Gwladys Street C P and N School Long Term Plan - Computing

	Autumn		Spring		Summer	
Year 1	**Toys**		**Poles Apart**		**Flight**	
	iModel Basic computer skills. Explore how computer models work and represent real or imaginary environments.	**iWrite** Create and process text and use basic formatting. Inset an image Print text. Save and retrieve work.	**iAlgorithm** Working away from the computer, understand what a basic algorithm is. Follow basic (unplugged) algorithms and construct their own.	**iProgram Bluebots** Program physical robots (beebots) to perform specific actions and follow a sequence of instructions. Begin to predict what will happen for a short sequence of instructions.	**iData** Collect data using technology. Sort and organise data. Represent data in pictograms and talk about their findings.	**iMedia** Produce a range of digital media. Take photographs using iPads. Create talking pictures and record sound.
Year 2	**London's Burning**		**Indian Spice**		**Pioneers**	
	What is a computer? Identify a computer's different parts and talking about the role computers play in our society. **Modifying Text & Images** Expand on previous skills such as using a keyboard, formatting text and how to use images in their work. **Search & Publish** Find and navigate around a website. Use information on a website to answer questions Collect information from a number of different websites. Research and create a class e-book on The Great Fire of London.		**Unplugged algorithms** Explore what algorithms are. Explore what strategies can be used to find bugs when their algorithm is not working. Program a robot (bluebot) to do a particular task (controlling using iPad).	**Scratch Junior** Design and make an animation using simple block code. Look at a basic program and explain what will happen. Use programming software and applications to make objects move.	**Bluebots** Program a robot (bluebot) to do a particular task (*controlling using iPad*).	**iPresent** Know how to report inappropriate content or contact online. Use a variety of software to manipulate and present digital content in different ways with increasing independence (*Pic Collage, Shadow Puppet EDU*).

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Year 3	Meet the Flintstones/Tomb Raiders		Journey through Europe		Extreme survival	
	How things work including Networks To identify components within a PC/ Laptop and what each component does. To understand the basic fundamentals of how a network works.	**iProgram** To program an animation that executes a sequence of statements To understand that computer programs containing graphics use x y coordinates and turns are measured in degrees. To program a sequence of instructions that create visual effects. To import, create and record sounds. To understand that algorithms and programs can involve repetition. To predict the outcome of a simple algorithm To combine images, sounds and movement to create a personal animation.	**iData** Learn how to organise data in a database. Use a prepared database to find information about a holiday Add records to a database using information found online.	**Microbits** Program abstracted images on the microbit LED display to make digital flashcards. Improve programs by introducing delays and spotting patterns. Use sensors in algorithms. Debug, evaluate and apply information technology. .	**iAnimate** Design and create computer animations. Create storyboards. Combine narrative with digital artwork. Produce an online safety animation.	**iConnect** Know the difference between the Internet and the World Wide Web. Use URLs in web browsers. Question the Cross check information with another website. Online safety.

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Year 4	Roman Rule		World's Kitchen		Crime and Punishment	
	iData To sort record cards using field names. To understand that information can be stored as numbers, text and choices (e.g. yes/no). To understand that storing information in an organised way helps answer questions. To search a database to answer questions. To use the information in a database to create a simple chart.	**iProgram (Repetition & Forever Loops)** To understand that a program is a sequence of statements written in a programming language. To program a sequence of statements. To program an object to move and draw. To understand that commands and actions can be programmed to be executed depending upon whether a condition is true or not. To combine repetition and conditional statements in a program.	**Sphero Robotics** Control a robot by using an app to make it move. Control a robot with accuracy. To program a sequence of instructions that are repeated. To design an algorithm, write a computer program, test and debug. To plan and program precise movements and colour changes.	**iMovie** Use photos, video and sound to create an atmosphere when presenting to different audiences. Change the appearance of text to increase its effectiveness. Create, modify and present documents for a particular purpose and audience.	**iMail** To understand that messages can be used to communicate over distance a number of ways. To understand how email travels and how to retrieve it. To send and reply to emails. To attach a file to an email. To understand the advantages of attaching files to emails. To use email to communicate ideas.	**(STEAM activity) Microbits** To build electrical circuits and test materials. Explore selection and flowchart algorithms. Tinkering with inputs on the microbit. Electrical conductivity testing with the microbit Review and evaluate results.
Year 5	Mexico and the Mayans		Wild Rivers		Invaders	
	iData (Using Spreadsheets) To understand that spreadsheets can be used to store	**Sphero Robotics** Use sequence, selection and repetition in programs that make	**iCrypto** To understand that messages can be sent and received secretly.	**iProgram (Kodu)** Write and amend more complex computer	**3D Modelling** Use different online tools for different	**Vex Robotics (if / else and loops)**.

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	numerical data and to make calculations. To enter a formula to calculate totals. To understand that graphs and charts can be created and easily be changed from spreadsheet data. To understand the SUM function can be used to create formulas that will perform addition calculations. To use a spreadsheet to model a costing exercise.	Sphero move according to plan. Solve 'problems' by splitting them down into smaller parts (decomposition). Write and amend programs to create a variety of outcomes. Test computer programs and correct most errors.	To encrypt/decrypt simple messages. To understand that messages can be sent electronically over distances. To understand that data can be transmitted as binary (on or off). Understand the algorithm of a simple shift cipher. To understand the importance of cryptography historically and today	programs to create a variety of outcomes. Use iteration (repeats and loops), and conditional statements (e.g. when do) in computer programs. Introduced to variables and how to use them to control outcomes. Test and debug computer programs.	purposes. Be able to use a variety of familiar and unfamiliar software by using a pre-existing skill set. Select, use and combine the appropriate technology tools to create effects in media.	Identify how *if-then* and *if-then-else* blocks affect program flow. Identify types of User Interfaces (UIs). Program the Clawbot with a three-button interface (up arrow, down arrow, and check) in order to pick up items from a table. Test, debug and amend programs to solve a problem.
Year 6	**Greece Lightning**		**Disaster**		**Rule Britannia**	
	Introduction to Google classroom / Showbie **iApp** To use development tools to create an app. To understand that procedures are a sequence of statements that can	**iProgram** To program a computer game by sequencing conditional statements. To use variables in programs. To use procedures in programs. To understand that the behaviour of a	**Music & Podcast** Understand how to import and edit audio. To compose music by layering tracks. To make an audio recording. To edit and improve their podcast. To publish, share and evaluate each other's podcast.	**(STEAM PROJECT)** **Vex Robotics** Making the best tower to survive an earthquake.	**iNetwork & HTML** Understand what a computer network is. Understand that the internet is many networks that are connected to each other. Understand the role of a router. Understand the	**Programming with Crumbles (STEAM link to DT)** Consolidate and extend previous programming skills. Create a program that uses motors,

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	be called repeatedly using only one command. To plan and create an app involving variables and procedures. To develop strategies for testing and debugging computer program.	computer program should be planned. To understand that programs are developed according to a plan. To develop strategies for testing and debugging computer programs.			difference between the internet and the World Wide Web. Recognise and use basic HTML syntax.	and levers to solve a problem.

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