

WESTON ST MARY C OF E PRIMARY SCHOOL

Long term Computing Plan 2023-24 Cycle B

EYFS - Technology								
Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B	Early Learning Goal		
To show an interest in	To know how to operate	To access, understand and	To learn about e-safety	To explore how a Bee-Bot	To begin to give reasons why	There are no early learning		
technological toys such as	simple equipment	interact with a range of		works	we need to stay safe online	goals that directly relate to		
IWB, iPads, toys with knobs,		technology within the Year R	To use the IWB, changing			computing objectives, though		
pulleys and buttons	To draw pictures on IWB and	environment	games and programmes	To use the internet with adult	To use the Bee-Bots and	it is still expected that children		
	begin to change colours			supervision to find and	program them to go forwards	will be introduced to		
		To draw pictures on IWB,		retrieve information	and backwards	appropriate technology and		
	To use the iPad to take	changing colour and pen size				use it within their provision.		
	pictures				To type their name using an			
					iPad or notebook			

Year 1/2	<u>Autumn A</u>	<u>Autumn B</u>	Spring A	Spring B	Summer A	<u>Summer B</u>
	Computing systems and networks/E-Safety	Programming 1	Skills showcase	Programming 2	Creating media	Data handling
	What is a computer?/E-Safety	Algorithms and debugging	Word Processing	Scratch Jr	Stop motion	International Space Station
Key Skills	 Understanding what a computer is and that it's made up of different components. Recognising that buttons cause effects and that technology follows instructions. Learning how we know that technology is doing what we want it to do via its output. Using greater control when taking photos with cameras, tablets or computers. Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. Using word processing software to type and reformat text. Creating and labelling images. 	 Developing confidence with the keyboard and the basics of touch typing. Articulating what decomposition is. Decomposing a game to predict the algorithms used to create it. Learning that there are different levels of abstraction. Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm. Learning that programs execute by following precise instructions. Incorporating loops within algorithms. Using logical thinking to explore software, predicting, testing and explaining what it does. 	 Developing confidence with the keyboard and the basics of touch typing. Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. Using word processing software to type and reformat text. Searching for appropriate images to use in a document. Understanding what online information is. Identifying whether information is safe or unsafe to be shared online. 	 Recognising that buttons cause effects and that technology follows instruction Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm. Learning that programs execute by following precise instructions. Incorporating loops within algorithms. Using logical thinking to explore software, predicting, testing and explaining what it does. Using an algorithm to write a basic computer program. Using loop blocks when programming to repeat an instruction more than once. 	 Using greater control when taking photos with cameras, tablets or computers. Using logical thinking to explore software, predicting, testing and explaining what it does. 	 Developing confidence with the keyboard and the basics of touch typing. Creating and labelling images. Collecting and inputting data into a spreadsheet. Interpreting data from a spreadsheet. Learning how computers are used in the wider world.



	 Learning how computers 	 Using an algorithm to 		 Using software (and 		
	are used in the wider	write a basic computer		unplugged means) to		
	world.	program.		create story animations.		
		 Developing word 				
	 Identifying whether 	processing skills,				
	information is safe or	including altering text,				
	unsafe to be shared	copying and pasting and				
	online.	using keyboard shortcuts.				
	 Learning how to create a 					
	strong password.					
	Learning to be respectful					
	of others when sharing					
	online and ask for their					
	permission before					
	sharing content.					
	 Learning strategies for 					
	checking if something					
	they read online is true.					
	Understanding how to					
	stay safe when talking to					
	neonle online and what					
	to do if they see or hear					
	something online that					
	makes them feel upset or					
	makes them teel upset of					
	uncomfortable.					
Key	To know the difference	To understand what	To know that touch	• To know that coding is	To understand that an	• To understand that you
Knowledge	between a desktop and	machine learning is and	typing is the fastest way	writing in a special	animation is made up of a	can enter simple data
Ū	laptop computer.	how it enables computers	to type.	language so that the	sequence of	into a spreadsheet.
