Willington Primary School Computing Long Term Plan

	Year 1	Year 2
Autumn 1	Computing systems and networks **Improving mouse skills** (5 lessons) Learning how to login and navigate around a computer; developing mouse skills; learning how to drag, drop, click and control a cursor to create works of art	Computing systems and networks **What is a computer?** (5 lessons) Exploring what a computer is by identifying how inputs and outputs work and how computers are used in the wider world to design their own computerised invention.
Autumn 2	Programming 1 **Algorithms unplugged** (5 lessons) Algorithms, decomposition and debugging are made relatable to familiar contexts, following directions, learning why instructions need to be specific.	Programming 1 **Algorithms and debugging** (5 lessons) Developing an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops.
Spring 1	Skills showcase **Rocket to the moon** (5 lessons) Developing keyboard and mouse skills through designing, building and testing. Creating a digital list of materials, using drawing software and recording data.	Computing systems and networks **Word processing (5 lessons)** (Option 1: Google) (Option 2: Microsoft Office 365) Developing touch typing skills, learning keyboard shortcuts and simple editing tools.
Spring 2	Programming 2 **Programming Bee-Bots (5 lessons)** (Option 1: Bee-Bot) (Option 2: Virtual Bee-Bot) Introducing programming through the use of a Bee-Bot and exploring its functions.	Programming 2 **ScratchJr** (5 lessons) Exploring what 'blocks' do' by carrying out an informative cycle of predict > test > review. Programming a familiar story and make a musical instrument.
Summer 1	Creating media **Digital imagery (5 lessons)** (Option 1: Google) (Option 2: Microsoft Office 365) Taking and editing photos, searching for and adding images to a project.	Creating media **Stop Motion (5 lessons)** (Option 1: Using tablet devices), (Option 2: Devices with cameras) or (Option 3: Devices without cameras) Learning how to create simple animations from storyboarding creative ideas.
Summer 2	Data handling **Introduction to data** (5 lessons) Learning what data is and the different ways it can be represented. Learning why data is useful and the ways it can be gathered and recorded.	Data handling **International Space Station** (5 lessons) Learning how data is collected, used and displayed and the scientific learning of the conditions needed for plants and humans, to survive.
	Online safety **Online safety Y1** (4 lessons) Learning how to stay safe online and how to manage feelings and emotions when someone or something has upset us.	Online safety **Online safety Y2** (5 lessons) Learning: how to keep information safe and private online; who we should ask before sharing things online and how to give, or deny permission online.

	Year 3	Year 4
Autumn 1	Computing systems and networks	Computing systems and networks
	Networks and the internet ((5 lessons) (Option 1:Google) (Option 2: Microsoft Office 365) Learning what a network and how devices communicate and share information.	**Collaborative learning (5 lessons)** (Option 1: Google) (Option 2: Microsoft Office) Learning how to work collaboratively and exploring a range of collaborative tools.
Autumn 2	Programming	Programming 1
	Scratch (5 lessons) Exploring the programme Scratch, following the predict > test > review cycle. Learning about 'loops' and programming an animation, story and game.	**Further coding with Scratch (5 lessons)** (Option 1: Google) (Option 2: Microsoft Office 365) Revisiting the key features and beginning to use 'variables' in code scripts.
Spring 1	Computing systems and networks	Creating media
	Emailing (5 lessons) (Option 1: Google) (Option 2: Microsoft Office 365) Sending emails with attachments and lunderstanding what cyberbullying is.	**Website design (5 lessons)** (Option 1: Google) (Option 2: Microsoft Office 365) Learning how web pages and sites are created and how to embed media and links.
Spring 2	Computing systems and networks	Skills showcase
	Journey inside a computer (5 lessons) Assuming the role of computer parts and creating paper versions of computers to consolidate understanding of how a computer works.	**HTML (5 lessons)** Learning about the markup language behind a webpage; becoming familiar with HTML tags, changing HTML and CSS code to alter images and 'remix' a live website.
Summer 1	Creating media	Programming 2
	Video trailers (5 lessons) (Option 1: Using devices other than iPads) (Option 2: Using iPads) Developing digital video skills to create trailers, with special effects and transitions.	**Computational thinking (5 lessons)** Solving problems effectively using the four areas of abstraction, algorithm design, decomposition and pattern recognition.
Summer 2	Data handling	Data handling
	Comparison cards databases (5 lessons) (Option 1: Google) (Option 2: Microsoft Office 365) Learning about records, fields and data and sorting and filtering data.	**Investigating weather (5 lessons)** (Option 1: Google) (Option 2: Microsoft Office 365) Researching and storing data on spreadsheets and designing a weather station.
Online safety	Online safety	Online safety
	Online safety Y3 (4 lessons) Learning: the difference between fact, opinion and belief; and how to deal with upsetting online content. Knowing how to protect personal information online.	**Online safety Y4 (6 lessons)** Searching for information and making a judgement about the probable accuracy; recognising adverts and pop-ups; understanding that technology can be distracting.

