

Curriculum Narrative: Computing (North Elmham)

CS = Computer Science, IT = Information Technology, DL = Digital Literacy

		Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Summer 2
Year 1		<p>Use technology safely and respectfully, keeping personal information private. Use technology purposefully to create content. <u>E-safety/Multimedia</u></p> <p>How do I stay safe online? Why do we keep personal information private? How can I communicate through email?</p> <p>How can I log onto a Chromebook? How do I use Google Docs to add words and photos (inc. using the space bar)?</p> <p>https://projectevolve.co.uk/toolkit/years/year-one/privacy-and-security/</p> <p>VOCAB: safe, online, personal, private, information, email,</p>	<p>Use technology purposefully to create, manipulate and retrieve digital content. <u>Data Handling</u> (linked to Science sorting & classifying, pattern seeking)</p> <p>How can I use technology to take photos, videos and sound? Can I help represent and interpret data in a pictogram?</p> <p>VOCAB: photo, video, sound recording, represent, data.</p>	<p>Use technology purposefully to create, manipulate and retrieve digital content. <u>Multimedia</u></p> <p>How can I use an ipad to record video, photos and sounds? Can I create sound and simple music using ICT tools?</p> <p>Google Music Maker</p> <p>VOCAB: photo, video, sound, playback, record.</p>	<p>Recognise common uses of information technology beyond school <u>Technology in our Lives</u></p> <p>What technology is used in my home and community? What online tools can help me to create and communicate?</p> <p>VOCAB: technology, home, community, internet, communication, websites, programmes, create.</p>	<p>Understand what algorithms are; how they are implemented as programs on digital devices. <u>Programming</u> (linked to PE & Maths).</p> <p>Can I follow careful instructions? What happens when you press buttons on a robot in sequence? Can I use programmes to create movement and patterns on screen?</p> <p>VOCAB: instructions, sequence, robot, move (steps), left/right, pattern, code.</p>	<p>Create and debug simple programs. <u>Programming</u></p> <p>Can I create an algorithm to achieve a specific purpose? With a floor robot? And predict what will happen? How can I debug to correct an error?</p> <p>VOCAB: algorithm, program, code, debug, predict, error/mistake.</p>

		communicate, login, password, programme, space bar.					
Year 2		<p>Use technology safely and respectfully, keeping personal information private. Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p><u>E-Safety/Multimedia</u></p> <p>How does my password protect my information? What is meant by a 'digital footprint' and what do I need to do to manage it?</p> <p>How do I create documents and add text and images? Can I use my left and right hands to type quicker (inc 'enter', 'caps lock', 'shift' and 'backspace' buttons). How do I save, retrieve and edit my documents?</p>	<p>Use technology purposefully to create, manipulate and retrieve digital content.</p> <p><u>Data Handling</u> (Link to Maths and Science - potentially living things and their habitats - pattern seeking and sorting and classifying)</p> <p>How can I use tools, such as a microscope, to capture and save images? How can I collect information/ data and use it to generate charts? How can I save and retrieve this data?</p> <p>VOCAB: represent, data, website, retrieve, edit, create/generate.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p><u>Multimedia</u></p> <p>Can I use a 'paint' programme to use a variety of tools and effects? Can I make an electronic book? How do I create sound and music in animation programmes?</p> <p>VOCAB: programme, online, tools, effects, electronic book, sound/music, animation.</p>	<p>Recognise common uses of information technology beyond school.</p> <p><u>Technology in our lives</u></p> <p>What sources of information do people use and what are the differences? What is the internet? What is its purpose and uses? What content can be found on websites? Do I know that some things may not be true or accurate?</p> <p>VOCAB: sources of information, the internet, content, websites, false, inaccurate.</p>	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p><u>Programming</u> (Link to PE and Maths)</p> <p>Can I follow and give clear instructions (using 'forward, backward, turn - right angle')? Can I articulate an algorithm to achieve a purpose? Can I plan and enter a sequence of instructions to achieve an algorithm?</p> <p>VOCAB: instructions (forwards, backwards, turn - right angle), algorithm, sequence, code.</p>	<p>Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs</p> <p><u>Programming</u></p> <p>What happens when I give a simple logo programme instructions? With a robot - specifying distance, turn and drawing a trail? Can I debug so solve a problem? Can I predict what will happen and test results? What similarities and differences are there between floor robots and logo on screen?</p> <p>VOCAB: programme, robot, distance, movement (steps), trail, turn, debug, predict, instructions, algorithm, code.</p>