	• To know that people	to make predictions.	• To know that I can make	computer understands	photographs.	• To understand what
	control technology.	• To know that loops in	text a different style, size	what to do.	To know that small	steps you need to take to
	To know some input	programming are where	and colour.	• To understand that the	changes in my frames will	create an algorithm.
	devices that give a	you set a certain	 To know that "copy and 	character in ScratchJr is	create a smoother	• To know what data to use
	computer an instruction	instruction (or	paste" is a quick way of	controlled by the	looking animation.	to answer certain
	about what to do	instructions) to be	duplicating text.	programming blocks.	To understand what	questions.
	(output).	repeated multiple times.		 To know that you can 	software creates simple	• To know that computers
	• To know that computers	• To know that abstraction		write a program to create	animations and some of	can be used to monitor
	often work together.	is the removing of		a musical instrument or	its features e.g. onion	supplies.
		unnecessary detail to		tell a joke.	skinning.	
	To understand the	help solve a problem.		-		
	difference between					
	online and offline.					
	To understand what					
	information I should not					
	post online.					
	To know what the					
	techniques are for					
	creating a strong					
	password.					
	• To know that you should					
	ask permission from					
	others before sharing					

	about them online and						
	that they	have the right					
	to say 'no.'						
	 To under 	stand that not					
	overythir						
	everytim	ig i see of reau					
	online is	true.					
Vocabulary	Battery	Accept	Abstraction	Backspace	Algorithm	Animation	Algorithm
	Buttons	Comment	Algorithm	Bold	Animation	Background	Astronaut
	Camera	Consent	Artificial intelligence	Сору	BIOCKS	Decompose	Data
	Computer	Content	Bug	Copyright	Button	Digital device	Digital
	Desktop	Deny	Clear	Cut	Button	Drawing	Digital content
	Device	Emojis	Correct	Delete	CGI	Гирроок	Experiment
	Digital recorder	Omine	Data	Forward button	Computer code	Frames	Galaxy
	Electricity	Dassword	Debug		Dobug	Object	Insulation Interactive man
	Electricity	Passworu	Decompose	Home sereen	Debug	Object Onion skinning	Interactive map
	Function	Permission	EITOI Kov foaturos		Fluid	Dinon skinning Dian	International Space Centre
	Invention	information	Loop	Import	Imitato	Fidil Still image	International space station
	Keyboard	Popula	Predict	Italics	Instructions	Still Inlage	Laboratory
	Lanton	Pop ups Prossure		Keyboard			Monitor
	Monitor	Privato	Unitelessary	Keyboard character	'On tan'		Planet
	Mouse	information		Keyboard shortcut	Programming		Satellite
	Output	Reliable		Keyword	Reneat		Sensor
	Paving till	Share		Lavout	ScratchIR		Space
	Scanner	Terms and		Navigate	Sequence		Temperature
	Screen	conditions		Paste	Sound recording		Thermometer
	System	Trusted adult		Redo			Water reservoir
	Tablet			Search			
	Technology			Space bar			
	Video			Text effects			
	Wires			Touch typing			
				Underline			
Why this,	Building on Year	Cycle A Mouse	Building on Cycle A	Building on Cycle A mouse skills.	Building on Cycle A	Building on digital imagery in	Building on Introduction to data
Why now?	skills exploring	, what a computer	programming Developing an	Learning about word processing	programming Exploring what	cycle A Children explore	from Cycle A Children learn how
,	is by identifying	and learning	understanding of what	and how to stay safe online as	'blocks' do using the app	storyboarding and simple	astronauts survive on the ISS
	how inputs and	and icarning	algorithms are how to program	well developing touch tuning	Seratchir' by carrying out an	animation creation using tablet	including identifying possessory
	now inputs and t		algorithms are, now to program		Scratchin, by carrying out an		including identifying necessary
	Understanding n	low computers	them and now they can be	skills. Introducing important	informative cycle of predict >	devices.	items, designing sensor displays,
	are used in the v	vider world,	developed to be more efficient	keyboard shortcuts, as well as	test > review. Programming a		and exploring habitable planets.
	children design t	heir own	through a range of unplugged	simple editing tools within a	familiar story and an animation		Children gain an understanding
	computerised in	vention.	and plugged-in activities.	word processor including: bold,	of an animal, children make their		of living in space and how space
				italics, underline and font colour	own musical instrument by		exploration can benefit life on
	Learning about o	online safety.		as well as how to import images.	creating buttons and recording		Earth.
