

## **Computing Year 7 Long Term Plan**

Rationale (with end points): Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns. Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems. Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds, and pictures) can be represented and manipulated digitally, in the form of binary digits; be able to convert between binary and decimal, and perform simple binary arithmetic. Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem. Use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions. Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.

undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users. Design, use, and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users.

Term	Торіс	Knowledge	Skills	Reading /wider reading
Autumn term 1	Online Safety	Getting to know the systems and an understanding of communicating online respectfully Respectful and effective feedback Sharing of work and resources Social media companies, their policies and influences	Presenting to an audience Effective methods to prevent cyberbullying How to get help Who are you talking to online What social media is used for	The dangers of the internet https://www.kaspersky.co.uk/resource-center/threats/to p-seven-dangers-children-face-online



		Distinguish between hardware and software Identify input, output and storage devices		
Autumn 2	Understanding Computers Part 1	Name at least five pieces of software	Draw a block diagram of the main components of a computer: input, processor, output and storage	
		Understand what happens at the "Process" stage Suggest appropriate input and output devices for a given scenario	Distinguish between main memory and permanent storage devices Name the three stages in the Fetch Execute Cycle	New Technologies, Changing the world https://www.pocket-lint.com/gadgets/news/142027-tech -innovations-that-will-shortly-change-the-world
		Explain what main memory is used for	Define Hz, MHz and GHz and state how these relate to the speed of the processori	
		Understand the difference between RAM and ROM and what ROM is used for.		
		Understand computational thinking is a way of breaking a	Be able to take a large problem and help to break it down into smaller tasks.	
Spring 1	Computational Thinking	problem down into smaller parts in order to find a solution	Be able to use abstraction to remove unnecessary detail from a problem	AI and the moral dilemma https://news.harvard.edu/gazette/story/2020/10/ethical- concerns-mount-as-ai-takes-bigger-decision-making-role/
		decomposition is the first stage of computational thinking	By using abstraction, be able to simplify complex problems.	



		Know that once a problem has been decomposed it may be possible to identify patterns within the smaller tasks. Understand that pattern recognition can help us to solve complex problems more efficiently. Decompose a problem in order to solve it using computational thinking techniques - algorithm to check log-in. Understand the term abstraction	Be able to write an algorithm to solve a simple problem Be able to test and debug an algorithm	
		'algorithm'		
Spring 2	Programming with Scratch	Understand that Scratch is a programming environment that allows you to create games, animations and other simulations	Understand what is meant by an algorithm Create a sprite and write code to make it move and bounce	The world and algorithms https://interestingengineering.com/how-algorithms-run-t he-world-we-live-in



		Produce design ideas	Load and use an existing	
		for a Scratch project	Scratch file	
		Understand the	Define a variable	
		purpose of comments		
		in a program	Write algorithms which use	
		Leave what each of the	variables to hold values such	
		Learn what each of the	as Number of Lives Left or	
		Scratch Green block	Score in a computer game	
		menu does	Annotate a program with	
			comments	
		Use the Pick Random	Lico coloction statements if	
		objects randomly on	else and elif in a program	
		the screen		
			Use indentation correctly to	
			define a block of code	
			Understand the use of the	
			operators <, =, >, and, or,	
			not.	
			Use some of these in a	
			Scratch game	
		Demonstrate a	Be able to identify good	
		thorough	improvements of	Technology revolution in the 20th century
Current on 1	Multimedia	understanding of the	multimedia products.	
Summer 1	Using PowerPoint	of multimedia		https://www.nationalgeographic.org/article/industrial-re
	i oweri onit	products.	Produce clear and detailed	volution-and-technology/6th-grade/
			visualisation diagrams for	
			the intended final product.	