		<p>https://projectevolve.co.uk/toolkit/years/year-two/privacy-and-security/</p> <p>VOCAB: password, protection, digital footprint, search, internet, document, create, save/store, retrieve, edit, (various keyboard functions).</p>					
Year 3/4	Year A	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p><u>A Google Classroom</u> (setting up for the year ahead)</p> <p><u>Google Drive</u> - learning to create, retrieve, edit and</p>	<p>IT3, DL3, DL4, DL5</p> <p><u>'Get Blogging' Knowsley SOW p120-122</u> (Link to diaries/ blogging in 'Stars of Egypt' unit)</p> <p>Children will develop an understanding of how wikis work and will create their own wiki in small groups encouraging collaborative writing. Children will also review examples of blogs online, learn the basic elements of creating a blog and will then create their very own.</p>	<p>DL & CS</p> <p><u>E-Safety & Sequencing</u> From Code.org Course C (2019) lessons 1-7</p> <p>What to do if something online makes you feel angry, sad or scared. How passwords protect your information.</p> <p>Program your classmates to build stacked cups. Learn about sequences and algorithms. Find problems in puzzles and practise debugging. Write algorithms for a sprite to collect</p>	<p>DL & CS</p> <p><u>Binary & Loops</u> From Code.org Course C (2019) lessons 8-13</p> <p>Binary - how computers remember information. Program your classmates using loops to solve problems. Help sprites through mazes using loops and collect items. Learn about conditionals. Use loops to make cool art.</p> <p>VOCAB: binary, loop, repeat, condition(al).</p>	<p>CS, DL, IT</p> <p><u>Events & Data</u> From Code.org Course C (2019) lessons 14-18</p> <p>Play a game to learn about events. Build a Flappy Bird game and share it. Make a game in Play Lab.</p> <p>Collect data from Play Lab and visualise it using different graphs.</p> <p>End of course project: build your own project with coding.</p> <p>VOCAB: event.</p>	<p>IT3, DL5</p> <p><u>'Going for Gold' Knowsley SOW p140-142</u> (Link to Olympics)</p> <p>Children will create a "My body, My fitness" e-book, which will document each week a personalised "Going for Gold" record.</p> <p>https://bookcreator.com/</p> <p>VOCAB: ebook</p>

		<p>share files. Organise using folders. https://applieddigitalskills.withgoogle.com/c/college-and-continuing-education/en/g-suite-certification-drive/overview.html</p> <p>https://applieddigitalskills.withgoogle.com/c/middle-and-high-school/en/organize-files-in-drive/overview.html</p> <p>Google Docs - retrieve files and edit (including retrieving versions of the files). Change font, colour, size efficiently. Insert: images from the web (within Docs), tables and drawings. Use other tools and functions such as bullet points, bold, italics and underlining. https://teaching.org/curriculum/key-stage-2/creating-media-desktop-publishing</p> <p>VOCAB: create, retrieve, edit, share,</p>	<p>VOCAB: blogging, wiki, internet, communication, HTML</p>	<p>objects. Create images with code. OR</p> <p>https://projectevolve.co.uk/toolkit/years/year-three/privacy-and-security/</p> <p>VOCAB: cyberbullying, online, password, protect, secure, algorithm, bug, debugging, program, sequencing.</p>			
--	--	---	--	---	--	--	--

		organise, versions, tools, tables, drawings.					
Year 3/4	Year B	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p><u>A Google Classroom</u> (setting up for the year ahead)</p> <p><u>Email</u> - composing, writing and sending an email. Replying to single and multiple recipients. Attaching a file/image. <u>Google Slides</u> - inserting multiple slides, text, images and selecting a theme/background. Using transitions for separate lines of</p>	<p>CS Sequencing & Events From Code.org Course D (2019) lessons 1-6</p> <p>Program your classmates to draw pictures. Online puzzles. Debugging and fixing problems in your code.</p> <p>Make your own video games. Build a Star Wars game.</p> <p>VOCAB: algorithm, program, bug, debugging, loop, event.</p>	<p>CS8, IT2, IT3. <u>'Back to the future' Knowsley SOW</u> <u>p156-159</u></p> <p>In this project, children will create their own blog detailing what they learn from research that they will complete throughout the six sessions. Children will learn about different technologies both old and new, about inventors and the different components of a computer.</p> <p>VOCAB: wiki, augmented reality, technology, microchip, inventors, blog, components, hardware, software, trending.</p>	<p>CS Loops & Conditionals From Code.org Course D (2019) lessons 7-12</p> <p>Use repeat blocks to reach a destination efficiently. Use loops to make cool images. Loops inside a loop - what happens when you create a nested loop?</p> <p>Play a game, earning points under certain conditions. Program Bee to collect items using conditionals. Using the 'while' loop in coding.</p> <p>VOCAB: loop, repeat, command, conditional, while loop.</p>	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. <u>E-safety</u></p> <p>Use p10-11 from: https://www.dropbox.com/sh/prexpk8xn609sig/AAC_wyZ-07LgGXHShqo1Dkh3a/eSafety?dl=0&preview=eSafetySchemeofWorks.docx&ubfolder_nav_tracking=1</p> <p>Children get involved in understanding and discussing about: the risks of using the internet, how to communicate and protect yourself online, identify cyberbullying and how to deal with it, introduction to 'copyright',</p>	<p>DL3, DL4, DL5 <u>'Hurray for Hollywood'</u> <u>Knowsley SOW</u> <u>p163-166</u> (Link to Romans - a movie about Roman myths)</p> <p>From this project, children will learn about the key factors in producing good footage. The children will devise their own characters, plot and storyboard before filming their short movie. The children will then import their film clips into iMovie where they will edit and enhance their footage before sharing their movie with the rest of the class.</p> <p>(using Google's video editor would work well with a class here: https://chrome.google.com/webstore/detail/video-editor-for-</p>

