GLORY FARM PRIMARY SCHOOL Computing - LONG TERM PLAN

	All Year Groups, throughout the year- E-Safety Coverage , in line and accordance with the RSE (2021) and KCSIE (2020) policies evidence of teaching the following: Safer internet day – Tuesday 7th February 2022					
E-Safety Whole School	- Online relationships - Online bullying - Online reputation - Managing online information - Privacy and security - Copyright and ownership - Health, wellbeing and lifestyle					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	I wonder where we belong?	I wonder how it works?	I wonder where they live?	I wonder how it is made?	I wonder what is out there?	I wonder how things change?
Nursery	I spy technology! **Resources:** A range of technology for role play Key skills: - To talk about and use 'make believe' technology in play (e.g. phone, camera, microwave, computer, iron etc.)	Creating media **Resources:** chromebook Key skills: I can use my finger to draw a picture on a digital paint program. Topic links: - Firework paintings	Programming **Resources:** codeapillars Key skills: - I can follow a simple 1 step instruction - I can explore how something moves - I can ask a question - I recognise arrows as directions - To use and operate simple technological devices in everyday life		Key skills: - To move objects on a screen by using and developing mouse skills - I can name and use a keyboard and mouse with developing control. Cross curricular: Incorporate skills of using the mouse in other areas of the curriculum. E.g plug a mouse into the class teacher's laptop and individuals chosen to come up and have a go at a game on the board. E.g. phonics / number game	

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

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	I wonder what is special?	I wonder how it feels?	I wonder what is outside?	I wonder what moves?	I wonder how things grow?	I wonder what is out of this world?
Reception	What is technology? - What is communication / how can we communicate? - Identify different types of technology Key skills: - I can recognise some technology that is used in homes and schools. - Exploring tech. in our classroom - (does it need to be plugged in or does it use batteries? How does it work? How can I turn things on and off?)	How can we safely use technology? **Key skills:** - I can name devices you can access the internet on - I know what is meant by trusted adults - I can tell you who my trusted adults are - I know how the internet be used to communicate - I can tell you 1 way to keep safe online. Topic / cross curricular links: - Link to PSHE feelings	Introduction to programming Resources: twister mat and cards, codeapillars and cards, codeapillar app - Unplugged programming activites - Developing computational thinking (Barefoot planning – Boats Ahoy!) - Developing logical reasoning - Barefoot programming resources - Programming a device - Codeapillars - Codeapillar app **Key skills:** - I am beginning to use instructional language. - I can give an instruction - I can follow an instruction - I understand the importance of giving clear instructions - I can begin to create an algorithm. - I can program a simple device - I can move in a certain way following an instruction - I am beginning to use coding language		Beginning to use a Chromebook and creating media Resources: chromebooks, log ins to copy from, https://canvas.apps.chrome/ - I know what is meant by trusted adults - I can tell you who my trusted adults are - I can turn on a device - I can logging on/off - I can begin to use the trackpad - I can paint pictures using apps - I can name work - I can select and use programs for a specific purpose - I can use technology to show learning – pictures, video, text and sound https://www.j2e.com/jit5#paint - I can listen to / create sounds / music **Topic links:** Class create their own book using 'book creator', Children paint and label a picture of a flower or their own space scene	

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Dinosaurs	Happily ever after	Great Britain	Where should Paddington Bear Live?	How does your garden grow?	All Abroad!

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Year 1	Data Handling Resources: Hoops, various objects / shapes to sort / group (ideally dinosaurs for topic link) Key vocabulary: Groups, label, properties Key skills: - I can label and count objects - I can describe objects in different ways - I can count objects with the same properties - I can compare groups of objects - I can answer questions about groups of objects	Creating media: Digital painting (Art cross-curricular unit) Resources: See NCCE unit of work for ideas, chromebooks Key vocabulary: Trackpad, save, open, file, tools Key skills: - I can switch / log on / off a chromebook - I can control a trackpad - I can save and open files - I can use paint tools to create shapes and lines - I can carefully select tools for	Creating media: Digital writing Resources: chromebooks, google docs Key vocabulary: Trackpad, save, open, file, tools, font, keyboard, symbols, backspace, enter, shift, caps lock, delete, insert. Key skills: - I can switch on / off a chromebook - I can switch on / off a chromebook - I can log on / off - I can name, save and open files - I can control a trackpad - I can use a keyboard for typing letters,	Technology around us and creating media continued Resources: Variety of different objects with computers in them to explore Key skills: - I know and can name parts of a computer (and a range of everyday items that have a computer in them) - I can switch on / off a chromebook - I can log on / off - I can save and open files - I can control a trackpad	Programming: Moving a robot Focus on unplugged programming, barefoot crazy characters lesson before then programming a device – Beebots Guided 'Tinkering' opportunities Resources: rubber floor mats, instruction cards, Beebots, beebot mats & cards, NCCE resources Key vocabulary: algorithm, program, code	Intro. to animation Resources: Scratch JR Key vocabulary: algorithm, program, code, commands, sprite, block, stage, backdrop, value Key skills: - I can choose a command for a given purpose - I can use commands to move a sprite - I can use more than one block by joining them together

