Catton Grove Primary School Computing Long Term Plan

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn		**Add in barefoot computing?**	**Unit Title:** IT Around Us	**Unit Title:** Technology Around Us	**Unit Title:** Connecting computers	**Unit Title:** The internet	**Unit Title:** Fact file databases	**Unit Title:** Data and spreadsheets
			Enquiry Question: How quick does technology develop?	**Enquiry Question:** What is the most important part of a computer?	**Enquiry Question:** Are computers always online to be connected?	**Enquiry Question:** How much information shared on the internet is true?	**Enquiry Question:** How can data be organised using fact-file data basis?	**Enquiry Question:** How can spread sheets be used to support with data?
			Concepts: Networks Computing systems	**Concepts:** Computing systems Algorithms	**Concepts:** Networks Computing systems	**Concepts:** Networks Safety and security	**Concepts:** Effective use of tools Data and information	**Concepts:** Effective use of tools: organising data
			Misconceptions: All technology is expensive and time consuming.	**Misconceptions:** Technology is difficult to use.	**Misconceptions:** Computers need to be connected via wires.	**Misconceptions:** All information online is true.	**Misconceptions:** Data and information is the same thing. Fact-file database is just a simple list of table of data.	**Misconceptions:** x is used to multiply on spreadsheets.

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			Powerful Knowledge: Information technology is a computer or something that has been designed to work with computers. Technology is rapidly developing and can fit into many different categories.	**Powerful Knowledge:** Technology is something that has been made with a specific purpose to help other people.	**Powerful Knowledge:** Technology can be both non-digital and digital devices. Computers can be connected to one another and this is known as a network.	**Powerful Knowledge:** Data is routed around the internet. The world wide web is one of many services provided over the internet. False and inaccurate information can be shared over the internet.	**Powerful Knowledge:** A database if composed of 'records', which are sets of data on a particular object.	**Powerful Knowledge:** Organising data is an important part of data and information. It supports the use of calculations and provides the opportunity to use sorting and filtering, which enables ease of use and reduces human error.
			Key Vocab: information technology. computer, barcode, scanner	**Key Vocab:** computer, mouse, trackpad, keyboard, screen, double click, typing	**Key Vocab:** input, process, output, connection, network, server, wireless	**Key Vocab:** internet, network, router, network security, server, wireless, website, world wide web, ownership, permission	**Key Vocab:** databases, fields, records, grouping, sorting	**Key Vocab:** formatting, formula, calculate, duplicate, software
			Cultural Capital:	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**
			Pedagogical Content Knowledge (PCK): Culturally relevant pedagogy	**Pedagogical Content Knowledge (PCK):** Culturally relevant pedagogy	**Pedagogical Content Knowledge (PCK):** Semantic waves	**Pedagogical Content Knowledge (PCK):** Peer instruction	**Pedagogical Content Knowledge (PCK):** Peer instruction	**Pedagogical Content Knowledge (PCK):** Peer instruction

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Spring			**Unit Title:** Moving a robot	**Unit Title:** Digital photography	**Unit Title:** Sequencing sounds	**Unit Title:** Repetition in shapes	**Unit Title:** Microbits	**Unit Title:** Communication and collaboration
			Enquiry Question: Is there a 'best' way to move the robot?	**Enquiry Question:** How can devices be used for photography?	**Enquiry Question:** What could I create using Scratch?	**Enquiry Question:** Why use repetition when coding?	**Enquiry Question:** How can a computer solve real-life problems?	**Enquiry Question:** Why is data shared over the internet?
			Concepts: Programming Algorithms	**Concepts:** Effective use of tools Design and development	**Concepts:** Effective use of tools Creating media	**Concepts:** Programming Algorithms	**Concepts:** Programming Computer systems	**Concepts:** Computer systems Data and information
			Misconceptions: A Beebot does not need to be programmed to do what I want it to do.	**Misconceptions:** Photographs represent what can be seen.	**Misconceptions:** Projects can run without an event command. Algorithms and programs are the same thing.	**Misconceptions:** Repetition is just about making things faster or easier.	**Misconceptions:** You can edit or reuse code directly onto a microbit.	**Misconceptions:** To work collaboratively over the internet, you need to be physically close.
			Powerful Knowledge: Algorithms are a set of clear, precise and ordered instructions which we use computers to implement.	**Powerful Knowledge:** Digital devices can be used to take, edit, altar and save photographs.	**Powerful Knowledge:** The order of a sequence is important when programming.	**Powerful Knowledge:** Repeating commands and actions is known as a loop. Loops can be set for a set number of times, these are called	**Powerful Knowledge:** Real world objects can be programmed and controlled using commands.	**Powerful Knowledge:** The internet facilitates online communication and collaboration. Something should not be

