



Computing Overview

Blue = computing lessons/activities/ideas in cornerstones projects

Orange = NCCE units mapped to make links to the cornerstones projects

Sticky Bits based on the NCCE units

THINKING THREADS

	Autumn 1	Autumn 2		Spring 1	Spring 2		Summer 1	Summer 2	
Y1	Memory Box Hist, Sci	Enchanted Woodland Sci, Art -Research The Woodland Trust -Send class email	Rio De Vida Music -research flags of the world - animation, record voice over e.g. puppet pals app	Bright lights, Big city Geog, Art -Bee bots - research / images -Scratch Jr -programming routes -plan a trip -skype/facetime -email -class digital information page/book	Paws, claws and whiskers Art, Sci -zoo animal images	Moon Zoom Sci, DT -use drawing software to create aliens, add background, speech bubble etc. -emails -beebot route on alien terrain	Splendid Skies Sci, Geog	Dinosaur Planet Hist, DT -bee-bot on prehistoric landscape -Search engine - dinosaur names	Superheroes DT, Hist Willy the Wimp -Research / images of superheroes - create own superhero pictures - use photo and add features using drawing app -research real heroes e.g. RNLI -online safety
	NCCE Y1 unit 1: Computer Systems & Networks - technology around us Technology is something that has been made by people to help us. Computers are a type of digital technology. CHANGE	NCCE Y1 unit 5: Creating Media - digital writing We can use digital devices to help us write using programs called word processors Writing digitally means we can change the look of the text (font/size) and easily edit. CREATIVITY	NCCE Y1 unit 3: Programming A - moving a robot Programming is when we make a set of instructions (an algorithm) for computers to follow. We can use algorithms to program floor robots along routes. PROCESSES	NCCE Y1 unit 2: Creating Media - digital painting We can use digital devices to help us create pictures. When we use paint programs, we can use tools to draw in different ways and create different effects. CREATIVITY	NCCE Y1 unit 4: Data & Information - grouping data Data can be numbers or words. Information is what we can understand from looking at data. Labels can be used to place objects into groups. PROCESSES	NCCE Y1 unit 6: Programming B - programming animations Scratch is a program we can use to code our own stories using sprites. We use algorithms to program the sprite to do different things. PROCESSES			



	Autumn 1	Autumn 2		Spring 1	Spring 2		Summer 1	Summer 2	
Y2	Street Detectives Hist, Geog -photographs of local walk -beebot (around a street)	Bounce Sci, Art (Hist)	Beat Band Boogie Music, Sci (Hist) -voice recording, altering/distorting voices	Land Ahoy Geog, Sci (Hist) -beebot (ship)	Muck, mess and mixtures Art, Sci (Hist) -stop motion animation using play dough models -research – artists	Beachcombers Sci, DT (Hist) -research crustaceans -research seabirds	Towers, tunnels and turrets Geog, DT (Hist) -drawing castles using drawing software, annotate	Wriggle and Crawl Sci, Art (Hist) -unplugged – directions -hungry caterpillar algorithms -program bee-bot -debugging life cycles -bee webcam -stop motion animation – ants -life cycle animation	Scented Garden Sci, DT
	NCCE Y2 unit 2: Creating Media – digital photography We can use digital devices to take and edit photos. Not all photographs that we see are real – they might have been edited. CREATIVITY	NCCE Y2 unit 5: Creating Media – digital music We can use digital devices to help us create, edit and listen to music. We can use apps to change the pitch and tempo of music. CREATIVITY		NCCE Y2 unit 3: Programming A – moving a robot We use algorithms (a set of instructions) to help robots to do things we want them to. Debugging can help to correct algorithms and programs. PROCESSES	NCCE Y2 unit 1: Computer Systems & Networks – IT around us Technology is ‘man-made’ and not ‘natural’. Information Technology (IT) includes computers and things that work with computers. CHANGE		NCCE Y2 unit 4: Data & Information – pictograms Data about different things can be recorded and presented using pictograms, tally charts and bar charts. This data can then be used to answer questions and solve problems. PROCESSES	NCCE Y2 unit 6: Programming B – programming quizzes Scratch is a program we can use to code programs using a series of command blocks. This can be used to design quizzes. PROCESSES	



