



## Bidston Village - Computing across the Curriculum Long Term Planning Map - Y4

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>	States of matter	Sound	Electricity Insulators and conductors	Living things and their habitats		Teeth and the Digestive system of humans and animals
<b>English</b>	Gorilla by Anthony Browne	Leon and the Place Between	Escape to Pompeii	When the Giant Stirred	Where the Forest Meets the Sea	Blue John
<b>History and Geography</b>	Romans Earthquakes and Volcanoes	Romans Earthquakes and Volcanoes	Anglo Saxons Europe - Compare with another region	Anglo saxons Europe - Compare with another region	Vikings International trade - Food	Vikings International trade - Food
<b>Music (from Musical Express)</b>	Environment  Composition	Time  Beat	In the past  Notation	Communication  Composition	Around the World  Pitch	Ancient Worlds  Structure
<b>DT</b>	Roman Shields	Modroc Volcanoes		Anglo-Saxon Jewellery	Exotic Yoghurt Design	Vikings Ship Design
<b>Art</b>	Lowry	The Renaissance	Cityscape	Art Deco	Myths and Legends	Symbolism

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

- F4.1** When typing, be able to use more than two fingers to enter text.
- F4.2** Know and be able to use keyboard function keys e.g. shift, caps lock, num lock, space bar, return.
- F4.3** Be able to rename a previously saved digital document or file appropriately.
- F4.4** If appropriate, be able to print a document.

## Computer Science

### Tutorial Link

#### Code Studio

[Code Studio](#). Create or print off existing user accounts for class on the website. Y4 should be working around Course D 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**

**CS4.1, CS4.2, CS4.3, CS4.4, CS4.5**

The extension activities below are non-essential, but teachers may wish to vary and consolidate learning from Code Studio.

### Control and Programming

#### Playground Games

If not done in Y3, use CS Unplugged playground games to introduce flowcharts. Debug faulty code. Playground games: [\(hi-impact resources\)](#)  
**CS4.1, CS4.5**

#### Scratch Jr app **T**

Plan a brief Roman story to program the sprites to act out. Consider the scenes and characters and short dialogue. Program the sprites to move in different ways. Use the broadcast commands to control the order of speech. Encourage continual testing to make debugging easier.  
**CS4.1, CS4.4, CS4.5**

#### Lego Fix the Factory app

Work through a series of levels of increasing difficulty to sequence directional commands and conditionals. This activity provides many opportunities for practicing debugging and perseverance.  
**CS4.1, CS4.5**

#### LightBot app

Solve problems by sequencing directions and debugging, extending to the use of procedures (actually a function) by identifying repeating patterns. **T**  
**CS4.1, CS4.5**

#### Turtle Playground

Use [Turtle Playground](#) to introduce Logo programming language. Use basic commands to program the turtle to draw numbers and letters. (NCCE Lesson [plan 1](#) and [plan 2](#).) Extend to include the use of loops to draw patterns and shapes. (NCCE lesson [plans 3](#) and [plan 4](#).)  
**CS4.1, CS4.4, CS4.5**

#### 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:](#)  
**CS4.1, CS4.4, SC4.5**

## Computer Science Skills

- CS4.1** Design, test and amend programs to achieve an intended objective, including controlling an external output.
- CS4.2** Be able to use nested loops to increase the efficiency of a program.
- CS4.3** Can use and change a pre-written function.
- CS4.4** Understands a wider range of 'events' such as sprite interactions and button presses, and can use them within programs.
- CS4.5** Be able to find errors in a program of their own design, and successfully debug to achieve a specific goal.

## Digital Literacy

### Tutorial Link

<b>Research: Internet</b>	<p><b>Save and store images</b> Use Safari or Google images on iPad or network for use in other multimedia activities. Save to a shared area or Google Drive/Dropbox folder, if applicable. <b>DL4.3</b></p>	<p><b>Develop key search questions T</b> Find information about the Romans. Introduce/recap keyword searches using the Common sense Materials. Teacher resources can be found here: <a href="#">link here</a> <b>DL4.3</b></p>	<p><b>Image search tools T</b> Explore the advanced search tools on Google or Bing to find suitable images related to Anglo Saxons. Discuss how choosing different criteria would affect the returns e.g. Search for clipart, black and white images, size etc. Save and store images on iPad or network for use in Word activity. Save to a shared area or Google Drive / Dropbox folder. <b>DL4.3</b></p>	<p><b>Compare websites</b> Investigate 3 different websites about a chosen European location and compare and contrast their usefulness. Generate success criteria in advance e.g. appearance, information, links, images and develop a scoring system. The teacher could suggest 3 or 4 websites and share them with the class via web shortcuts of the shared area. <b>DL4.1</b></p>	<p><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>DL4.3</b></p>	<p><b>BBC Bitesize: Teeth and Digestions</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="#">BBC Bitesize</a> <b>DL4.3</b></p>
	<p><b>Google Earth Voyager: Volcanoes</b> Use the guided tours to explore different information linked to volcanoes: <a href="#">Volatile Volcanoes</a> <a href="#">Inside the Marum Crater</a> <b>DL4.3</b></p>	<p><b>BBC Bitesize: Classification</b> Watch videos and explore activities. Use the interactive links to</p>				