Summer 2 Spreadsheet Spreadsheet Identify a mide range of difference platforms. Combine a wide range of different planed assets with a clear navigation system to create a working interactive multimedia product.   Summer 2 Spreadsheet Records and sources consistently appropriate. which are difference between data and information Vester consistently consistently understanding of what worked and what did not, fully referencing back to the brief.   Summer 2 Spreadsheet Spreadsheet form a wide frame of data Use basic formulas with cell references in a spreadsheet Impact of technology in business   Kuber 2 Spreadsheet form a wide frame of data Use the autofill tool to replicate cell data Impact of technology in business			I de actifica difference til e		
Summer 2SpreadsheetSpreadsheetCombine a wide range of different planned assets with a clear navigation product.Combine a wide range of different planned assets with a clear navigation product.Summer 2SpreadsheetSpreadsheet ModellingCombine a wide range of different planned assets with a clear navigation product.Produce a review of the multimedia product.Summer 2Spreadsheet ModellingRecords and sources consistently appropriate assets understanding of what worked and what did not, four a wide range of sources to create assets for the Multimedia product.New Yorke and What did not, four a wide range of sources to create in a spreadsheet (fr. ~, *, /)Impact of technology in business (frear early and cell references in spreadsheet softwareSummer 2Spreadsheet ModellingCarl and and informationUse basic formulas with cell references in a spreadsheet (fr. ~, *, /)Summer 2Spreadsheet ModellingCreate appropriate carl and informationUse basic formulas with cell reficate cell dataSummer 2Spreadsheet solutionCreate appropriate charts in a spreadsheetImpact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			Identify different file		
Summer 2SpreadsheetSpreadsheetCombine a wide range of different plantorms.Combine a wide range of different planter aworking interactive multimedia product.Summer 2SpreadsheetSpreadsheetCombine a wide range of dataSources of the multimedia productSummer 2SpreadsheetSpreadsheetCombine a wide range of dataSummer 2SpreadsheetSpreadsheetCombine a wide range of these plans, which are wholy appropriate assets from a wide range of sources to create assets for the Multimedia product.Near an and productSummer 2SpreadsheetSpreadsheetUse formatting techniques references in spreadsheetUse formatting techniques references in spreadsheetSummer 2SpreadsheetExplain the difference between primary and secondary sources of dataUse formating techniques references in a spreadsheetImpact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			types and their		
Summer 2Spreadsheet ModellingIdentify a wide range of assets and resources to be used as part of wholly appropriate.Interactive multimedia product.Records and sources consistently appropriate assets from a wide range of sources to create assets for the multimedia product.Produce a review of the multimedia product.Nummer 2Spreadsheet ModellingIdentify common, rows, cells, and cell informationUse formatting techniques in a spreadsheet (+, -, *, /)Summer 2Spreadsheet ModellingIdentify columns, rows, informationUse formatting techniques in a spreadsheet (+, -, *, /)Summer 2Spreadsheet modellingExplain the difference between primary and secondary sources of dataUse formatting techniques in a spreadsheet (+, -, *, /)Summer 2Spreadsheet modellingExplain the difference between primary and secondary sources of dataUse formatting techniques in a spreadsheet (+, -, *, /)			suitability for different	Combine a wide range of	
Summer 2Spreadsheet ModellingSpreadsheet between primary and scondary sources of datawith a clear navigation system to create a working interactive multimedia product.with a clear navigation system to create a working interactive multimedia product.Summer 2Spreadsheet ModellingIdentify a wide range of assets and resources to be used as part of these plans, which are wholly appropriate.with a clear navigation system to create a working interactive multimedia product.Summer 2Spreadsheet Multimedia product.Records and sources from a wide range of sources to create assets for the multimedia product.Vertex of the multimedia product.Summer 2Spreadsheet Multimedia product.Use formatting techniques in a spreadsheet (t, -, *, /)Impact of technology in business (t, -, *, /)Summer 2Spreadsheet modellingExplain the difference between primary and secondary sources of dataUse the autofill tool to replicate cell data			platforms.	different planned assets	
Summer 2 Spreadsheet Identify a wide range of assets and resources to be used as part of these plans, which are wholly appropriate. ystem to create a working interactive multimedia product.   Records and sources consistently appropriate assets understanding of what appropriate assets understanding of what did not, from a wide range of sources to create assets or the brief. Produce a review of the multimedia product   Summer 2 Spreadsheet Identify columns, rows, cells, and cell references in spreadsheet software spreadsheet information Use formatting techniques in a spreadsheet (+, -, *, /)   Summer 2 Spreadsheet Explain the difference between primary and secondary sources of data Use the autofill tool to replicate cell data Impact of technology in business   Create appropriate cell data Create appropriate cell data Create appropriate cell data https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html				with a clear navigation	
Summer 2 Spreadsheet Modelling of assets and resources to be used as part of these plans, which are wholly appropriate. interactive multimedia product.   Records and sources consistently appropriate assets from a wide range of sources to create assets for the brief. Produce a review of the multimedia product demonstrates a thorough understanding of what worked and what did not, fully referencing back to the brief.   Summer 2 Spreadsheet Modelling Identify columns, rows, cells, and cell information Use formatting techniques in a spreadsheet (+, \sigma, *, /) Impact of technology in business   Lexplain the difference between primary and secondary sources of data Use ta outfill tool to replicate cell data Impact of technology in business. https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			Identify a wide range	system to create a working	