	including: what h	hannens to			sounds as well as following an		
	information pact	tod online, how			algorithm to record a joke		
	information posi				algorithm to record a joke.		
	to keep things pi	rivate online;					
	who we should ask before sharing online; describing						
	different ways to	o ask for, give, or					
	denv nermission	online					
Unit	Namo co	me computor	Decompose a game to	Explain which are the	Explore a new application	Create a flip book	Describe and ovalain how
Onte							
Outcomes	periphera	ais and their	predict the algorithms.	nome row keys and how	independently.	animation.	astronauts' survival
	function.		Give a definition for	to find them for typing.	Explain what the blocks	 Decompose a story into 	needs are met aboard the
	 Recognis 	e that buttons	'decomposition'.	 Use the spacebar and 	on ScratchJr do and use	smaller parts to plan a	ISS.
	cause eff	ects.	Write clear and precise	backspace correctly.	them for a purpose.	stop motion animation.	Identify and digitally
	 Fxnlain th 	hat technology	algorithms	Type and make simple	1 1		draw items which fulfil
	follows in	astructions		alterations to toyt using			
		INTERNET MUSIC					

	Create also sith we to	buttone en a consul	December - Leave in	Create store metting	
of technology.	solve problems.	processor.	 Recognise a loop in coding and why it is 	animations with small	aboard the ISS.
 Design an invention 	Use loops in their	• Search for, import and	useful.	changes between images.	Read the correct
which includes inputs and	algorithms to make their	alter appropriate images	 Use a code to create an 		temperature on a
outputs.	code more efficient.	for a text document.	animation of an animal		thermometer.
Explain the role of	 Explain what abstraction 	 Modify text in a 	moving.		 Design a display showing
computers in the world	is.	document.	Use code to		everything that needs to
around them.		 Use copy and paste to 	follow and create an		be monitored by sensors
		copy text from one	algorithm.		on the ISS.
		document to another.	 Program code to run 'on 		 Create an algorithm that
Explain what is meant by		Explain what information	tap'.		addresses all plants'
online information.		is safe to be shared	• Explain the role of the		needs.
Recognise what		online.	blocks in a program they		Explain how space
information is safe to be			have created.		exploration can benefit
shared online.					life on Earth.
Explain why we need					Read data to identify
passwords and what					whether a planet might
makes a strong password.					be habitable.
Onderstand that they need to ask parmission					
hefore sharing content					
online and explain why					
 Understand that they 					
have the right to deny					
their permission to					
information about them					
being shared online.					
• Say who they can ask for					
help with online worries.					
Use some strategies to					
work out if online					
information is reliable or					
not.					

Year 3/4	<u>Autumn A</u>	<u>Autumn B</u>	Spring A	Spring B	Summer A	<u>Summer B</u>
	Computing systems and networks/E-Safety	Programming 1	Creating media	Skills showcase	Programming 2	Data handling
	Collaborative learning /E-Safety	Further Coding with Scratch	Website Design	HTML	Computational Thinking	Investigating Weather
Key Skills	 Understanding that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration. Use online software for documents, presentations, forms and spreadsheets. 	 Using decomposition to solve a problem by finding out what code was used. Using decomposition to understand the purpose of a script of code. Creating algorithms for a specific purpose. Coding a simple game. 	 Building a web page and creating content for it. Designing and creating a webpage for a given purpose. Using software to work collaboratively with others. 	 Remixing existing code. Building a web page and creating content for it. Understanding that information found by searching the internet is not all grounded in fact. Recognising that information on the Internet might not be true or correct and that 	 Using decomposition to solve a problem by finding out what code was used. Using decomposition to understand the purpose of a script of code. Identifying patterns through unplugged activities. 	 Using tablets or digital cameras to film a weather forecast. Understanding that weather stations use sensors to gather and record data that predicts the weather. Using keywords to effectively search for

	 Using software to work collaboratively with others. Understanding that software can be used collaboratively online to work as a team. Recognising what appropriate behaviour is when collaborating with others online. Understanding why some results come before others when searching. Understanding that information found by searching the internet is not all grounded in fact. Learning to make judgements about the accuracy of online searches. Identifying forms of advertising online. Reflecting on the positives and negatives of time online. Identifying respectful and disrespectful online behaviour. Recognising that information on the Internet might not be true or correct and that some sources are more trustworthy than others 	 Incorporating variables to make code more efficient. Remixing existing code. 		some sources are more trustworthy than others.	 Using past experiences to help solve new problems. Using abstraction to identify the important parts when completing both plugged and unplugged activities. Creating algorithms for a specific purpose. Using abstraction and pattern recognition to modify code. 	 information on the internet. Searching the internet for data. Designing a device that gathers and records sensor data. Recording data in a spreadsheet independently. Sorting data in a spreadsheet to compare using the 'sort by' option. Understanding that data is used to forecast weather.