	Autumn 1	Autumn 2		Spring 1	Spring 2		Summer 1	Summer 2	
Y3	Tribal Tales Hist, Sci, Art	Predator Sci, Art -Beebots x 2 lessons -Food chains – drawing programme -web search predators -poster -digital drawing -edit photos	Heroes and Villains Music -web search historical heroes	Tremors Geog, Sci	Urban Pioneers Art, Hist, Sci -digital maps -email -make a webpage -Algorithms – Traffic lights -Traffic barrier – sensory activated	Scrumdiddlyumptious DT, Sci -design food label, photo, email	Flow Geog, Sci -web research of river features -research and present about river dolphins -word processing	Gods and mortals Hist, Geog -powerpoint presentation	Mighty Metals Sci, DT -record data in spreadsheets - powerpoint presentation
	<p>NCCE Y3 unit 3: Programming A – sequencing sounds</p> <p>An algorithm is a set of instructions to perform a task.</p> <p>We can use algorithms to sequence movements, actions and sounds in order to program effective animations.</p> <p>PROCESSES</p>	<p>NCCE Y3 unit 4: Data & Information – branching databases</p> <p>Data is raw numbers and figures. Information is what we can understand from looking at data.</p> <p>Branching databases can help us to identify objects within sets of data. They are useful when we want to classify objects.</p> <p>PROCESSES</p>		<p>NCCE Y3 unit 6: Programming A – events and actions in programs</p> <p>In Scratch we can use event and action command blocks to make sprites carry out acts when certain prompts take place.</p> <p>In Scratch, blocks can stack vertically on top of one another to create sequences.</p> <p>PROCESSES</p>	<p>NCCE Y3 unit 1: Computer Systems & Networks – Connecting computers</p> <p>Digital devices have an input, process and output.</p> <p>Information and data can be shared across networks. Many devices are used to create networks.</p> <p>CHANGE</p>		<p>NCCE Y3 unit 5: Creating Media – desktop publishing</p> <p>Desktop publishing is when we create documents, such as newsletters and posters, using page layout software.</p> <p>When using desktop publishers, we carefully consider how text and images are laid out on the page.</p> <p>CREATIVITY</p>	<p>NCCE Y3 unit 2: Creating media – stop-frame animation</p> <p>Animation is a technique used to make objects and drawings appear as if they are moving.</p> <p>Stop-frame animation is a technique in which many photographs are taken of objects with small movements in between. When the images are quickly shown together, the objects appear to move (they are animated).</p> <p>CREATIVITY</p>	



	Autumn 1	Autumn 2		Spring 1	Spring 2		Summer 1	Summer 2	
Y4	I am Warrior! Hist, DT	Misty Mountain Sierra Geog, Sci, Art -research, images, presentation -GPS -video/animation of water cycle	Playlist Music, Sci -sound recording	Traders and Raiders Hist, Geog, Sci -Images, research, presentation -animation?	Blue Abyss Art, Sci -programming a submarine - scratch -video about the Great Barrier Reef -Web search/images -look at GPS data of sea creatures -powerpoint presentations	Burps, bottoms and bile Sci, DT -digital drawing and manipulating images -flow diagram (algorithm) of digestion process -record a video about the digestive system	Road Trip USA Geog, Sci -Spreadsheet / database about NY -digital maps -beebots -research -holiday budget spreadsheet -presentations -scratch aeroplane flight	1066 Hist, Art -checking information found online -digital maps -research -presentations	Potions DT, Sci
	NCCE Y4 unit 3: Programming A - repetition in shapes Logo is a text-based program that we can use in order to create shapes and patterns. We use algorithms (a set of instructions to perform a task) which we can plan, model and test, to create accurate	NCCE Y4 unit 2: Creating media - audio production The process of recording and listening to sound requires input devices (e.g. microphone) and output devices (e.g. a speaker). Podcasts are a type of spoken word audio file, that can be downloaded by listeners. People can have ownership over audio files. CREATIVITY		NCCE Y4 unit 4: Data & Information - data logging Data loggers and logging software can be used to automatically capture data. We can then use the data to answer research questions. Data loggers have sensors built into them to detect and record data e.g.	NCCE Y4 unit 5: Creating media - photo editing There are lots of different ways to edit photographs for example cropping, rotating, flipping and changing colours and styles. We should edit photos for positive reasons (e.g. to highlight important things or avoid embarrassment) not for negative reasons (e.g. to try to deceive people or spread false news). CREATIVITY		NCCE Y4 unit 6: Programming B - repetition in games In scratch we can use repeat and loop operator blocks in order to make our programs more logical and efficient. Loop and operator blocks help to run code continuously or for a set number of times.	NCCE Y4 unit 1: Computer Systems & Networks - the internet The internet is a network of networks that is used around the world. The world wide web is a system on the internet that has websites and webpages. Not all information on the internet is accurate. CHANGE	



	and imaginative shapes and patterns. PROCESSES		heat sensor, light sensor, sound sensor. PROCESSES		PROCESSES	
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	<u>Autumn 1</u>	<u>Autumn 2</u>		<u>Spring 1</u>	<u>Spring 2</u>		<u>Summer 1</u>	<u>Summer 2</u>	
Y5	Pharaohs Hist, DT -research	Stargazers Sci, Music -beebots -scratch	Alchemy Island Music, Hist -digital photos - Create music - Garageband / Audacity -coding / scratch	Peasants, Princes and Pestilence Hist, Sci, Geog -research -presentation - powerpoint	Time Traveller Art, Sci -digital photos / image manipulation, digital aging app -data, line graph	Scream Machine DT, Sci -image manipulation/ green screen -drawing programme to create maps -posters - adverts -spreadsheets -precise search for images -coding / scratch	Allotment Geog, Sci, Art -calculate food miles -spreadsheets -research -word processing	Off with her Head Hist -data recording, spreadsheet, bar chart -presentation - powerpoint -research	Beast Creator Sci, DT -research -presentation -digital drawing -research -word processing