Summer 2Spreadsheet Modellingto be used as part of these plans, which are wholly appropriate.product.Records and sources consistently appropriate assets from a wide range of sources to create assets for the Mutimedia product.Produce a review of the mutimedia product sequence which demonstrates a thorough understanding of what worked and what did not, forilly referencing back to the brief.Summer 2Spreadsheet ModellingIdentify columns, rows, cells, and cell informationUse formatting techniques in a spreadsheet (+, -, *, /)Impact of technology in business (+, -, *, /)Summer 2Spreadsheet ModellingExplain the difference between data and informationUse tat and cell dataImpact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			of assets and resources	interactive multimedia	
Summer 2Spreadsheet Modellingthese plans, which are wholly appropriate. Records and sources consistently appropriate assets from a wide range of sources to create assets for the Multimedia product.Produce a review of the multimedia product sequence which demonstrates a thorough understanding of what worked and what did not, fully referencing back to the brief.Produce a review of the multimedia productSummer 2Spreadsheet ModellingIdentify columns, rows, cells, and cell references in spreadsheet softwareUse formating techniques in a spreadsheet calculations in a spreadsheet (+, -, *, /)Impact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			to be used as part of	product.	
Summer 2 Spreadsheet Modelling Spreadsheet Modelling Identify columns, rows, information Use basic formulas with cell references to perform calculations in a spreadsheet Impact of technology in business   Summer 2 Spreadsheet Modelling Explain the difference between primary and secondary sources of taba Create appropriate charts in a spreadsheet Impact of technology in business   Summer 2 Spreadsheet Modelling Explain the difference between primary and secondary sources of taba Create appropriate charts in a spreadsheet Impact of technology in business			these plans, which are		
Summer 2 Spreadsheet Modelling Spreadsheet Modelling Implement the difference between primary and scondary sources of the sources of the sources of the sources to create the sources to create the sources to create the sources the sources the the sources the source the			wholly appropriate.	Produce a review of the	
Summer 2Records and sources consistently appropriate assets from a wide range of sources to create assets for the Multimedia product.sequence which demonstrates a thorough understanding of what worked and what did not, fully referencing back to the brief.Summer 2Spreadsheet ModellingRecords and sources of respirationsequence which demonstrates a thorough understanding of what worked and what did not, sources to create assets for the multimedia product.Use formatting techniques in a spreadsheetSummer 2Spreadsheet ModellingIdentify columns, rows, cells, and cell references in spreadsheet softwareUse basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /)Impact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html				multimedia product	
Summer 2Spreadsheet Modellingconsistently appropriate assets from a wide range of sources to create assets for the Multimedia product.demonstrates a thorough understanding of what worked and what did not, fully referencing back to the brief.Summer 2Spreadsheet ModellingIdentify columns, rows, cells, and cell references in spreadsheet softwareUse formatting techniques in a spreadsheetImpact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			Records and sources	sequence which	
Summer 2Spreadsheet Modellingappropriate assets from a wide range of sources to create assets for the Multimedia product.understanding of what worked and what did not, fully referencing back to the brief.Summer 2Spreadsheet ModellingIdentify columns, rows, cells, and cell references in spreadsheet softwareUse formatting techniques in a spreadsheetImpact of technology in businessSummer 2Spreadsheet ModellingExplain the difference between data and informationUse the autofill tool to replicate cell dataImpact of technology in businessCalculations in a spreadsheetUse the autofill tool to replicate cell dataUse the autofill tool to replicate cell dataImpact of technology in business.chron.com/impact-technological-ch ange-business-activity-2191.html			consistently	demonstrates a thorough	
Summer 2Spreadsheet ModellingWorked and what did not, fully referencing back to the brief.Summer 2Spreadsheet ModellingIdentify columns, rows, cells, and cell references in spreadsheet softwareUse formatting techniques in a spreadsheet Use basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /)Impact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			appropriate assets	understanding of what	
Summer 2sources to create assets for the Multimedia product.fully referencing back to the brief.Summer 2Spreadsheet ModellingIdentify columns, rows, cells, and cell references in spreadsheet softwareUse formatting techniques in a spreadsheetSummer 2Spreadsheet ModellingIzpain the difference between data and informationUse basic formulas with cell references to perform calculations in a spreadsheetImpact of technology in businessLise the autofill tool to replicate cell dataExplain the difference between primary and secondary sources of dataCreate appropriate charts in a spreadsheetImpact of technology in business			from a wide range of	worked and what did not,	