Key Knowledge	 To understand that software can be used collaboratively online to work as a team. To know what type of comments and suggestions on a collaborative document can be helpful. To know that you can use images, text, transitions and animation in presentation slides. 	 To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch. To know what a conditional statement is in programming. To understand that variables can help you to create a quiz on Scratch. 	 To know that a website is a collection of pages that are all connected. To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks. To know that websites should be informative and interactive. 	 To understand and identify examples of HTML tags. To understand what changing the HTML and CSS does to alter the appearance of an object on the web. To understand that copyright means that those images are protected and to understand that we should do a "creative 	 To know that combining computational thinking skills can help you to solve a problem. To understand that pattern recognition means identifying patterns to help them work out how the code works. To understand that algorithms can be used for a number of purposes 	 To know that computers can use different forms of input to sense the world around them so that they can record and respond to data ('sensor data'). To know that a weather machine is an automated machine that respond to sensor data. To understand that weather forecasters use specific language, expression and pre-

Workburger Amounts Amounts <th></th> <th>To under</th> <th>stand some of</th> <th></th> <th></th> <th>commons" image search</th> <th>e.g. animati</th>		To under	stand some of			commons" image search	e.g. animati
Vocabulary encourse people to buy things online. - To understand that technology to be designed to act like or impersonate living things. - To form the internet. - To form what "take needs" is and ways to got websites that carry this spectration and identify when someone might needs to limit the amounts distraction and identify when someone might needs to limit. Dotatest block distraction and identify when someone might needs to limit. Dotatest block distraction and ways of which behaviours if appropriate in order to respected unline. Dotatest block distraction distrac		the meth	ods used to			if we wish to use images	design etc.
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Improvement in the second s		technolo	gy can be			websites that carry this	
Vocabular And and the stand st		designed	to act like or			type of misinformation	
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		Ta undan	idle living tilligs.			• TO KNOW What the	
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Vocabulary technology. explore and alter text and images. Vocabulary Animations Accuracy expected in order to stay stafe and be respectful online. for understand what behaviours are appropriate in order to stay stafe and be respectful online. Accuracy enderstand what behaviours are appropriate in order to stay stafe and be respectful online. Accuracy enderstand what behaviours are appropriate in order to stay stafe and be respectful online. Advention Contraction Code Component Content Content Advention Compution Content Abstraction Compution Content Code Component Content Abstraction Content Code Code Content Abstraction Code Content Code Content Abstraction Code Content Code Code Code Content Abstraction Code Content Code Code Code Content Abstraction Code Code Code Code Code Content Code Code Code Code Code Content Abstraction Code Code Code Code Code Code Code Code		technolo	gy can be a			and ways of using it to	
Website when someone might need to limit the amount of time spent using technology. images. images. Vocabulary • To understand what behaviours are appropriate in order to stay safe and be respectful online. Routent block Assessment Ausington Collaboration Code Component Control Collaboration Assessment Ausington Control Computer Assessment Collaboration Code Computation Assessment Collaboration Code Computation Code Computation Code Computation Code Computation Code Computation Code Computation Code Computation Code Context Context Context Context Context Computation Code Context Context Computation Code Context Computation Code Context Computation Code Code Context Computation Code Context Computation Code Context Computation Code Code Context Computation Code Context Computation Code Code Context Computation Code Code Code Context Code Context Computation Code Computation <th></th> <th>distractio</th> <th>on and identify</th> <th></th> <th></th> <th>explore and alter text and</th> <th></th>		distractio	on and identify			explore and alter text and	
Image: Notice of time synchronization of time synchronization of time synchronization what behaviours are appropriate in order to stry safe and be respectful online. Roadcast block Assessment Code Abstraction Abstraction Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Abstraction Appropriate in order to stry safe and be respectful online. Appropriate in order to stry safe and be respectful online. Appropriate in order to stry safe and be respectful online. Appropriate in order to stry safe and be respectful online. Appropriate in order to stry safe and be respectful on order to stry safe and be respectful on order to stry safe and be respectful on order to stry safe and be respective. Appropriate in order to stry safe and be respective. Appropriate in order to stry safe and be respective. Appropriate in order to stry safe and be respective. Appropriate in order to stry safe and be respecting on the prespective. Appropriate in order to st		when sor	meone might			images.	
