



Bidston Village - 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
Science	Properties and changes of materials (thermal insulators, conductors and insulators, separating mixtures)	Properties and changes of materials (reversible and irreversible changes, dissolving)	Earth and Space (Moon diary, Earth theories, rotation of the Earth, night and day, trajectory of Earth around the Sun)	Living things and their habitats (Life Cycles of humans and plants, reproduction)	Living things and their habitats (Animals including humans (describe process of growing up))	Forces (gravity, air resistance, water resistance, friction, levers and pulleys)
English	Queen of the Falls by Chris Van Allsburg	The Lost Happy Endings by Carol Ann Duffy and Jane Ray	Arthur and the Golden Rope by Joe Todd-Stanton	The Darkest Dark by Chris Hadfield	The Paperbag Prince by Colin Thompson	The Hunter by Paul Geraghty
History and Geography	Ancient Greece North America and Climate Zones	Ancient Greece The Grand Canyon	Benin (West Africa) Are we damaging our world? Extreme Weather and Climate Change		Victorians Port Sunlight local history study Mapping skills - local Geography Why did Lord Leverhulme choose Port Sunlight?	
Music	Our Community Unit Focus: PERFORMING	Keeping Healthy Unit Focus: BEAT	Solar System Unit Focus: LISTENING	Life Cycles Unit Focus: STRUCTURE	At the Movies Unit Focus: COMPOSING	Celebration Unit Focus: PERFORMING
DT & Art	The Power of Love Klimt and August Rodin	Making bread	Cultural Tradition in Art Richard Kimbo	Arch Structures	Art and Fashion Mondrian	Pulleys and gears

Functional Skills
(used throughout all areas of Computing)

- F5.1** When typing, be able to hold two hands over different halves of the keyboard and use more than two fingers to enter text.
- F5.2** Know and be able to use more advanced keyboard function keys e.g. insert, delete, ctrl+c, ctrl+v, ctrl+z.
- F5.3** Be able to navigate a folder system to move files or work to a suitable location within e.g. Shared Drive, iPad camera roll, Google Drive or OneDrive.
- F5.4** If appropriate, be able to change print properties to affect the appearance of a printed document.

Computer Science

[Tutorial Link](#)

Code Studio

[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**

CS5.1, CS5.2, CS5.3, CS5.4, CS5.5

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

Fix the Factory and Lightbot apps

Revise Lego Fix the Factory and Lightbot apps to develop basic sequencing and problem solving skills and introduce procedures, loops and conditional language.

CS5.1, CS5.4

Tynker Solar System

Use the [website](#) and follow the instructions to program an interactive model of our Solar System. Then add planet facts.

CS5.1, CS5.2, CS5.3

Scratch Polygons

On Laptops/PCs or iPads, program length and angles to create polygons by using repeats. Add in formulae 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.

CS5.1

Scratch Projects

Use Scratch desktop or online software to create and program their own projects. These could be based on the topic of habitats. Use the link below to see others' programs in the community to use as examples: [Scratch link](#). Use [Scratch cards guide](#) as a reference for activities including animate a name, create a story and virtual pet.

Blockly

Solve a math problem with one or two variables using [Blockly](#)

CS5.2

				CS5.1, CS5.2, CS5.3, CS5.4, CS5.5		
Computer Science Skills	CS5.1	Can use decomposition when solving problems (break the code/problem into smaller parts).	CS5.2	Can explain what happens when a variable changes and can use this within a computer program to manipulate data	CS5.3	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).
	CS5.4	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	Appropriate use of the Internet Use Childnet resources to have children focus on appropriate use of the Internet. T DL5.5	Image Search Use Google or Bing to search for small clipart images for use in multimedia work. Use the image filters, e.g. type and size and compare the two search engines. DL5.1, DL5.3	Advanced Google Search Undertake Boolean searches (AND/OR Same as searches) to find out about Benin. Continue to use these research skills throughout the year in other areas. Teacher support: Refine web search techniques Additional materials here DL5.1	Internet Research When researching, use information found online to inform presentation work, without copying and pasting text. This could be done as part of a multimedia activity. 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 hyperlinks to find more information? Share	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. DL5.5	Comparing Websites Explore information about Port Sunlight using three 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 and compare answers to specific questions. DL5.1
	BBC Science Bitesize 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. Changing Materials . DL5.3	Google Earth Voyager Explore the Grand Canyon using the voyager tools. Ask specific questions for pupils to answer. DL5.3	BBC Science Bitesize Watch videos and explore activities. Use the interactive links to			