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	Topic / cross curricular links: Group objects linked to the theme of dinosaurs e.g. with horns, long neck, colour, size etc. Or Science – linked to carnivores, herbivores and omnivores.	an intended outcome - I can contrast digital and manual creation activities - I can use information technology with purpose Topic / cross curricular links: Learning about the artists (See unit on NCCE for planning & guidance) use taught skills to paint a modelled Christmas themed image to print for a card at the end of unit– e.g. a snowman using the skills of shapes & fill. Challenge to include text with the image.	numbers, symbols, backspace, enter, shift, caps lock, arrows and delete. - I can insert an image Topic / cross curricular links: (English / Geography link) typing up facts about Great Britain – creating a poster about one of the 4 countries in the UK Caption writing / labelling images, opportunities to practice typing skills.	- I can use a keyboard for typing letters, numbers, symbols, backspace, enter, shift, caps lock, arrows and delete. - I can name and save my work See NCCE unit to support with technology around us understanding and delivery. Topic / cross curricular links: Using chromebooks to publish work completed in English, letter / postcard writing from Paddington bear to his family (template can be given and used by pupils)	Key skills: - I can given an example of an algorithm. - I can create and follow a simple algorithm - I can implement an algorithm as a program - I can create a program from an algorithm that uses a sequence construct. Topic / cross curricular links: Beebot mats to be garden themed, could move the beebot in order of the process of planting a seed.	- .I can run my program - I can say what happens when I change a value on a block - I can show that a project can include more than one sprite - I can choose appropriate artwork for my project - I can add programming blocks based on my algorithm for each sprite - I can test the programs I have created Topic links: Using scratch jr to show transport moving

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Who are we?	Carnival of the Animals	London's Burning	Once upon a time…	Adventurers!	Down at the bottom of the garden
Year 2	Creating media: Digital photography Resources: Chromebooks, book creator app www.bookcreator.com or Google slides Key vocabulary: photograph, image, editing, lighting, exposure, resize, capture, orientation, landscape, portrait, adjust, effect Key Skills - I can use a digital device to take a photograph - I can describe what makes a good photograph & how to improve them - I can use tools to change an image - I can import an image - I can carefully select tools for an intended outcome Cross curricular links to	Creating media: making music Resources: https://musiclab.chrome experiments.com/ Key vocabulary: patterns, composition, compose, pitch, notes, duration, sequence Key skills: - I can identify that there are patterns in music - I can connect images with sounds - I can use a computer to experiment with pitch and duration - I can show how music is made from a series of notes - I can identify that music is a sequence of notes - I can use a computer to create a musical	Programming: Debugging beebots Resources: Beebots, beebot mats, programming cards, pen holders for beebots Key vocabulary: debug, algorithm, program, code Key skills: - I can create and follow a precise algorithm - I can implement an algorithm as a program - I can create a program from an algorithm that uses a sequence construct.	Programming: Scratch JR Resources: Scratch JR Key vocabulary: debug, algorithm, program, code, block, sequence, input, output, device Understand what algorithms are Understand that an algorithm are precise step by step set of instructions to do something Understand that algorithms and programs are different Understand the programming construct of sequence	Computing networks: information technology Resources: See NCCE planning unit to support Key skills: - I can identify examples of computers and describe some uses of computers. - I can explain the purpose of information technology in the home - I can compare types of information Technology - I know how to and can recognise how to use information technology safely	Pictograms Resources: https://www.j2e.com/jit5#pictogram Key skills: - I recognise that we can count and compare objects using tally charts - I recognise that objects can be represented as pictures - I can create a pictogram - I can select objects by attribute and make comparisons - I recognise that people can be described by attributes - I can explain that we can present information using a computer Cross curricular to topic: Get outside and record

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	<u>topic:</u> Children use book creator to create a book about themselves. They will need to take a photo of themselves, edit this as they wish (e.g. colours / lighting) insert the image into book creator and use text or audio recording to add information about themselves.	pattern using three notes - I can refine my musical pattern on a computer - I can review and refine my computer work - I can reopen my work <u>Cross curricular links to topic:</u> - Music to link to topic (animal themed) - Create a Christmas themed jingle				how many bugs you find under a log / slab etc.