Summer 2 Spreadsheet Modelling identify columns, rows, cells, and cell references in spreadsheet software Use formatting techniques in a spreadsheet Impact of technology in business   Summer 2 Spreadsheet Modelling Explain the difference between data and information Use the autofill tool to replicate cell data Impact of technology in business   Karper 2 Spreadsheet Explain the difference between grimary and secondary sources of data Create appropriate charts in a spreadsheet Impact of technology in business			sources to create	fully referencing back to the	
Summer 2Multimedia product.Use formatting techniques in a spreadsheetIdentify columns, rows, cells, and cell references in spreadsheet softwareUse formatting techniques in a spreadsheetImage: Column a spreadsheetSummer 2SpreadsheetIdentify columns, rows, cells, and cell references in spreadsheet and informationUse basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /)Impact of technology in business https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html			assets for the	brief.	
Summer 2Identify columns, rows, cells, and cell references in spreadsheet softwareUse formatting techniques in a spreadsheetSpreadsheet PModellingSpreadsheet softwareUse basic formulas with cell references to performModellingExplain the differencecalculations in a spreadsheetModellingExplain the differencecalculations in a spreadsheetExplain the differencebetween data andbetween data and(+, -, *, /)unse the autofill tool toreplicate cell dataexplain the differenceCreate appropriate charts in a spreadsheet			Multimedia product.		
Summer 2Spreadsheetcells, and cell references in spreadsheet softwarein a spreadsheet basic formulas with cell references to performImpact of technology in businessSummer 2Spreadsheet ModellingExplain the difference between data and informationcalculations in a spreadsheet (+, -, *, /)Impact of technology in businessSummer 2Spreadsheet ModellingExplain the difference between data and informationcalculations in a spreadsheet (+, -, *, /)Impact of technology in businessSummer 2Spreadsheet between data and informationCalculations in a spreadsheet (+, -, *, /)Impact of technology in businessSummer 2Spreadsheet between primary and secondary sources of dataCreate appropriate charts in a spreadsheetImpact of technology in business			Identify columns, rows,	Use formatting techniques	
Summer 2Spreadsheetreferences in spreadsheet softwareUse basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /)Impact of technology in businessSummer 2Spreadsheet ModellingExplain the difference between data and informationUse basic formulas with cell references to perform calculations in a spreadsheet Use the autofill tool to replicate cell dataImpact of technology in businessSummer 2Spreadsheet between data and informationUse the autofill tool to replicate cell dataImpact of technology in business.chron.com/impact-technological-ch ange-business-activity-2191.html			cells, and cell	in a spreadsheet	
Summer 2Spreadsheetspreadsheet softwareUse basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /)Impact of technology in businessSummer 2SpreadsheetExplain the difference between data and informationCalculations in a spreadsheet (+, -, *, /)Impact of technology in businessSummer 2SpreadsheetExplain the difference between data and informationUse the autofill tool to replicate cell dataImpact of technology in businessCreate appropriate charts in a spreadsheetCreate appropriate charts in a spreadsheetImpact of technology in business			references in		
Summer 2Spreadsheet ModellingExplain the difference between data and informationreferences to perform calculations in a spreadsheet Use the autofill tool to replicate cell dataImpact of technology in businessLabel equationExplain the difference between primary and secondary sources of dataCreate appropriate charts in a spreadsheetImpact of technology in business			spreadsheet software	Use basic formulas with cell	
Summer 2 Spreadsheet Modelling Explain the difference between data and information calculations in a spreadsheet (+, -, *, /) Impact of technology in business   Loss the autofill tool to replicate cell data Use the autofill tool to replicate cell data Impact of technology in business   Loss the autofill tool to replicate cell data Create appropriate charts in a spreadsheet Impact of technology in business				references to perform	
Summer 2 Spreadsheet Modelling between data and information (+, -, *, /) https://smallbusiness.chron.com/impact-technological-ch ange-business-activity-2191.html   Explain the difference between primary and secondary sources of data Create appropriate charts in a spreadsheet Create appropriate charts in a spreadsheet Https://smallbusiness.chron.com/impact-technological-ch			Explain the difference	calculations in a spreadsheet	Impact of technology in business
Summer 2 Modelling information Use the autofill tool to https://smallbusiness.chron.com/impact-technological-ch   Log (Log (Log (Log (Log (Log (Log (Log (	<b>6</b>	Spreadsheet	between data and	(+, -, *, /)	
Explain the difference between primary and secondary sources of dataUse the autofill tool to replicate cell dataange-business-activity-2191.htmlCreate appropriate charts in a spreadsheetCreate appropriate charts in a spreadsheetAnge-business-activity-2191.html	Summer 2	Modelling	information		https://smallbusiness.chron.com/impact-technological-ch
Explain the difference between primary and secondary sources of data replicate cell data   Create appropriate charts in a spreadsheet a spreadsheet		_		Use the autofill tool to	ange-business-activity-2191.html
between primary and secondary sources of data Spreadsheet Create appropriate charts in a spreadsheet			Explain the difference	replicate cell data	
secondary sources of data Create appropriate charts in a spreadsheet			between primary and		
data a spreadsheet			secondary sources of	Create appropriate charts in	
			data	a spreadsheet	
				-	



	Use conditional	Use the functions SUM,	
	formatting in a	COUNTA, MAX, and MIN in a	
	spreadsheet	spreadsheet	
	Collect data	Use a spreadsheet to sort	
		and filter data	
	Analyse data		
		Use the functions AVERAGE,	
		COUNTIF, and IF in a	
		spreadsheet	