

St. George's Primary School - Computing across the Curriculum Long Term Planning Map – Year Group(s): Year 5

Technology/ Software	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	Is there anybody out there?		Vikings and Saxons		Cirque de Ciel	
Science	Earth and Space	Forces	Materials	Separating mixtures	Types of Change	Life Cycles
Literacy	Stories which raise issues (Elephant book) Persuasive Writing (animals in the circus) Instructions (survival guides)	Recounts Novels and stories by significant children's authors	Persuasive Writing Recounts	Kennings Choral & Performance Poetry Classic Narrative Poems	Dramatic Conventions Film Narrative	Older Literature 'Iron Man' Instructions Recounts
Core Books	Cosmic Wonder	FAR ^T HER The Water Tower	Clockwork The way things work now	Beowulf	Rooftoppers The Man who walked between Two Towers	Wonder
History	History of Space		Britain's settlement by Anglo Saxons and the Scots	Viking and Anglo Saxon Struggle	History of the Circus/Local Study	
Geography	Map and Atlas Work on Europe				Climate Zones	
Art	Painting	Clay Artist 3D tiles	Printing	Textiles	Digital media	Collage
CoJo						

This is your long-term overview for Computing. Please add to or amend this plan through the year. Refer to the skills sheets or tracker for the appropriate key skills and outcomes for each activity. More activities and suggestions can be added as Science, DT and other subject areas are added to the plan.

Developing simple algorithms, controlling, sensing and simulating the real world

Key Coding

Use Code Studio portal to teach discrete skills in computer science. Create user accounts for class on <https://studio.code.org/> website. After choosing appropriate age/ability course level for pupils to start from plan regular coding lessons each term. Track and target pupils progress using the websites built-in pupil tracker.

Control and Programming

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

Extension Activity
Use Hopscotch to draw shapes and patterns linked to Maths basic shapes, symmetry, repeating patterns e.g. Celtic knots. Focus on rotate and repeat commands. Use the tutorial videos in the App for guidance, if required. Resources here: <http://bit.ly/1EaZxNe> (possible hi-impact support)

Extension Activity
Use Scratch and Makey Makey keyboard emulator to look at how a computer can be controlled with a variety of inputs. Make a virtual Drum Machine or keyboard in Scratch and link it with Makey Makey to a 'physical' drum machine. (possible hi-impact support)

Extension Activity
Use full Lightbot App or Lightbot Hour of Code App to develop greater understanding of procedures and loop.

Extension Activity
Solve a math problem with one or two variables using Blockly: <https://blockly-demo.appspot.com/static/apps/plane/index.html?lang=en>

Extension Activity
Use Scratch desktop or online software to create and program their own projects. These could be based on the topic of Life Cycles or Iron Man. Use the link below to see others' programs in the community to use as examples: <https://scratch.mit.edu/explore/projects/all/>

Key Skills

- **Use "when and if" commands to create responses.**
- **Use "say" commands to give information.**
- **Test and debug regularly.**
- **Program and explain what happens when more than one variable changes.**
- **Use "and" "or" and "not" blocks to change responses and understand what they do.**
- **Be able to program responses to inputs from sensors such as Makey Makey or Picoboards**
- **Know when to use "repeat", "repeat until" and "forever if" loops to make programs shorter and more efficient and be able to use them (understanding the differences between them).**
- **Understand what 'events' are, such as mouse clicks and broadcasts and use them efficiently within programs to start and stop scripts.**
- **Understand what variables and procedures are in real life and be able to create them within a computer program to store and retrieve data.**
- **Think logically that when x happens y is the result and show this using code, flowcharts, diagrams or explanations.**

<p style="text-align: center;">Spreadsheets, Modelling and Simulations Data logging</p>	<p>Use the simulations on the link below to explore various aspects of Earth and Space such as the rotational orbits of Earth and other planets: https://goo.gl/FB8JkT</p> <p>Use Moonglobe/Solar Walk and Skyview apps.</p> <p>Earth, Sun and Moon simulations Use link above to explore the concepts around orbits and how day and night is formed.</p>	<p>Use the simulations on the link below to investigate different aspects of forces and the causes and effects that occur when they are in use: https://goo.gl/AVf34P</p>	<p>Use Sketch Nation app to create an Anglo Saxon game using various power ups and enemies relating to the story for different effects. Consider playability and appearance. Once created, children to play each others games, video each other playing the games and create game reviews.</p>	<p>Use dataloggers to help with an investigation into how heat changes the state of a material (freezing, thawing, boiling and evaporation).</p> <p>Reversible and irreversible changes Use the link above to predict and simulate if various materials are reversible or irreversible.</p>	<p>Use CoSpaces to create their own circus big top.</p> <p>Use additional models in CoSpaces to populate their circus with characters and acts.</p>
<p style="text-align: center;">Key Skills</p>	<ul style="list-style-type: none"> ● <i>To be able to identify a problem which can be solved by collecting data and to identify which data to collect</i> ● <i>To be able to make predictions for this investigation and understand how to make it a fair test</i> ● <i>To be able to carry out the investigation, ensuring efficiency and accuracy</i> ● <i>To be able to Interpret results, using a range of searches and graphs, draw conclusions and analyse the effectiveness of the technology</i> ● <i>To draw conclusions from data and present findings to a specified audience.</i> ● <i>To justify reasons for their choices and explain why other methods were not appropriate</i> 				

