CS6.3</b> <b>CS6.4, CS6.5</b>		for steps to make a Catch Game. <b>CS6.1, CS6.2, CS6.3</b> <b>CS6.4, CS6.5</b>		students to play, the activity can also be accessed without signing in or tracking progress. <b>CS6.1, CS6.2 CS6.3</b>
<b>Computer Science Skills</b>	<p><b>CS6.1</b> Be able to use logical operations (not, or, and) to alter and control the outcome of a series of commands.</p> <p><b>CS6.2</b> Can use variables efficiently. Be able to create their own variable and use this within a computer program to manipulate data.</p> <p><b>CS6.3</b> 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.</p> <p><b>CS6.4</b> Be able to use a wider range of events (such as broadcasts) and use them efficiently within programs to start and stop scripts.</p> <p><b>CS6.5</b> When debugging, can use abstraction to filter out extraneous detail and debug the program.</p>					

## Digital Literacy

### Tutorial Link

<b>Research: Internet</b>	<p><b>BBC Science Bitesize</b> Watch videos and explore activities. Use the interactive links to search for the information to answer specific questions. Set questions which require the use of links to external websites. <a href="#">light and dark</a>. <b>DL6.1</b></p>	<p><b>Citing Sources</b> Pupils reflect on the importance of citing all sources when they do research. They then learn how to write bibliographical citations for online sources. <a href="#">Teacher resources here</a>. <b>DL6.3</b></p>	<p><b>Range of Search Engines</b> Find information about Bidston Biome, comparing the range of filters/tools that different search engines provide. Look at advanced image search tools within Google, Bing Ask and Yahoo. <b>T</b> <b>DL6.1</b></p>	<p><b>BBC Science Bitesize</b> Watch videos and explore activities. Use the interactive links to search for the information to answer specific questions. Set questions which require the use of links to external websites. <a href="#">Classification</a> and <a href="#">life cycles</a>. <b>DL6.1</b></p>	<p><b>BBC Science Bitesize</b> Watch videos and explore activities. Use the interactive links to search for the information to answer specific questions. Set questions which require the use of links to external websites. <a href="#">adaptation, inheritance and evolution</a>. And <a href="#">fossils</a>. <b>DL6.1</b></p>	<p><b>Different Viewpoints</b> Look at information from different viewpoints and validate information. <i>Possibly link to English or a class debate.</i> Further resources <a href="#">here</a> (could be set as a homework task) <b>DL6.1</b></p>
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<p style="text-align: center;"><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. <b>DL6.2</b></p> <p><b>Online Quizzes</b> Sign up to one or both of <a href="#">Quizizz</a> or <a href="#">Kahoot!</a> to take part in online quizzes (this is easily linked to any topic throughout the year). App and online versions are both available. <b>DL6.2</b></p>					
	<p><b>Common Sense Media lesson</b> <a href="#">Media balance</a> 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. <b>DL6.6</b></p>	<p><b>Common Sense Media lesson</b> <a href="#">You Wont Believe this!</a> 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 gets your attention and understand strategies for avoiding clickbait <b>DL6.1</b></p>	<p><b>Common Sense Media lesson</b> <a href="#">Beyond Gender Stereotypes</a> In this lesson, pupils will understand and define 'gender stereotypes' describing 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. <b>DL6.5</b></p>	<p><b>Common Sense Media lesson</b> <a href="#">Digital Friendship</a> In this lesson pupils will compare and contrast different kinds of online-only friendships and describe the benefits and risks. They will learn how to respond to an online-only friend if the friend asks something that makes them uncomfortable <b>DL6.5</b></p>	<p><b>Common Sense Media lesson</b> <a href="#">Cyber bullying</a> In this lesson pupils will learn about cyber bullying and what they can do to help to prevent and stop it. <b>DL6.5</b></p>	<p><b>Common Sense Media lesson</b> <a href="#">Reading the News</a> In this lesson pupils will learn about the purposes of different parts of an online news page. They will identify the structure of an online news article and learn about things to watch out for when reading online news pages, such as sponsored content and advertisements. <b>DL6.1, DL6.3</b></p>
<p style="text-align: center;"><b>Modelling and Simulations</b></p>	<p><b>Google Earth Voyager</b> <a href="#">The Amazon Basin</a> Use Street View to explore the Amazon Basin <b>DL6.1</b></p>	<p><b>Electricity Circuit Construction Simulations</b> Electricity: prior to practical lessons, use the simulation to build and test different circuits, learning how the components interact in different formations. PhET: <a href="#">Link here</a>. UK Power</p>	<p><b>The Human Body Simulation</b> This website allows you to explore the different systems of the human body and view digital models of how they function. Some models may require additional explanation from the class teacher. <a href="#">Human</a></p>	<p><b>Sketch Nation WW2 Online</b> Create an up-scrolling 'Battle of Britain' game. Download a previously saved overhead image of a WW2 plane and fill transparency around the outside. Add fuel drums as power ups and include enemy</p>	<p><b>CoSpaces Edu</b> Using the online interface on PC or iPad app, pupils can create their own explorable worlds using 3D design tools e.g. a Liverpool history virtual museum). These experiences can be explored through AR and VR with the correct equipment or through the browser window. Basic account is free but extra features are unlocked with subscription. <b>DL6.4</b></p>	