	Year 5	Year 6
Autumn 1	Computing systems and networks	Computing systems and networks
	Search engines (5 lessons) (Option 1: Google) (Option 2: Microsoft Office 365) Learning about how page rank works and how to identify inaccurate information.	Bletchley Park (5 lessons) (Option 1: Google) (Option 2: microsoft Office 365) Discovering the history of Bletchley and learning about code breaking and password hacking. Demonstrating digital literacy skills by creating presentations.
Autumn 2	Programming 1	Programming
	Programming music (5 lessons) (Option 1: Sonic Pi) (Option 2: Scratch) Building-on programming and music skills to create different sounds, beats and melodies which are put to the test with a Battle of the Bands performance!	Intro to Python (5 lessons) Using the programming language 'Python' to create designs and art. Learning how to create loops and nested loops to make their code more efficient.
Spring 1	Data handling	Data handling
	Mars Rover 1 (5 lessons) Learning about the Mars Rover, exploring how and why it transfers data including instructions, and how messages can be sent using binary code.	Big data 1 (5 lessons) Identifying how barcodes and QR codes work. Learning how infrared waves are used for the transmission of data while recognising the uses of RFID.
Spring 2	Programming 2	Creating media
	Micro:bit (5 lessons) Creating algorithms and programs that are used in the real world. Using the 'predict, test and evaluate' cycle to create and debug programs with specific aims.	History of computers (5 lessons) (Option 1: Google) (Option 2: Microsoft Office) Writing, recording and editing radio plays set during WWII, learning about how computers have evolved.
Summer 1	Creating media	Data handling
	Stop motion animation (5 lessons) (Option 1: Stop Motion Studio) (Option 2: with cameras) Creating animations, storyboard ideas and decomposing a story into small parts before putting together to create the illusion of a moving image.	Big data 2 (5 lessons) Further developing understanding of how networks and the Internet are able to share information. Learning how big data can be used to design smart buildings.
Summer 2	Skills showcase	Skills showcase
	Mars Rover 2 (5 lessons) Exploring how the Mars rover: moves, follows instructions, collects and sends data; understanding how computers work, what data is and how it is transferred.	**Inventing a product** (Option 1: Google) (Option 2: Microsoft Office 365) (5 lessons) Designing a product, pupils: evaluate, adapt and debug code to make it suitable for their needs and designing products in CAD and creating a website and video.
Online safety	Online safety	Online safety
	Online safety Y5 (5 lessons) Learning about app permissions; the positive and negative aspects of online communication; that online information is not always factual; how to deal with online bullying and managing our health and wellbeing.	Online safety Y6 (6 lessons) Learning to deal with issues online; about the impact and consequences of sharing information online; how to develop a positive online reputation; combating and dealing with online bullying and protective passwords.