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			- I can find and fix errors in an algorithm and a program. - I can create a program that uses sequence - I can predict the outcome of a simple program <u>Cross curricular links to topic:</u> Beebot mats to be themed to any subject link e.g. - Maths could be given sums and asked to move the beebot to the number that is the answer on the mat - Move the beebot to spell the words correctly (phonics) - Or London themed	Understand the term debug and how to do simple debugging Understand input Understand that algorithms are implemented as programs on digital devices Understand that programs execute by following precise and unambiguous instructions Use logical reasoning to predict the outcome of a program. E.g. Where will the programmable toy or on-screen sprite end up. <u>Cross curricular links to topic:</u> Using scratch jr, link to the topic of fairytales – changing spirte / background accordingly		

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Where in the World?	The Stone Age Rocks!	Roaming in the Rainforest	Roaming in the Rainforest	Tomb Raiders!	Tomb Raiders!

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Year 3	Computing systems & networks – connecting computers Resources: NCCE planning and slides to support Key vocabulary: Key skills: - I can explain how digital devices function - I can classify input and output devices - I can describe a simple process - I can recognise similarities between using digital devices and using non-digital tools - I can recognise similarties / differences between using digital	Creating media: Animation Resources: Chromebooks, stop motion animator (chrome ext. app), cloud stop motion, a range of animated clip examples, plasticine Key vocabulary: animation, onion skinning, frames, capture, stop-motion animation Key skills: - I can capture and store digital content.	Data and information – branching databases Resources: https://www.j2e.com/jit 5#branch Key vocabulary: database, branching database, closed questions, pictogram Key skills: - I can create questions with yes / no answers - I can identify the object attributes needed to collect relevant data - I can create a branching database - I can explain why it	Creating media - Desktop publishing Resources: https://spark.adobe.com/sp/ - use the newspaper templates available Key vocabulary: Orientation, placeholders, template, text, font, size, image Key skills: - I can make use of the main formatting tools e.g. cut, copy, paste and text formatting - I can recognise how text and images convey information	Programming – Introduction to scratch Resources: Scratch, scratch workbook resources if required, relevant worksheets linked to scratch unit from NCCE planning. Key skills: - I can read and understand simple programs - I can create a program from an algorithm - I know and understand how to debug algorithms and programs. - I can match algorithm to code and the reverse of that. - I can design and create an algorithm to accomplish a specific goal. - I can use different input and output devices - I can find and fix bugs in my algorithm and code - I can create a program that uses the construct of repetition. - I understand decomposition. - I understand sequence and repetition programming constructs. - I understand that algorithms are implemented as code and must be precise.

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	devices and using non digital tools - To explain how a computer network can be used to share info. - I can recognise different connections - I can recognise that a computer network is made up of a number of devices - I can demonstrate how information can be passed between devices - I can explain the role of a switch, server, and wireless access point in a network - To recognise the physical components of a network	- I understand that an animation is a sequence of drawings or photographs - I can create an effective flip book—style animation - I can explain why little changes are needed for each frame - I can create an effective stop frame animation - I can use onion skinning to help me make small changes between frames <u>Cross curricular inks to topic:</u> Stone age themed animation (hook with clips from Early man by Aardman / Croods)	is helpful for a database to be well structured - I can identify objects using a branching database - I can compare the information shown in a pictogram with a branching database <u>Cross curricular links to topic:</u> Create a branching database linked to animal types e.g amphibians, mammals etc., looking at leaf / plant types	- I can recognise that text and layout can be edited - I can choose appropriate page settings - I can add content to a publishing publication - I can consider how different layouts can suit different purposes <u>Cross curricular links to topic:</u> English - The children could create newspaper reports linked to a text e.g. Buddy's Rainforest adventure, or a report on how the rainforests need protecting / why they are being destroyed.	<u>Cross curricular links to topic:</u> - Create an Egyptian themed animation - Using Spanish knowledge to create an animation between 2 sprites speaking in Spanish (basic conversation)	