		<p>Networks <a href="#">Link here</a> <b>DL6.4</b></p> <p><b>Google Earth Voyager</b> Visit an offshore <a href="#">Wind Farm</a> and take a tour through the past, present and future of energy. <b>DL6.1</b></p>	<p><a href="#">Body models</a> <b>DL6.4</b></p> <p><b>Google Earth - Ecosystems</b> Use Google Earth Voyager to explore <a href="#">ecosystems</a>. Lesson Guide <a href="#">here</a> Support resources <a href="#">here</a> <b>DL6.4</b></p>	<p>planes. Obstacles can be mountains to navigate around. Focus on a game story, playability and appearance. Test and adjust regularly. <b>DL6.4</b></p>	
<p><b>Digital Literacy Skills</b></p>	<p><b>DL6.1</b> Be able to identify irrelevant, implausible and inappropriate information, when searching for information online.  <b>DL6.2</b> Be able to work with others to create an online collaborative project for a specific purpose, sharing and appropriately setting permissions for other group members.  <b>DL6.3</b> Be able to show an awareness that some media is copyrighted and cannot be used without permission.  <b>DL6.4</b> Be able to use modelling software to explore and create detailed virtual environments or simulations.  <b>DL6.5</b> Be able to demonstrate an understanding of media bias and strategies for ensuring a balanced view, including gender stereotypes.  <b>DL6.6</b> Be able to explain how to develop positive online relationships and have strategies to prevent and stop negative situations and manage their private information.</p>				