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Comment Contribution DataBot ComputerDecomposition Contribution GameContent Contribution Create End tag Pake newsDecomposition End tag Pake newsDecomposition End tag Pake newsDecomposition End tagDecomposition End tagDecomposition <b< th=""><th></th><th>Collaboration</th><th>Belief</th><th>Coordinates</th><th>Collaboration</th><th>Copyright</th><th>Computational thinking</th></b<>		Collaboration	Belief	Coordinates	Collaboration	Copyright	Computational thinking
Contribution DataControl Compute EditedControl Compute DataFeatures Game CreateControl CreateEnd tag Fake newsInput Logical reasoning OutputEditedDistractionsFact InformationDesign ParametersHacking Pattern recognitionDutput ParametersFormat InsertInapp purchases InsertInsert PogramProgram ProgramHotopy ProgramInput Hotopy InputVariableUnix Program Numerical data Resolved Share SurgestionsProgram ScriptHotopy ProgramInput Hotopy Input InsertVariablesVariablesWhy this, Why now?Working collaboratively in a versions faculative tools and building on previous knowledge of collaborative tools and building on previous knowledge of computer systems and networks.Learning the basics of programming in Scratch, children stage stare.Building on their knowledge and programming in Scratch, children stare are recated, exploring how to change layouts, embed integrating how to change layouts, embed integrating how to computer systems and networks.Learning the basics of programming in Scratch, children whit variables are.Building on their knowledge and consisting and networks.Building on the previous unit, children will decomposition and understand what variables are.Building on their knowledge and consisting and networks.This unit builds and four areas of computer still so to the programming in Scratch, children will reate a simple script, use are created, exploring how to change layouts, embed imagesBuilding on the previous unit, children w		Comment	Bot	Decomposition	Content	CSS	Decomposition
Data Edited Edited Email account FormatComputer Immation Negative numbersGame Design Design EmbedFake news Design Design EmbedLogical reasoning Output Heading Heading Heading ScriptLogical reasoning OutputFreeze IconImages InfluencerParameters PositionEnbed EvaluateHeading Heading ScriptParameters SequenceIconIn-app purchases InfluencerPositionGoogle Sites PositionHTML HobbyVariableInsert Wumerical data Resolved Share SoriptProgram ScriptScript ProgramHops ProjectInternet browser HyperlinksOutput InsertWhy this, Why now?Program ScriptScript TokerInsert ProgramOutput InsertParagraph Progress ProgressParagraph ScriptWhy this, Why now?Working collaboratively in a collaborative tools and building on previous knowledge of computer systems and networks.Learning the basics of programming in Scratch, children wild composition and understand what variables are.Building on their knowledge and processing, and collaborative working skills whilst learning on previous knowledge of computer systems and networks.Learning the basics of programming in Scratch, children working skills whilst learning how to pages and web sites are created, exploring how to change layouts, embed images.Building on their knowledge and processing, and collaborative working skills whilst learning how to pages and web sites are created, exploring how to change layouts, embed images.Building on the previous		Contribution	Chatbot	Features	Contribution	End tag	Input
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understanding - learning how to		Further developi	ing E-Safetv		change layouts, embed images		
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:h :s	e.g. animation, games design etc.	prepared scripts to help create weather forecast films.