		<p>text. https://applieddigitalskills.withgoogle.com/c/middle-and-high-school/en/show-appreciation-with-google-slides/overview.html</p> <p>VOCAB: email, compose, recipient, reply, attach, slides, theme, transition/animation.</p>				<p>importance of passwords.</p> <p>OR use a few units from https://projectevolve.co.uk/toolkit/years/4/</p> <p>VOCAB: risks, internet, social network, online profile, settings, cyberbullying, cyberspace, unacceptable content, copyright, plagiarism, passwords, security.</p>	<p>chromebo/okgjbfikeypfilmlglfgcemgjnmmnnb?hl=en)</p> <p>VOCAB: storyboard, footage, script, import, organise, trim, sound, lighting, clips, gallery, text.</p>
Year 5/6	Year A	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information <u>A Google Classroom</u> (setting</p>	<p>CS, DL <u>Sprites & Digital Citizenship</u> From Code.org Course E (2019) lessons 5-10</p> <p>Play a game and think about what commands are needed to get the right result. Learn how to create and edit sprites. Create an interactive project that can be shared with classmates.</p> <p>This lesson teaches you the difference between information</p>	<p>DL5, IT2, IT3 <u>'Code Breakers' Knowsley SOW p194-196</u> (Link to World War - Enigma Machine)</p> <p>Introduction to the concept of binary code and how codes can be deciphered. Children will go around the school finding codes they need to decipher.</p> <p>VOCAB: decipher, binary code, central processing unit</p>	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. <u>E-safety</u></p> <p>Use p12-14 from: https://www.dropbox.com/sh/prexpk8xn609sig/AAC_wyZ-07LgGXHShqo1Dkh3a/eSafety?dl=0&pr</p>	<p>IT2, IT3, DL5 <u>'Grand Designs' Knowsley SOW p201-203</u> (Link to 'Seven Wonders of the World' - buildings)</p> <p>Learning about our built environment can help us understand so much about our history, culture and how buildings have shaped our society. Children will explore drawings representing both 2D and 3D worlds.</p>	<p>CS <u>Nested Loops & Functions</u> From Code.org Course E (2019) lessons 11-17</p> <p>What happens when you place a loop inside another loop? Drawing with nested loops.</p> <p>Functions using lyrics from songs. Use functions for the most efficient code. More complex drawings.</p>

		<p>up for the year ahead)</p> <p><u>Google Sheets</u> - insert multiple sets of data and select an appropriate chart to convert the data into. Using simple formulae to give totals to cells. https://teachcomputing.org/curriculum/key-stage-2/data-and-information-flat-file-databases</p> <p><u>Google Forms</u> - create a survey with various types of questions and allowing multiple options. Share a survey with users and respond complete ones that have been sent to you. Analyse your results (responses) by exporting into charts. https://applieddigitalskills.withgoogle.com/c/middle-and-high-school/en/create-quizzes-in-google-forms/overview.html</p> <p>VOCAB: spreadsheet, cell, row, column, data, chart, function,</p>	<p>that is safe to share and information that is private. By creating an interactive poster with SpriteLab, students will apply their understanding of sharing personal and private information on the web.</p> <p>VOCAB: behaviour, command, sprite, event, identity theft, personal/private information, register, accessibility.</p>	<p>(CPU).</p>	<p>eview=eSafetySchemeofWorks.docx&subfolder_nav_tracking=1</p> <p>Chn get involved in understanding and discussing about: the risks of using the internet and online behaviour, awareness of social networking sites and protection, awareness of cyberbullying and effects, identify who they should talk to online, what is meant by copyright and plagiarism, risks of online gaming and protection.</p> <p>OR use 'Online Relationships' and 'Health, Wellbeing and Lifestyle' units from https://projectevolve.co.uk/toolkit/years/5/</p> <p>VOCAB: risks, internet, social network, online profile, private profile, online behaviour, social networking,</p>	<p>They need to think about who they are designing their building for and other elements such as what materials they might use.</p> <p>VOCAB: SketchUp, environment, design, modelling, line, outer shell, arc, components, style, view.</p>	<p>VOCAB: loop, nested loop, repeat, function.</p>
--	--	--	--	---------------	---	---	---