## Information Technology

### Tutorial Link

<p><b>Word Processing and Desktop Publishing</b></p>	<p><b>Microsoft PowerPoint or Google Slides</b> Create a digital presentation about South America. Different slides can include text ,images and hyperlinks related to the topic. <b>F6.1, F6.2</b></p>	<p><b>Typing Practice</b> Play <a href="#">online typing games</a> to improve typing speeds and skills. Children can choose their own difficulty to differentiate the task. <b>F6.1</b></p> <p><b>Adobe Spark Page app or online</b></p>	<p><b>Typing Practice</b> Play online typing game: <a href="#">Nitrotype</a> to improve typing speeds and skills. The difficulty is automatically set to the children's level (after typing a test sentence) to differentiate the task. <b>F6.1</b></p>	<p><b>Microsoft PowerPoint or Google Slides</b> Create a 'Choose Your Own Adventure' style non-linear narrative, by hyperlinking slides with choices in a story set on The Island. App and computer versions available. <b>F6.1, F6.2, IT 6.1 (iPad6+)</b></p>	<p><b>Typing Practice</b> Play online typing game: <a href="#">Mario Teaches Typing</a> to improve typing speeds and skills. <b>F6.1</b></p> <p><b>Google Earth Projects</b> Class will need a Google account to login, or individual Google logins if available. Add information and images to a tour of the River Mersey located within Google maps. Research, plan and write in English or geography lessons in advance. Part way through, pupils can review each other's work</p>
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		<p>Simulate a <a href="#">website</a> to link to the topic of WWII, combining images and text. Use the glideshow option to group similar ideas together. A free school account will be required for Adobe, or pupils can log in using Google. Contact the school technician to get this set up ahead of time. <b>T</b> <b>F6.1, F6.2, IT 6.1</b></p>	<p><b>Microsoft Word or Google Docs</b> Create a formal document. Focus on layout and justification features e.g. a letter home from a WWII soldier. App and computer versions available. <b>F6.1, F6.2, IT 6.1</b></p>		<p>to suggest and make improvements. Use Street View and 360° images to explore key locations further. A presentation of these locations could be made using the projects tool in Google Earth <a href="#">online</a>. Students can add information about each location from their research and add images and videos to support their explanations. These can be shared as 'Tours' for others to view. Quick lesson guide <a href="#">here</a>. Examples of other stories and tours <a href="#">here</a>. <b>Further resources available from hi-impact handbook</b> <a href="#">Link here</a> <b>F6.1, F6.2, IT 6.1</b></p>
<p><b>Multimedia</b></p>	<p><b>iMovie app</b> Create a movie trailer. This could be as an advert for an imaginary film of a "Star of Fear, Star of Hope" narrative written in English. Adapt a trailer storyboard template in app. Possibly green screen some shots using the Doink app and add movies to iMovie. 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>IT6.3, IT6.4</b></p>	<p><b>Bandlab</b> Use the <a href="#">website</a> (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. Encourage children to playback and readjust their work often. Children should be given a specific brief and audience to create for e.g. using South American instruments. <b>IT6.4</b></p>	<p><b>Adobe Spark Video app or online</b> Using the app or <a href="#">online</a>, combine images, text and narration linked to Songs of War. Pupils could create a slideshow of images and then record their performance as audio over the top. Alternatively, iMovie could be used. <b>T</b> <b>IT6.3, IT6.4</b></p>	<p><b>Green Screen Doink app</b> Create a video of children as news reporters from a scene from WW2. Act out their own scripts, direct and film as a group. Use Doink App on iPad. Use the iMovie app to edit scenes and edit videos. <b>IT6.3</b></p>	<p><b>Sketchpad online</b> Use the <a href="#">digital art website</a> to combine shapes and colours to draw artworks linked to futurism. <i>This could be done in art lessons.</i> <b>IT6.2</b></p> <p><b>Chrome Music Lab</b> Use <a href="#">Chrome Music Lab</a> online to explore how sounds can be manipulated digitally in a variety of ways. <b>IT6.4</b></p> <p><b>Stop Animation: iMotion app (evolution)</b> Create a stop motion animation to tell the story of evolution. Children can create Play-Doh animals showing the different evolutionary stages. <a href="#">Aspirational example</a>. Move characters a tiny amount between photos. Finished films could be edited in a video making app, adding titles and music. 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>IT6.3, IT6.4</b></p>

<b>Data Handling</b>	<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 to show this. Use arrows and coloured spots on the map. <b>IT6.5</b></p>	<p><b>Spreadsheets</b> Linking to Maths or topic, devise the best way to organise and present information in a number of ways and enable the data to be interrogated or graphed in different ways. <b>IT6.6, IT6.7</b></p>	<p><b>Cardio app</b> Use data logging of heart rate, as part of a science lesson or investigation. <b>IT6.5</b></p>	<p><b>Purple Mash 2investigate</b> Organise WW2 tank or plane data, designing fields and populating records in a database, and then use a range of queries to answer specific questions. <b>IT6.5, IT6.6</b></p>	<p><b>Microsoft Excel or Google Sheets</b> 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. <a href="#">Examples here</a> <b>IT6.6, IT6.7</b></p>
<b>Information Technology Skills</b>	<p><b>IT6.1</b> Be able to make appropriate use of hyperlinks to produce a non-linear presentation or document.</p> <p><b>IT6.2</b> Be able to use layers within a digital art package to allow more detailed creation, refining the use of tools to create increasingly purposeful digital artworks.</p> <p><b>IT6.3</b> Be able to create videos that include greenscreen or animated footage. Edit footage with different effects such as slow-motion, cutaway, picture in picture.</p> <p><b>IT6.4</b> Be able to import sounds into audio editing software, layering and editing to refine their work.</p> <p><b>IT6.5</b> Can export and analyse continuous data from data logging and present in graph form.</p> <p><b>IT6.6</b> Can add simple formulae to their own spreadsheets, such as SUM, MAX, MIN and AVERAGE. Enter data and use filters to sort information.</p> <p><b>IT6.7</b> Can use a spreadsheet to produce bar and pie charts.</p>				