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nd		
	Abstraction	Accurate
	Algorithm Code Computational thinking	Climate zone
	Decomposition	Collaboration
	Logical reasoning	Cylinder Degroos
	Pattern recognition	Evaporation
	Script Sequence	Extreme weather Forecast
	Variable	Heat sensor Lightning
		Measurement Pinwheel
		Presenter
		Satellite
		Script Sensitive
		Sensor data Solar panel
		Tablet/Digital camera Temperature
		Thermometer
		Warm
	This unit builds and develops the	Building on previous data
ne l	tour areas of computational thinking through a range of	nandling units, children will Research and store data using
t	plugged and unplugged	spreadsheets, designing a
	activities.	weather station which gathers and records data and learning
		how weather forecasts are
		made. Children use tablets or

	navigate the internet in an		and videos and link between			digital cameras to present a
	informed, safe and respectful		pages.			weather forecast.
	way.					
Unit Outcomes	 Understand the need to be thoughtful when working on a collaborative document. Use comments to suggest changes to a document and understand how to resolve comments. Plan a survey for Microsoft Form with a range of different questions types that will provide different types of answer, e.g. text, multiple choice or numerical values. Create a Microsoft Form with a range of different question types that will provide different types of answer, e.g. text, multiple choice or numerical values. Export data to a spreadsheet, highlighting data, using conditional formatting and calculating averages and sums of numbers. Describe how to search over multiple platforms and are aware of the accuracy of the results presented. Describe some of the methods used to persuade people to buy online. Explain the difference between fact, opinion and belief and recognise these online. Explain some positive and negative distractions of using technology and small strategies on how to reduce the amount of time spent on technology. 	 Understand how to create a simple script in Scratch – be able to change sprite and prevent the sprite from rotating. Use decomposition to identify key features and understand how to decipher actions that make the quiz game work. Understand what a variable is and how to use the 'say' and 'ask' blocks. Create a variable and be able to use a variable to record a score. Understand what a variable is and how it works within a program. 	 Create a Sway with a title, image and a completed first header section. Create a clear plan for their web page and beginning to create it. Create a professional-looking web page with useful information and a clear style, which is easy for the user to read and find information from. Create a clear plan by referring back to their checklist to include a range of features. Create a web page with clear sections and with a range of features in. 	 Add text between the heading and paragraph tags. Easily activate the goggles to investigate a web page. Explain how they altered the HTML to create their own posters. Change the colours and sizes of their object elements. Explain how they created their story. Adapt the basic elements of a story within a web page using the 'Inspect Elements' tool. Change an image within a web page and create their own news story, replacing the text and images of a webpage. 	 Understand that problems can be solved more easily using computational thinking. Understand what the different code blocks do and create a simple game. Understand the terms 'pattern recognition' and 'abstraction' and how they help to solve a problem. Create a Scratch program which draws a square and at least one other shape. Understand how computational thinking can help to solve problems and apply computational thinking to problems they face. 	 Search the web efficiently to find temperatures of different cities and record this accurately. Design a weather station that gathers and records sensor data, explaining how it works and the units of measurement it would use. Design an automated machine that uses selection to respond to sensor data. Search for and record weather forecast information in a spreadsheet and explain how this data is collected. Create a video which includes weather forecast information.