Finding things out, collecting and sorting data

<p>Database / Graphing</p>	<p>Use Excel or Airtable to create a database of the different planets in our solar system. Then query using AND/OR /NOT/=/>/< searches</p>	<p>Use Create A Graph to make graphs linked to datalogging activity: https://goo.gl/XceBry</p>	<p>Use Airtable to create a collaborative database of Viking Gods Logins will need to be created for the children (if not one each then 1 login per group of 4-6). Use https://goo.gl/wD8m8K to find information.</p>	<p>Use Create A Graph to make graphs linked to datalogging activity: https://goo.gl/XceBry</p>	<p>Use Microsoft Excel software to input data taken from Science experiments changing state. Then use the spreadsheet to create graphs or charts which can be analysed and results evaluated.</p>	
<p>Key Skills</p>	<ul style="list-style-type: none"> ● To organise data by designing fields and records in a database ● To be able to design questions using key words, to search a large pre-prepared database ● To be able to search using greater and less than ● To be able to use graphs to provide supporting evidence for their conclusions ● To be able to check for accuracy by checking data and looking at graphs ● To be able to present results of database research 					
<p>Research: Internet</p>	<p>Explore activities and information about the Space using 3 websites. Discuss usefulness of each: https://www.esa.int/esaKIDSen/ https://www.nasa.gov/kidsclub/index.html https://goo.gl/rcWQMw</p> <p>Look at information from different viewpoints and validate information.</p>	<p>Use a website on Space or space programs to find specific information, using only 5 hyperlinks and other information on the page.</p>	<p>Learn about responsible Internet use - how certain rules are wise to use wherever the Internet is accessed. Show how it is possible to increase Internet safety wherever you are by following certain guidelines.</p> <p>Use resources from: http://www.childnet.com/resources to have children focus on appropriate use of the Internet.</p>	<p>Investigate plausibility. Look at Spoof websites and how they 'appear to be true'.</p> <p>Teacher resources here: http://bit.ly/1KSCDIC and https://goo.gl/tP0tai</p>	<p>Research Climate change. Select keywords and phrases too that work effectively when searching for specific information.</p>	<p>Begin to use Google Advanced search. Use a large database (Google search engine) to search for information e.g. Fairtrade products. Use information found online to inform presentation work, without copying and pasting text.</p>

Key Skills	<ul style="list-style-type: none"> ● <i>To be able to search the internet for specific information using tools such as Google Advanced Search (Boolean searches)</i> ● <i>To be able to skim read and sift information found online</i> ● <i>To be able to check information for accuracy</i> ● <i>To be able to identify irrelevant, biased, implausible and inappropriate information</i> ● <i>Use hyperlinks to trail an idea</i> ● <i>To be able to use a range of search engines and select the most appropriate based on the tools they provide (e.g Google or Bing)</i> ● <i>Use information from internet to make notes and present in a form of their choosing, without using copied/ pasted text</i> ● <i>To be able to save media from the internet to be uploaded to an online platform.</i> ● <i>To be aware that some media is copyrighted and cannot be used without permission.</i> 						
Online Communication	<p>Develop and understand code of conduct for online collaboration and explain what to do in cases of cyberbullying.</p> <p>Use the Childnet Digizen site to develop awareness about Digital Citizenship: http://www.digizen.org/kids/</p>	<p>Learn about using email, learn what spam is, the forms it takes and then identify strategies for dealing with it. Think U Know Cyber Café - Griff's email activity. https://goo.gl/XUvSIW</p>	<p>Learn about use of passwords in daily life. Resources at: https://goo.gl/A8ZmNr</p>	<p>Use Cyber Café from Think U Know to explore different forms of communication they use and safe ways to use them.</p>	<p>Use website below to look at how advertising tricks are used by different industries. Use Google classroom to set up an online debate for the class to take part in on the subject. http://pbskids.org/dontbuyit/buyingsmart/</p>	<p>Use video conferencing to widen the range of opportunities for meaningful interaction, for example: Eduskype.</p>	
Key Skills	<ul style="list-style-type: none"> ● <i>To be able to upload informative and interesting content to a VLE including various media.</i> ● <i>To be able to initiate and take part in collaborative learning using a variety of methods e.g. email, discussions, quizzes, surveys, blogs, wikis, web quests, video conferencing</i> ● <i>To be able to talk about how to use the social media and internet search engines safely.</i> ● <i>To be able to develop and understand rules for personal internet safety</i> ● <i>To be able to develop and understand code of conduct for online collaboration, and explain what to do in cases of cyberbullying</i> ● <i>To be able to present findings to a specific audience</i> 						