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

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	Let me Entertain You!	Who Were the Mayans?	What did the Romans do for us?	What did the Romans do for us? / Water, Water, Everywhere!	Dreaming Spires Inspires!
Year 4 2022- Autumn and Spring have swapped around	Computing systems and networks – The internet Resources: See NCCE Unit for resources to support with this, see also E safety resources linked to Fake news Key Skills - I can describe how networks physically connect to other networks. - I recognise how networked devices make up the internet	Data and information – Data logging (linked to Science topic of sound) Resources: Data loggers or Google ardurino science app Key vocabulary: data, data logging, sensor, sensing Key Skills - I can explain that data gathered over time can be used to answer questions - I can use a digital device to collect data automatically	Creating media – Audio editing- Create a podcast Resources: Program tbc… Key vocabulary: input device, output device, audio, fade, podcast, copyright, ownership Key skills - I can capture and store digital content using devices including sound - I can use the main formatting tools - I can identify that sound can be digitally recorded	Programming – using Ozobots Resources: Ozobots, Pens for ozobots, plain paper Key skills: - Building on skills from Y1/2/3 - I understand decomposition - I understand sequence and repetition programming constructs - I know and understand that algorithms are implemented as code and must be precise. - I can understand input and output - I know the processes involved in creating algorithms and then implemented as a program. - I can explain how to debug algorithms and programs.	Creating media: Photo editing Resources: Chromebooks, Lunapic photo editor, https://www4.lunapic.com/ Key vocabulary: photograph, image, editing, lighting, exposure, resize, capture, orientation, landscape, portrait, adjust, effect Key Skills - I can identify changes that we can make to an image - I can explore how images can be changed in real life - I can change the composition of an image by selecting parts of it - I can choose effects to make my image fit a scenario - I can identify how an image has been retouched

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	- To outline how websites can be shared via the World Wide Web - I can describe how content can be added and accessed on the World Wide Web - I recognise how the content of the WWW is created by people - I can evaluate the consequences of unreliable content <u>Cross curricular / topic links:</u> Using the internet to research facts about the Mayans.	- I can explain that a data logger collects 'data points' from sensors over time - I can use data collected over a long duration t o find information - I can identify the data needed to answer questions - I can use collected data to answer questions <u>Cross curricular / topic links:</u> Link to Science topic, e.g. logging data linked to sound, temperature change etc. (See NCCE unit for planning ideas and suggestions)	- I can use a digital device to record sound - I can explain that a digital recording is stored as a file - I can explain that audio can be changed through editing - I can show that different types of audio can be combined and played together e.g. cut, copy, paste <u>Cross curricular / topic links:</u> - English unit – writing a podcast and then performing – role play in character being interviewed for the podcast		- I can give examples of positive and negative effects that retouching can have on an image - I can choose appropriate tools to retouch an image - I recognise that not all images are real - I can sort images into 'fake' or 'real' and explain my choices - I can combine parts of images to create new images - I can talk about fake images around me - I can consider the effect of adding other elements to my work - I can compare the original image with my completed publication - I can evaluate the impact of my publication on others through feedback <u>Cross curricular / topic links:</u> - English link, Alice in wonderland freeze frames, changing background etc. - Photography in Oxford (trip?) - My local area photographs

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Peaks and Summits	Peaks and Summits	Whose land is it anyway? (Anglo Saxons)	Vicious Vikings	Does your Country Need You?	Does your Country Need You?

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Year 5	Creating media – Vector drawing Resources: Google drawings app/ extension on Chrome Key skills: - I can identify the shapes that are used to make vector drawings. - I can explain that each element of a vector drawing is called an object. - I will create my own vector drawing by moving, resizing, rotating, and changing the colours	Data and information – flat file databases Key skills: - To use a form to create information. - I can create multiple questions about the same field - I can explain how information can be recorded - I can order, sort, and group my data cards - I can identify the object attributes needed to collect relevant data	Computing Networks Key Skills: - To explain that computers can be connected together to form systems - I can describe that a computer system features inputs, processes, and outputs - I can explain that computer systems communicate with other devices - I can identify tasks that are managed by computer systems - I can recognise	Creating media – Video editing Resources: Wevideo (tbc), green screen materials, chromebooks any additional props / resources Key skills: - I can explain what makes a video effective - I can identify features of videos - I can use a digital device to record video - I can identify and find features on a digital video recording device - I can experiment with different camera angles - I can make use of a microphone	Programming – using Crumble Resources: Crumble controllers class kit (battery packs, crocodile clips, bulbs, sensors, lights and a range of D&T Equipment e.g. cardboard etc. Key skills: - I can design and create an algorithm that can accomplish specific goals - I can implement an algorithm as code - I can work out an algorithm from code - I can evaluate different algorithms - I can convert existing alogirthm from pseudocode into code - I can solve problems by decomposing them into smaller parts - I can create a program that uses sequence, repetition and selection