Year 5/6	<u>Autumn A</u>	Autumn B	Spring A	Spring B	Summer A	Summer B
	Computing systems and networks/E-Safety	Programming	Data handling	Creating media	Data handling	Skills showcase
	Bletchley Park/E-Safety	Intro to python	Big Data 1	History of computers	Big Data 2	Inventing a product
Key Skills	 Learning about the history of computers and how they have evolved over time. Using past experiences to help solve new problems. Writing increasingly complex algorithms for a purpose. Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Changing a program to personalise it. Evaluating code to understand its purpose. Predicting code and adapting it to a chosen purpose. Using search and word processing skills to create a presentation. Understanding how search engines work. Understanding the importance of secure passwords and how to create them. Using search engines safely and effectively. 	 Decomposing a program into an algorithm. Writing increasingly complex algorithms for a purpose. Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Using and adapting nested loops. Programming using the language Python. Changing a program to personalise it. Evaluating code to understand its purpose. Using logical thinking to explore software independently, iterating ideas and testing continuously. 	 Understanding and identifying barcodes, QR codes and RFID. Identifying devices and applications that can scan or read barcodes, QR codes and RFID. Understanding how barcodes, QR codes and RFID work. Gathering and analysing data in real time. Creating formulas and sorting data within spreadsheets. Learning how 'big data' can be used to solve a problem or improve efficiency. 	 Learning about the history of computers and how they have evolved over time. Using the understanding of historic computers to design a computer of the future. Using search and word processing skills to create a presentation. Planning, recording and editing a radio play. Creating and editing sound recordings for a specific purpose. 	 Understanding how corruption can happen within data during transfer (for example when downloading, installing, copying and updating files). Understanding that computer networks provide multiple services. Using search and word processing skills to create a presentation. Creating formulas and sorting data within spreadsheets. Learning about the Internet of Things and how it has led to 'big data'. Learning how 'big data' can be used to solve a problem or improve efficiency. 	 Using past experiences to help solve new problems. Writing increasingly complex algorithms for a purpose. Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Changing a program to personalise it. Evaluating code to understand its purpose. Predicting code and adapting it to a chosen purpose. Using logical thinking to explore software independently, iterating ideas and testing continuously. Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions.
Key Knowledge	 To understand the importance of having a secure password and what "brute force hacking" is. To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2. 	 To know that there are text-based programming languages such as Logo and Python. To know that nested loops are loops inside of loops. To understand the use of random numbers and remix Python code. 	 To know that data contained within barcodes and QR codes can be used by computers. To know that infrared waves are a way of transmitting data. To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. 	 To know that radio plays are plays where the audience can only hear the action so sound effects are important. To know that sound clips can be recorded using sound recording software. To know that sound clips can be edited and trimmed. 	 To know that data can become corrupted within a network but this is less likely to happen if it is sent in 'packets'. To know that devices or that are not updated are most vulnerable to hackers. To know the difference between mobile data and WiFi. 	 To know what designing an electronic product involves. To know which programming software/language is best to achieve a purpose. To know the building blocks of computational thinking e.g. sequence, selection, repetition,

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	Code	Digital personality	Instructions	Contactless	Graphics	Infrared
	Combination	Einancial		Data		Internet of Thisse
	Complination	Financial	Loop			internet of Things
	Contribute	information	Output	Encrypted	Hardware	Personal
	Convince	Hacking	Patterns	Infrared	Kilobytes	Privacy
	Date shift cipher	Inappropriate	Random	MagicBand	Megabyte	QR codes
	Discoverv	Malware	Remix	Privacy	Memory storage	Revolution
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	Password	Paste		Radio waves	Play	Smart city
	Pig Latin	Personal		RFID	Processor	Smart school
	Dignen cinhor	information		Signal	Radio play	Ston motion
	Present	Personality		Systems/data analyst	KAIVI	Inreat
	Scrambled	Phishing		Transmission	Raspberry Pi	WiFi
	Secret	Privacy settings		Wireless	Record	Wireless
	Secure	Private			Reverb	
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Opinions
Output
Photos
Product
Program
Screenshot
Search engine
Selection
Sequence
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Why this, Why now?	Screengrab Secure Settings Software updates Two factor authenication URL Username Discovering the history of Bletchley Park, historical figures, and computer science. Children learn about code-breaking and password hacking as well as decoding messages. Children present information about historical figures which links to our History Curriculum in Year 6. Children enhance their online safety knowledge, learning how to navigate the internet in an informed, safe and respectful way.	Learning the fundamentals of the programming language of Python, they will test, change and explain what their program does. Children use loops and explain what repeats do and what the parts of the loop do while recognising that computers choose random numbers and decompose the program into an algorithm. These skills build on previous programming units.	Understanding about the use of big data including barcodes, QR codes, infrared, and RFID technologies. Children will create and scan their own QR codes, manipulate real-time data in spreadsheets, and present their findings. They also analyse transport data to understand its usefulness to commuters. QR codes are used throughout KS2.	Terrabytes Touch screen Track Trackpad Trailer This unit links to the Year 1/2 History curriculum covering WWII. Writing, recording and editing radio plays set during WWII, looking back in time at how computers have evolved and designing a computer of the future.	This unit builds directly on Big Data 1. Understanding data usage through the use of mobile data vs WiFi, the Internet of Things, and big data. Identifying high/low data activities and preparing presentations on using Big Data/IoT to improve school efficiency while respecting privacy.	Snippets Software Structures Variables Building on previous knowledge and skills, children design a new electronic product and use CAD software to design appropriate housing for it. Developing skills in website design, video editing, and persuasive language to promote their product. Evaluating and adapting existing code, debugging programs, and searching for accurate information online.