Using software and devices to collect, analyse, evaluate and present information and data

<p>Word Processing/ DTP/ Multimedia</p>	<p>Use the Buncee website to create a multimedia presentation about Space https://www.edubuncee.com/ (a school or class login will be required).</p> <p>Use ThingLink App to hotspot selected areas of an image of the solar system to present information using text, images or video (see below)</p>	<p>Use Microsoft Word to develop writing linked to literacy. Focusing the structure and layout of the work to fit the purpose. For example, a newspaper recount.</p>	<p>Create a comic strip using Comic Life App, Seedling Comic studio or other software. This could be a comic style recount or retelling of a Viking saga.</p>	<p>Use Storybird, Buncee or StoryJumper to create an online eBook for younger children e.g. Y2 based on the Anglo Saxons https://storybird.com http://www.storyjumper.com/ https://www.edubuncee.com/home</p>	<p>Make a non-linear hyperlinked PowerPoint linked to a film narrative. Use advanced animations to 'Make Your Own Adventure' quest. Ensure text and images use a common style.</p>	<p>Use Adobe Spark Page software or App (a school or class account login will be required) to create an explanation of a lifecycle of a particular animal. https://spark.adobe.com/</p>
<p>Key Skills</p>	<ul style="list-style-type: none"> ● Format text to indicate relative importance. ● Justify text where appropriate. ● Cut and paste between applications. ● Delete/insert and replace text to improve clarity and mood. ● Make corrections using a range of tools (eg spell check, find and replace) ● Develop confidence using both hands when typing ● Select appropriate software for the task/audience ● Plan structure and layout of multimedia presentation ● To be able to evaluate and select suitable information and media from a range of electronic resources ● To be able to use a multimedia authoring program to organise, refine and present information for a specific audience ● To be able to create a range of hyperlinks to produce a non-linear presentation ● Through peer assessment and self evaluation, make suitable improvements 					
<p>Paint / Draw / Photo editing Animation / Video</p>	<p>Use iPad painting App (iPastels) to experiment with layers in recreating Picasso pictures. (Free App allows two layers, paid App allows three layers).</p>	<p>Use Splice App to create a slideshow of images related to a famous Astronaut. Record a voiceover, to explain to create a video slideshow</p>	<p>Use the DoInk app to create green screen films, using pre-written scripts about a Saxon adventure.</p> <p>Use iMovie/Splice to create a persuasive</p>		<p>Use iMovie/Splice Apps to create short presentations about a famous Circus</p> <p>Use iPicky online editor to create a movie poster</p>	<p>Use iMotion to create stop motion animation of the life cycle of an animal. Edit using Splice or iMovie Apps. Include title slides and background music.</p>

	Save as images and then create their own gallery of images using Photomontager App.	Create an animation of how the Earth, Sun and Moon interact using stop motion animation App, iMotion. Then edit together using Splice App.	presentation/trailer/ advert linked to Literacy topic. Add images, video and use persuasive writing concepts.		advertising a fictional Circus. Use a range of effects and editing tools to combine multiple images. http://ipiccy.com/	
Key Skills	<ul style="list-style-type: none"> ● To be able to select, copy and paste within and between photographs ● To be able to explore “airbrush” techniques to improve photographs, such as used in magazines with celebrities ● To be able to use different filming techniques and camera angles e.g. zoom, panning, wide shot etc to create different mood/perspective ● To be able to plan a video or animation by drawing a storyboard ● Film, create, edit and refine to ensure quality; present to an audience 					
Sound / Podcast / composition	Children to use the GarageBand App to use various instrument loops to create a composition. Children should focus on how various sounds can be altered by using effects to change the volume, pitch and tempo.	Produce an interview with an Anglo-Saxon asking them about their way of life. 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.			Use Novation Launchpad App (free) to create their own music mix. or Create a radio play/program with sound effects and jingles using Audacity desktop software. This could be an advert for their own circus. Write as a playscript in Literacy before rehearsing and recording.	
Key Skills	<ul style="list-style-type: none"> ● To be able to select and edit sounds, text, movie clips and other effects to suit purpose and audience ● To be able to collect sounds from a variety of sources (sound editing software, online, digital sound recorder) ● To be able to import sounds, (recorded vocals, samples (digital sound files) and recordings from real instruments) into sound editing software ● To be able to layer and edit sounds ● To be able to save multimedia work as a web compatible format for uploading and podcasting; share online 					