	<p>NCCE Y5 unit 1: Computer systems & networks – systems and searching</p> <p>Computer systems are built using a number of parts. Computer systems can communicate with other devices.</p> <p>There are many different kinds of computer systems around the world, ranging from small scale to large scale.</p> <p>CHANGE</p>	<p>NCCE Y5 unit 3: Programming A – selection in physical computing</p> <p>Microcontrollers are devices that can be programmed to control output devices that are connected to them.</p> <p>We use algorithms which we can plan, model, trial and debug in order to create accurate command sequences involving multiple output devices.</p> <p>PROCESSES</p>	<p>NCCE Y5 unit 2: Creating Media – video production</p> <p>Video means the recording, reproducing and broadcasting of visual images (often accompanied by audio).</p> <p>Many different devices can be used to record, edit and playback video and sound.</p> <p>CREATIVITY</p>	<p>NCCE Y5 unit 4: Data & Information – flat-file databases</p> <p>Databases organize data so that it can be easily added to, amended, stored and accessed.</p> <p>Computer databases can allow large amounts of data to be sorted, filtered and edited more easily.</p> <p>PROCESSES</p>	<p>NCCE Y5 unit 6: Programming B – selection in quizzes</p> <p>In scratch we can input questions using the 'ask' command blocks.</p> <p>In scratch, we can use selections and conditions in order to ensure that there are different outcomes depending upon a user's response.</p> <p>PROCESSES</p>	<p>NCCE Y5 unit 5: Creating media – introduction to vector graphics</p> <p>Vector drawings are computer graphic images that are made using 2-D shapes.</p> <p>Vector drawings use layers to create bigger and more detailed images.</p> <p>CREATIVITY</p>
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	<u>Autumn 1</u>	<u>Autumn 2</u>		<u>Spring 1</u>	<u>Spring 2</u>		<u>Summer 1</u>	<u>Summer 2</u>	
Y6	<p>Revolution Hist, Art Oliver Twist</p> <p>-photography</p>	<p>Darwin's Delights Sci, Art</p> <p>-research -animation – digital manipulation – morphing software</p>	<p>Hola Mexico Geog, Music</p> <p>-research -digital maps -specific searches</p>	<p>Frozen Kingdom Geog, Art</p> <p>-research -presentation</p>	<p>Gallery Rebels Art, Sci</p> <p>-research -presentation -create surrealist films</p>	<p>Bloodheart DT, Sci</p> <p>-research -presentation – flow diagram</p>	<p>A Child's War Music, Hist, Geog</p> <p>-research -presentation</p>	<p>Tomorrow's World Sci, DT, Hist?</p> <p>-download copyright free music -research -design a webpage - weebly -beebots -scratch</p>	<p>ID Sci, DT</p> <p>-create an avatar -digital photos -online safety</p>



<p>NCCE Y6 unit 3: Programming A – variables in games</p> <p>Variables are changeable elements of a program. Scratch is one app in which we can explore variables.</p> <p>We use algorithms which we can plan, model, trial and debug, in order to create accurate command sequences, that enable variables to be enacted in games.</p> <p>PROCESSES</p>	<p>NCCE Y6 unit 4: Data & Information – introduction to spreadsheets</p> <p>Spreadsheets organize and store data in meaningful ways so that it can be easily accessed and analysed.</p> <p>Computer spreadsheets are particularly useful for powerful calculations, graphs and charts.</p> <p>PROCESSES</p>	<p>NCCE Y6 unit 6: Programming B – sensing movement</p> <p>Micro:Bits are small computers that perform different actions based on programs written on computer software and then downloaded to the micro:bit.</p> <p>Micro:bits have a range of input sensors that can be used as input triggers for different codes to run. Output devices on Micro:bits can be programmed to display words, pictures and numbers.</p> <p>PROCESSES</p>	<p>NCCE Y6 unit 1: Computing systems & networks – communication & collaboration</p> <p>The World Wide Web is the part of the internet where we can visit websites and webpages. We can find information using search engines.</p> <p>The internet is also a useful communication tool – with a number of different communication mediums for a range of different purposes.</p> <p>CHANGE</p>	<p>NCCE Y6 unit 5: Creating media – 3D modelling</p> <p>3D modelling involves using computer software to create 3D shapes, in order to produce models of real-world objects.</p> <p>3D modelling allows us to view designs from different angles and experiment with designs. 3D modelling is used in many industries.</p> <p>CREATIVITY</p>	<p>NCCE Y6 unit 2: Creating Media – web page creation</p> <p>A webpage is a hypertext document that is part of the World Wide Web. Websites are a collection of webpages about the same topic. They can be found using browsers.</p> <p>Websites are created for a chosen purpose, and with a particular audience in mind. They include navigation paths, and must adhere to copyright and fair use of media rules.</p> <p>CREATIVITY</p>
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