	<p>Google Earth Voyager Explore the National Parks of North America. Ask specific questions for pupils to answer. DL5.3</p>		<p>search for the information to answer specific questions. Set questions which require the use of links to external websites. Earth and Space. DL5.3</p>	<p>good practice and techniques. DL5.1, DL5.3</p>		
<p>Online Communication and eSafety</p>	<p>Using the VLE 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. DL5.2</p> <p>Online Quizzes Use Kahoot! Or Quizizz 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). DL5.2</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 games 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 In the lesson pupils will 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 style="text-align: center;">Modelling and Simulations</p>	<p>Ancient Civilisations Use the Soundgate App to interactively explore a number of archaeological sites as they might have looked in the ancient past. As well as seeing what they look like, you can also hear what they sounded like. Three World Heritage Sites are virtually modelled visually and sonically, including prehistoric caves in Spain; Stonehenge in England; and Paphos Theatre in Cyprus.</p> <p>You can trigger musical sounds that may have been heard there in the past, and hear how the acoustics of the spaces enhance them, experiencing how the acoustics change as you move around the site. You can also virtually visit a number of wonderful places that are not usually accessible to the public. The Soundgate is intended to provide an experience of what it might have felt like to be in these places in the past. From the menu you can select three different archaeological sites to visit. Support here DL5.4</p>	<p>Google Earth Mars/Moon module (SPACE) Find out about the Red Planet or Moon using Google Earth software on laptops or desktop computers. T DL5.4</p> <p>Solar Walk app (SPACE) Explore the Solar System. DL5.4</p> <p>If the Moon Were Only 1 Pixel (SPACE) Use the online tool to explore the scale of our solar system. DL5.4</p> <p>Space Augmented Reality (AR) apps Use either Spacecraft 3D (iOS 8.0 or later) or Spacecraft AR (iOS 11.0 or later) space crafts, planets and space stations through Augmented reality. (Trigger image(s) will need to</p>	<p>Sketch Nation Online Create extreme weather/climate change themed games. Develop various power ups and enemies relating to the topic for different effects. Consider playability and appearance. Once created, children can play each other's games and video each other playing the games to create game reviews. T DL5.4</p> <p>Energy Farm website (energy and sustainability) Use the website link here 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</p>	<p>Google Earth Use the Google Earth website to explore Port Sunlight 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. <i>This could be part of a Geography lesson.</i> T DL5.4</p>	<p>Phet Forces Simulations Use the Forces basics and Skatepark Phet simulations to investigate different forces and their effects. DL5.4</p>	

		be printed off prior to the session). DL5.4	the environment when running a farm. DL5.4		
Digital Literacy Skills	DL5.1	Be able to search the internet for specific information using tools such as Boolean search or Google Advanced Search.			
	DL5.2	Be able to engage in online communication with teachers and other pupils, making use of a growing range of available features within the online platform.			
	DL5.3	Be able to search using more than one search term, adapting the search terms to refine search results.			
	DL5.4	Be able to use modelling and simulation software to explore or create realistic or fantasy representations of the real world.			
	DL5.5	Be able to demonstrate an understanding of responsible social media use, including knowledge of their digital footprint, sharing information and images, and communication with others.			
	DL5.6	Be able to demonstrate an understanding of the risks of online gaming and know strategies for healthy online behaviours.			