Unit Outcomes	 Explain that codes can be used for a number of different reasons and decode messages. Explain how to ensure a password is secure and how this works. Create a simple website with information about Bletchley Park including the need to build electronic thinking machines to solve cipher codes. Explain the importance of historical figures and their contribution towards computer science. Present information about their historical figure in an interesting and engaging manner. Discuss a range of issues online that can leave pupils feeling sad, frightened, worried or uncomfortable and can describe numerous ways to get help. Explain how sharing online can have both 	 Iterate ideas, testing and changing throughout the lesson and explain what their program does. Use nested loops in their designs, explaining why they need two repeats. Alter the house drawing using Python commands; use comments to show a level of understanding around what their code does. Use loops in Python and explain what the parts of a loop do. Recognise that computers can choose random numbers; decompose the program into an algorithm and modify a program to personalise it. 	 Understand why barcodes and QR codes were created. Create (and scan) their own QR code using a QR code generator website. Explain how infrared can be used to transmit a Boolean type signal. Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets. Take real-time data and enter it effectively into a spreadsheet. Presenting the data collected as an answer to a question. Recognising the value of analysing real-time data. Analyse and evaluate transport data and consider how this provides a useful service to commuters. 	 Explain how to record sounds and add in sound effects over the top. Produce a simple radio play with some special effects and simple edits which demonstrate an understanding of how to use the software. Create a document that includes correct date information and facts about the computers and how they made a difference. Demonstrate a clear understanding of their device and how it affected modern computers, including well-researched information with an understanding of the reliability of their sources. Describe all of the features that we'd expect a computer to have including RAM, ROM, hard drive and processor, 	 Recognise that data can become corrupted within a network and that data sent in packets is more robust, as well as identify the need to update devices and software. Recognise differences between mobile data and WiFi and use a spreadsheet to compare and identify high-use data activities and low-use data activities. Make links between the Internet of Things and Big Data and give a basic example of how data analysis/analytics can lead to improvement in town planning. Explain ways that Big Data or IoT principles could be used to solve a problem or improve efficiency within the school and prepare a presentation about their idea, considering the privacy of some data. 	 Evaluate code, understanding what it does and adapt existing to code for a specific purpose. Debug programs and make them more efficient using sequence, selection, repetition or variables. Design appropriate housing for their product using CAD software, including any input or output devices needed to make it work. Create an appealing website for their product, aimed at their target audience which explains what their product is and what it does, using persuasive language. Create an edited video of their project, articulating the key benefits. Describe and show how to search for information online and be aware of

	positive and negative	but of a higher	Present their ideas about	the accuracy of the
	impacts.	specification than	how Big Data/IoT can	results presented.
•	Be aware of how to seek	currently available.	improve the school and	
	consent from others		provide feedback to	
	before sharing material		others on their	
	online and can describe		presentations.	
	how content can still be			
	shared online even if it is			
	set to private.			
•	Explain what a 'digital			
	reputation' is and what it			
	can consist of.			
•	Understand the			
	importance of capturing			
	evidence of online			
	bullying and can			
	demonstrate some of			
	these methods on the			
	devices used at school.			
•	Describe ways to manage			
	passwords and strategies			
	to add extra security such			
	as two-factor			
	authentication.			
•	Explain what to do if			
	passwords are shared,			
	lost, or stolen.			
•	Describe strategies to			
	identify scams.			
•	Explain ways to increase			
	their privacy settings and			
	understand why it is			
	important to keep their			
	software updated.			