				<p>search for the information to answer specific questions. Set questions which require the use of links to external websites.  <a href="#">BBC Bitesize</a>  <b>DL4.3</b></p>		
<p><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>DL4.2</b></p> <p><b>Online Quizzes</b>          Introduce <a href="#">Kahoot!</a> or <a href="#">Quizizz</a> websites for pupils to participate in online quizzes and continue throughout the year.  <b>DL4.2</b></p>					
	<p><a href="#">Password powerup</a>  <b>Common Sense media lesson</b>          Explore reasons why people use passwords, learn the benefits of using passwords and discover strategies for creating and keeping strong, secure passwords.  <b>DL4.5</b></p>	<p><a href="#">Rings of Responsibility</a>  <b>Commonsense Media lesson.</b>          How does the Internet connect you to others?          Students explore the concept that people can connect with one another through the Internet. They understand how the ability for people to communicate online can unite a community. Create a set of Class Rules for working online.  <b>DL4.6</b></p>	<p><a href="#">This is me - Online</a> -  <b>Common Sense media lesson</b>          Pupils explore online identities. From selfies to social media, many students and adults create unique online identities for ourselves, and our students are no different. This activity will help pupils think critically about online identities they are creating.  <b>DL4.6</b></p>	<p><a href="#">Our Digital Citizenship Pledge</a>  <b>Common Sense media lesson</b>          Belonging to various communities is important for kids' development. However, some online communities can be healthier than others. Show your students how they can strengthen both online and in-person communities by creating norms that everyone pledges to uphold.  <b>DL4.6</b></p>	<p><a href="#">The Power of Words</a>  <b>Common Sense media lesson</b>          Discuss that they may get online messages from other people that can make them feel angry, hurt, sad or fearful. Pupils identify actions that will make them strong in the face of cyberbullying.  <b>DL4.6</b></p>	<p><a href="#">Seeing is believing</a>  <b>Common Sense media lesson</b>          The web is full of photos, and even videos, that are digitally altered. It's often hard to tell the difference between what's real and what's fake. In this lesson pupils will learn to ask critical questions about why someone might alter a photo or video in the first place.  <b>DL4.1</b></p>

<p style="text-align: center;"><b>Modelling and Simulations</b></p>	<p><b>Google Earth (Volcanoes and Earthquakes)</b> Explore areas that are prone to earthquakes and volcanoes. Identify key features and landmarks using street view and 360° images. <a href="#">T Link here</a> <b>DL4.4</b></p> <p><b>Quiver app (Volcanoes)</b> Use the augmented reality app to model an erupting volcano and then label the different parts of a volcano. (The trigger sheet will need to be downloaded and printed out prior to the session.) <b>DL4.4</b></p>	<p><b>Sketch Nation <a href="#">online</a> (Roman)</b> Make a Roman themed up-jumping game where the power ups are helpful artefacts e.g. swords or shields and the enemies are appropriate to the player e.g. Celts, both of which affect the character in relevant ways. <a href="#">T</a> <b>DL4.4</b></p>	<p><b>Electricity resources</b> Use the <a href="#">Power Up</a> site to find several different simulations and activities based around the topic of Electricity. Particular activities, within the link, that may be relevant are: <a href="#">Spot the Hazard</a> <a href="#">Circuit Builder</a> <a href="#">The electric journey</a> <b>DL4.4</b></p> <p><b>States of Matter PhET Simulation</b> Use the relevant <a href="#">simulations</a> to demonstrate the chemical bonds affecting states of matter. <b>DL4.4</b></p> <p><b>John Travoltage PhET Simulation</b> Use the <a href="#">simulation</a> to show how static electricity works, by electrocuting John Travolta! <b>DL4.4</b></p>	<p><b>Google Earth</b> Look at the geography of a European location on <a href="#">Google Earth</a>. Look at physical features and also look at positions on the 3D globe. Identify key landmark features using the aerial view. Use Street view and 360° images to compare and contrast with another locality. <i>This could be done as part of a Geography lesson.</i> <a href="#">T</a> <b>DL4.3,DL 4.4</b></p>	<p><b>Google Earth</b> Use Google Earth to measure distances for food miles. <b>DL4.4</b></p>	<p><b>Health Simulations</b> Explore the digestive system with the following simulation: <a href="#">Link here</a> Please note, the simulation may take some additional explaining from the teacher. <b>DL4.4</b></p>