Information Technology

Tutorial Link

Word Processing and Desktop Publishing	<p>Typing practice Lesson starter: Play online typing games such as the ones found at Nitrotype 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. F5.1</p> <p>Adobe Spark Post app or online Combine images and text to create a</p>	<p>Adobe Spark Page app/website Use Adobe Spark Page website or app (a school or class account login will be required) to create a digital writing presentation based on the Grand Canyon . Pupils should plan different sections to showcase their learning. The completed presentations can be shared online. IT5.1, IT5.2, IT5.3</p>	<p>Typing practice: Lesson starter: Play online typing game: Mario Teaches Typing to improve typing speeds and skills. Children can choose their difficulty to differentiate the task. F5.1</p> <p>Microsoft Word or Google Docs Use word processing software to write a newspaper report of the moon landing with images inserted. Focus on the structure</p>	<p>Google Earth Project In Google Earth create a 3D tour presentation around Benin. From the menu select projects. 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.</p>	<p>Microsoft Word or Google Docs Use word processing software to Sequence events in the history of the Victorians with images inserted. Focus on 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.</p>	<p>Typing practice Lesson starter: Play online typing games such as the ones found at http://www.freetypinggame.net/play.asp to improve typing speeds and skills. Children can choose their difficulty to differentiate the task. F5.1</p> <p>Microsoft PowerPoint or Google Slides Make a non-linear hyperlinked slide show presentation based</p>
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	<p>persuasive poster based on Properties of Materials.(A free school account will be required for Adobe). IT5.1, IT5.2 (iPad6+)</p>		<p>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>IT5.1, IT5.2, IT5.3</p>	<p>IT5.1, IT5.2</p>	<p>on Port Sunlight that begins to use a range of hyperlinks and media and also includes the use of custom animation. IT5.1, IT5.2, IT5.3</p>
<p>Multimedia</p>	<p>Sketchpad online Use the digital art website to combine shapes and colours to draw artworks linked to Klimt. <i>This could be done in art lessons.</i> IT5.3</p> <p>Green Screen Create a video of children as news reporters from scenes from Queen of the Falls. 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. IT5.3</p>	<p>iMotion app (Properties and changes of materials) 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 the iMovie app, adding titles and music. Pupils could be allocated different processes. They will need to make a plan</p>	<p>iMovie app Create a movie trailer as an advert for an imaginary film of a narrative written in English or a book being studied e.g. Arthur and the Golden rope. Adapt a trailer storyboard template in the 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 here. IT5.3, IT5.4</p>	<p>Novation Launchpad app Pupils can use the app to create their own music mix. These can be saved and exported from the app to be shared. IT5.4</p> <p>Pixlr app Use the app or website to edit the look and style of images linked to XXXX. Filters and various tools can be used to create different styles and outcomes. IT5.3</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. IT5.4</p>	

		before they begin. IT5.3			
Data Handling	<p>Spreadsheets (Maths) 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? Resources here IT5.7</p>		<p>Purple Mash Investigate 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. IT5.5, IT5.6</p>	<p>Microsoft Excel Use Microsoft Excel software to input data taken from Science experiments on Forces. Then use the spreadsheet to create graphs or charts which can be analysed and the results evaluated. IT5.7</p>	
Information Technology Skills	<p>IT5.1 Can independently plan and structure the layout of multimedia presentations, drawing on a range of different techniques and styles as appropriate for the task.</p> <p>IT5.2 When using digital art software, be able to select and change options within the creation tools to alter the effect or transform an image e.g. line width, opacity, blur, iterations, etc.</p> <p>IT5.3 Be able to include a range of media in documents or presentations, including images, video and sound, embedded media and hyperlinks.</p> <p>IT5.4 To be able to layer and edit sounds in appropriate sound editing software.</p> <p>IT5.5 With support, be able to organise data by designing fields and entering records in a database, checking for accuracy.</p> <p>IT5.6 Be able to query a database using keywords and filters to search a large database, for example using 'greater than', 'equal to' and 'contains'.</p> <p>IT5.7 Understand that spreadsheets perform calculations. Explore the effect of changing the cell values in a pre-prepared spreadsheet.</p>				