		sum, survey, questions, options, responses, analyse, export.			cyberbullying, truth, protection, copyright, plagiarism, sources of information, online gaming,		
Year 5/6	Year B	<p>CS4, IT3, DL5 <u>'Earth & Space' Scratch project</u> (Link to Science: Earth & Space)</p> <p>Children will use Scratch and story sequencing to create a fact game about the planets of the solar system. https://teachcomputing.org/curriculum/key-stage-2/programming-b-selection-in-quizzes</p> <p>VOCAB: Sprite, stage, backdrop, coding, bug, debug, sequence, story, block, command.</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p><u>A Google Classroom</u> (setting up for the year ahead)</p> <p><u>Google Sites</u> - make a front cover for your website (include themes, pictures and text). Learn about pages - add pages to your site. Embed URLs and HTML code to your site. https://teachcomputing.org</p>	<p>CS4, CS5, IT3 <u>'Heroes and Villains' Knowsley SOW p229-232</u> (Link to Ancient Greece characters/ Gods)</p> <p>Children create their own Heroes and Villains style game using Scratch. The Hero battles against the Villain to collect diamonds and destroy each other's health.</p> <p>VOCAB: sprite, conditional language (if, then, else), looping, variable, broadcasting, sensor.</p>	<p>DL & IT <u>The Internet & Digital Citizenship</u> from Code.org Course F (2019) lessons 14, 17-19</p> <p>How does the internet work?</p> <p>What is and isn't okay to say online?</p> <p>What is crowdsourcing?</p> <p>What are the challenges and benefits of ownership and copyright?</p> <p>OR</p> <p>https://projectevolve.co.uk/toolkit/years/6/self-image-and-identity/</p> <p>VOCAB: DNS, DSL/Cable, Fibre optic cable, internet, IP address, packets, servers, URL, wi-fi, cyberbullying,</p>	<p>DL5 <u>'Stocks and Shares' Knowsley SOW p213-21</u></p> <p>Children gain an understanding of the stock market. They analyse data, make informed choices, present and critique their decisions. Brings together skills of using Docs, Slides and Sheets together and how they complement each other.</p> <p>VOCAB: stocks and shares, selling, buying, invest, pitch.</p>	<p>CS & IT <u>Variables & Data</u> from Code.org Course F (2019) lessons 6-10</p> <p>Learn what variables are. Drawings with variables. Changing variables.</p> <p>Run simulations and experiment by changing variables.</p> <p>VOCAB: variable, constant, models, simulations.</p>

			ing.org/curriculum/key-stage-2/creating-media-web-page-creation VOCAB: website, title, theme, page, tab, embed, URL, HTML		crowdsourcing, copyright.		
--	--	--	---	--	---------------------------	--	--

FOR RESOURCES FROM KNOWSLEY SCHEME OF WORK visit https://www.dropbox.com/sh/prexpk8xn609sig/AADsepsU_pi1CdQ6IYz3r8XFa

For more support with teaching Google Tools visit Google's Applied Skills Lessons: <https://applieddigitalskills.withgoogle.com/c/en/curriculum.html>

For more support with planning **Computer Science** units visit <http://code-it.co.uk/csplanning.html>

<https://code.org/educate/curriculum/elementary-school>

For teaching **Non-Computer Science** units (**Digital Literacy & Information Technology**) visit <http://code-it.co.uk/dlplanning>

For further (and more up-to-date) schemes on e-safety, including Reception: <https://projectevolve.co.uk/toolkit/years/>

How the internet works: <http://code-it.co.uk/netintsearch>

KS1 useful resources:

- **Programmable Toys** - Beebot/Roamer - *plan, test, discuss, carry out, debug and improve programs.*
- **Light Bot** <https://lightbot.com/flash.html> - create sequences of instructions to manoeuvre a robot around a level and get to each blue square.
- **Magic Pen** <http://www.bubblebox.com/play/puzzle/975.htm> - develop computer skills and computational thinking to solve problems by drawing objects to make a ball reach a flag. (ALLOW GAME TO LOAD FULLY, DO NOT CLICK ON ADVERTS).
- **Fantastic Contraption** <http://www.fantasticcontraption.net/>) - build virtual contraptions from simple instructional components to learn the benefits of predicting, testing and improving design.