## Digital Literacy Skills

- DL4.1** When searching for information online, be able to evaluate how appropriate a website is.
- DL4.2** Be able to work collaboratively with others online, with support.
- DL4.3** Be able to search for and select relevant information (pictures and text) to use in other software, sorting by text, pictures, sound and video.
- DL4.4** Be able to predict the effect(s) of changing the variables in digital simulations and observe the results.
- DL4.5** Be able to understand the reasons for using strong passwords.
- DL4.6** Be aware of ways in which we interact with online communities and be able to suggest and use strategies for dealing with cyberbullying.

## Information Technology

### Tutorial Link

## Word Processing and Desktop Publishing

### Typing Skills

Lesson starter: Use [BBC dancemat typing](#) activities to improve keyboard skills. Children can choose their difficulty to differentiate the task.

**F4.1**

### Google Sites

Create a collaborative website to create an explanation as to why we have volcanoes. Develop basic word processing skills, changing fonts, inserting pictures while considering the audience.

**F4.1, IT4.1**

### Microsoft Word/Google Docs

Develop basic word processing skills. Present writing linked to Leon and the Place Between, focusing on layout, adding borders, changing fonts and inserting pictures while also teaching skills of saving and opening work correctly. **T**

**F4.1, IT4.1**

### Storyboard That

Create a poster to compliment persuasive work in English on PCs with the [Storyboard That website](#). Plan the story, considering scenes and dialogue and story progression. Use Google logins to access via PCs. Use relevant characters and backgrounds from the site. Change elements of the appearance. Format speech bubbles and captions with consideration for the audience.

**IT4.1, IT4.2**

### Adobe Spark Page app/website

Use the app or [website](#) (a login will be required) to create a webpage to present previous writing based on facts about an artist of their choice. Add images and text. Use the Glideshow option for groups of ideas. Add weblinks and videos to extend.

**IT4.1, IT4.2**

### Microsoft PowerPoint/Google Slides

Present a non-chronological report on the Vikings. Add sounds as well as images and text. Experiment with animations and slide transitions. **T**

**F4.1, IT4.1**

### Google Earth Project

In [Google Earth](#) create a 3D tour tracing the journey of Eric the Red

**F4.1, IT4.1**

### Google Earth Project

In [Google Earth](#) create a map of different food origins around the world. Add markers to the map and place images and information about the food chosen.