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	of a selection of objects. - I can duplicate the objects to save time. - To use tools to achieve a desired effect - To recognise that vector drawings consist of layers. - To group objects to make them easier to work with - To evaluate my vector drawing **Topic links:** Art – digital	- I can create a branching database - I can explain why it is helpful for a database to be well structured - I can identify objects using a branching database **Topic links:** Geography link – recording key facts on Mountains e.g. height etc.	how information is transferred (in packets) over the internet - I can explain that networked digital devices have unique addresses - I can recognise that connected digital devices can allow us to access shared files stored online - To contribute to a shared project online & identify different ways of working together online - I can recognise that working together on the internet can be public or private - I can explain how the internet enables effective collaboration	- I can review how effective my video is - I can create a storyboard - I can decide which filming techniques I will use - I can create and save video content - I can store, retrieve, and export my recording to a computer - I can explain how to improve a video by reshooting and editing - I can select the correct tools to make edits to my video - I can evaluate my video & share my opinions **Topic links:** - Viking vlogs! – A day in the life of a Viking (linked to class text also)	- I can create a program which uses procedures and variables - I can use operators within my program - I can use logical reasoning to detect and correct errors in programs **Topic links:** Linked with DT skills, moving tanks / planes

	Autumn 1	Autumn 2	Spring 1	Spring 2		Summer 1	
	Climate Heroes	Powerful Earth	All's Quiet on the Western Front	Evolution	Ancient Greece	Travel and Trade	

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Year 6	Data information: Introduction to spreadsheets Resources: Google slides Key skills: - I can identify questions which can be answered using data - I can explain that objects can be described using data - I can explain that formulas can be used to produce calculated data - I can apply formulas to data, including duplicating - I can create a spreadsheet to plan an event - I can choose suitable ways to present data Cross curricular / topic links: - Work in teams to plan a 'fair trade' or Summer fete event / stall at school (could link with PTA) each child could be given a 'budget' and need to use their spreadsheet to record how this could be spent and then calculate any profits made etc. - Plan a trip / end of term party.	Computing systems and networks: Communication Resources: see NCCE planning to support Key skills: - I can identify how to use a search engine - I can describe how search engines select results - I can explain how search results are ranked - I can recognise why the order of results is	Creating media: 3D modelling Resources: see NCCE planning to support https://www.tinkercad.com Key skills: - I can use a computer to create and manipulate three-dimensional (3D) digital objects - I can discuss the similarities and differences between 2D and 3D shapes & explain why we might represent 3D objects on a computer - I can select, move, & delete a digital 3D shape - I can compare working digitally with 2D/3D graphics - I can identify how graphical	Programming – using microbit Resources: micro:bit, https://microbit.org/ Key skills: - I understand and can apply the three main programming constructs, sequence, repetition and selection. - I understand and can procedures and variables - I understand abstraction - I understand decomposition - Understand input, process and output - Understand that pseudocode is the description of an algorithm written in informal language - Understand that programs can be "chunked" using procedures	Creating media: Website Design Resources: see NCCE planning to support Key skills: - I can review an existing website & consider its structure - I can discuss the different types of media used on websites - I know that websites are written in HTML - I can recognise the common features of a web page - I can draw a web page layout that suits my purpose - I know and consider the ownership and use of images (copyright) - I can find and say why I should use copyright-free images - I can describe what is meant by the term 'fair use' - I recognise the need to preview pages - I can add content, preview and evaluate my own web page - I can evaluate what my web page looks like on different devices & suggest/make edits.

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		important, and to whom - I recognise how we communicate using technology - I can evaluate different methods of online communication	objects can be modified - I can resize, change the colour, rotate a 3D object - I can construct a digital 3D model of a physical object - I can select & duplicate multiple 3D objects - I can identify that physical objects can be broken down into a collection of 3D shapes - I can identify the 3D shapes needed to create a model of a real-world object - I can create digital 3D objects of an appropriate size - I can group a digital 3D shape and a placeholder to create a hole in an object - I can design a digital model by combining 3D objects - I can develop and improve& evaluate a digital 3D model	and that this is a form of abstraction. - Understand that variables can be used to store data of different types. E.g. The score within a game usually consists of name and value. - Understand how to use boolean and arithmetic operators	- I can explain what a navigation path is & why they are useful - I can make multiple web pages and link them using hyperlinks - I can recognise and explain the implications of linking to content owned by other people - I can evaluate the user experience of a website