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			Understanding and reading code enables us to predict what will happen. There are four levels to describe a coding project, this is known as abstraction.			‘count-controlled loops’.		shared on the internet.
			Key Vocab: commands, instructions, directions, algorithm, program, route	**Key Vocab:** light, focus, portrait, landscape, capture, image	**Key Vocab:** programming, command, motion, sequence, code, debug	**Key Vocab:** programming, commands, algorithm, design, debug, pattern, value, count-controlled, decomposed, procedure	**Key Vocab:** components, output, repetition, input, selection,debug	**Key Vocab:** internet protocol addresses, domain name server, data packets
			Cultural Capital:	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital: Here?**
			Pedagogical Content Knowledge (PCK): Pair programming	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**
Summer			**Unit Title:** Programming animations	**Unit Title:** Pictograms	**Unit Title:** Events and Actions	**Unit Title:** Repetition in games	**Unit Title:** Selection in quizzes	**Unit Title:** Variables in games
			Enquiry Question:	**Enquiry Question:**	**Enquiry Question:**	**Enquiry Question:**	**Enquiry Question:**	**Enquiry Question:**

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			Why ae algorithms important when programming?	How can data be recorded using technology?	How can I make a project using Scratch?	How can I create a game using Scratch?	Why is it important that algorithms are accurately inputted?	How can variables be modified to create something different?
			Concepts: Programming Design and development	**Concepts:** Programming Data and information	**Concepts:** Programming Design and development	**Concepts:** Programming Design and development	**Concepts:** Algorithms Programming	**Concepts:** Algorithms Programming
			Misconceptions: A sprite can only move in the same direction a floor robot can.	**Misconceptions:** All software uses the same symbols as those used in maths lessons.	**Misconceptions:** The 'pen up' and 'erase all' blocks are the same thing.	**Misconceptions:** Repetition and loops are different things. Infinite loops are the easiest to use.	**Misconceptions:** The order of the algorithms does not impact the outcome.	**Misconceptions:** The term variables means the same when talking scientifically than it does when discussing computing.
			Powerful Knowledge: Algorithms are a set of clear, precise and ordered instructions which we use computers to implement. Understanding and reading code enables us	**Powerful Knowledge:** Tallycharts and pictograms allow data to be presented in different ways.	**Powerful Knowledge:** A sequence is made up of various which are linked. Events and actions have an impact on the outcome of a program.	**Powerful Knowledge:** Loops can be repeated indefinitely. This is known as 'infinite.	**Powerful Knowledge:** 'Conditions' are statements that need to be met for a set of actions to be carried out.	**Powerful Knowledge:** A 'variable' is defined as something that can be set and changed throughout the running of a program.

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			to predict what will happen. There are four levels to describe a coding project, this is known as abstraction.					
			Key Vocab: command, programming, compare, algorithm, predict	**Key Vocab: program, attributes, pictogram, data, organising, tally charts**	**Key Vocab:** motion, algorithm, design, event, action, debugging, error	**Key Vocab:** programming, code, loop, value, infinite loop, repetition, modify, algorithm, evaluate	**Key Vocab:** selection, condition, algorithm, program, debug, outcome, evaluate, construction	**Key Vocab:** variable, algorithm, program, values
			Cultural Capital:	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**	**Cultural Capital:**
			Pedagogical Content Knowledge (PCK):	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**	**Pedagogical Content Knowledge (PCK):**