**F4.1, IT4.1**

			<p><b>Google Earth Project</b> In <a href="#">Google Earth</a> create a 3D tour presentation around a European Country. From the menu select projects. Search for key locations, and add images and information for each place. This could have been researched and written up previously. Pupils will need a class google account. <b>F4.1, IT4.1</b></p>			
<p><b>Multimedia</b></p>	<p><b>Green Screen</b> Film a news report from the war against Boudicca using pre-written scripts performed in front of a relevant background using the Doink Green Screen app. Use the iMovie app to edit together different segments of film. <b>IT4.3</b></p> <p><b>Purple Mash</b> Use <a href="#">Mashcams</a> to present Roman diary entries. Alternatively use the Chatterkid app using full face images of Roman characters. <b>IT4.3</b></p>	<p><b>iMotion app</b> Create a stop motion animation film to show the eruption of a volcano. Use the iPad stands and construct a plasticine mountain. Use coloured tissue paper as lava and add on very small amounts between each shot, and use cotton wool as ash. Use the onion skin and show how to delete unwanted images. <b>IT4.3</b></p> <p><b>Online Roman mosaics</b> Pupils can create their own Roman mosaic designs online using this <a href="#">website</a>.</p>	<p><b>Take photographs</b> Use iPads in the local area/school grounds, teaching basic photography skills e.g. framing, position, focus. Use PS Express app to edit these in different ways e.g. adding filters, cropping etc. Add these photos to the Quik app to make a film with music to create a gallery. <b>IT4.3, IT4.4, IT4.5</b></p> <p><b>Sketch app</b> Use images of setting from Pathways book and annotate in the app <b>IT4.2</b></p>	<p><b>Garageband app</b> Create music by exploring different instruments and loops building up layers of sound to create a musical piece. <b>T IT4.2</b></p> <p><b>Digital Microscope</b> Investigate living things in more detail.</p> <p><b>Incredibox</b> Use Incredibox (web app) to combine and layer sounds. Record and save the link to their work. <a href="http://www.incredibox.com">www.incredibox.com</a> <b>IT4.4</b></p> <p><b>Use a paint app/software</b></p>	<p><b>Shadow Puppets Edu app</b> Use Shadow Puppets Edu to retell the story of a chosen myth or legend. Children can find images online and save these to the camera roll. Import images into the app, add captions and/or narration for each part of the story. Pupils can choose key events from the story and add captions to each image. They can prepare a narrative for each slide and record their narration (this could be prewritten in topic work or English lessons). Pupils can also choose suitable</p>	<p><b>Video Creation</b> Use iMovie app, Adobe Spark Video app or <a href="#">website</a> to create a recount related to the Vikings <b>IT4.4</b></p> <p><b>Let's Create! pottery</b> Use Let's Create! Pottery App to make an image of Viking Jewellery with a focus on using accurate shapes, colours and styles that correlate with authentic Viking Jewellery IT4.2</p> <p><b>Garageband</b> Use GarageBand app to create basic layers of instruments to</p>

	<p><b>Audacity</b> Create and edit audio recordings. Use cut, copy, paste and effects such as amplify and fade in/fade out. This could be a conversation with a child in the role of an earthquake or volcano specialist. <b>T</b> Search for sound file using safe audio search sites e.g. <a href="#">Sound Bible</a> <b>IT4.6</b></p>	<p><b>IT4.5</b> <b>FX Guru app</b> Overlay film and images of earthquakes for drama and writing stimulus. <b>IT4.2</b> <b>Aurasma app</b> Create interactive volcano displays <b>IT4.2</b></p>		<p>Create digital art in the style of Art Deco. Model how to select colours, choose brush styles and textures. Developing skills in using all the tools available to create art considering the audience. Use Brushes Redux app or <a href="#">Sumo Paint</a> or <a href="#">Sketchpad online</a>. <b>IT4.5</b></p>	<p>background music for the video. <b>T</b> <b>IT4.3</b></p>	<p>create a simple composition. <b>IT4.6</b></p>
<p><b>Data Handling</b></p>	<p><b>Purple Mash 2Investigate</b> Use the <a href="#">app</a> to search existing databases to answer questions and create a European countries database. <b>IT4.6</b> <b>Mosaic Table</b> Create a table in MS Word or Publisher and use the fill tool to create a mosaic. <b>IT4.1</b></p>	<p><b>Toolbox app</b> Use seismograph function to demonstrate how earthquakes are measured. <b>DL4.5</b> <b>Sound Data Logging</b> Use Google Science journal app to measure sound. Record these using the graphing feature within the app and screenshot them to use in other work. Alternatively use Decibel X app to measure sound levels. <b>DL4.5</b></p>	<p><b>Spreadsheets - graphs</b> 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. <a href="#">Examples here</a> <b>IT4.5</b></p>	<p><b>Digital Graphing</b> Use an online <a href="#">graph</a> maker to present data from science or maths investigations. Students can select the most appropriate form of graph to present their data. <b>IT4.5</b> <b>Purple Mash 2Investigate</b> Use the <a href="#">app</a> to search existing databases to answer questions and create a European countries database. <b>IT4.6</b></p>	<p><b>Spreadsheets - formulae</b> 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. <a href="#">Examples here</a> <b>IT4.5</b></p>	



**Information Technology  
Skills**

- IT4.1** Can use a range of features of layout and design such as text boxes, columns and borders, to control the layout and presentation of a document.
- IT4.2** Be able to make use of a range of visual effects such as filters, hues, saturation, contrast and combining images to give different effects.
- IT4.3** Be able to create and add text, video, sound and other graphic effects to a video presentation for an audience, using editing techniques such as crop and trim.
- IT4.4** Able to layer sounds using music composition software.
- IT4.5** Be able to collect snapshot data from data loggers, selecting the appropriate tool to generate graphs or charts.
- IT4.6** Be able to create a branching database to sort and identify objects.