## **Medium Term Plan**

## Year 4 Computing Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Strands	Computer systems and networks	Programming 1	Creating Media	Skills Showcase	Programming 2	Data Handling
Торіс	Collaborative learning	Further coding with Scratch	Website Design	HTML	Computational thinking	Investigating Weather

## Key Stage 2 Pupils should be taught to;

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- ✓ Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- ✓ Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- ✓ Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- ✓ Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Computing Strand & Link to National Curriculum	Progression of Knowledge	Learning Objectives & Skills Progression	Hardwar e & Software	Cross Curricular Links	Key Vocabulary
Computing Systems and Networks 1 - Collaborative Learning✓Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration✓Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content✓Select, use and combine a variety of software (including internet services) on a range of	<ul> <li>To understand that software can be used collaboratively online to work as a team.</li> <li>To know what type of comments and suggestions on a collaborative document are helpful.</li> <li>To know that you can use images, text, transitions and animation in presentation slides.</li> </ul>	<ul> <li>Understand the need to be thoughtful when working on a collaborative document.</li> <li>Use comments to suggest changes to a document and understand how to resolve comments.</li> <li>Use a variery of different slide styles to convey information uncluding images and transitions.</li> <li>Create a google form with a range of different question types that will</li> </ul>		RSE - Respectful relationships, courtesy and manners. English - Writing - composition and peer assessment. Maths - Interpreting data, bar charts and time graphs.	AnimationsAverageBar chartCollaborationCommentContributionDataEditedEmail accountFormatFreezeIconImagesInsertLinkMultiple choiceNumerical dataPie chartPresentationsResolvedReviewing commentsShareSlidesSoftwareSpreadsheetsSuggestionsSurveyTeamworkThemesTransitions

digital devices to design	provide	
and create a range of	different types	
programs, systems and	of answers,	
content that	EG. text,	
accomplish given goals.	multiple	
including collecting	choice or	
analysing evaluating	numerical	
analysing, evaluating	values.	
and presenting data	<ul> <li>Export data to</li> </ul>	
and information	a spreadsheet,	
✓ Use technology safely,	highlighting	
respectfully and	data using	
responsibly; recognise	conditional	
acceptable/unacceptab	formatting	
le behaviour: identify a	and	
range of ways to report	calculating	
ange of ways to report	averages and	
	sums of	
and contact.	numbers.	
	<ul> <li>Understandin</li> </ul>	
	g that	
	computer	
	networks	
	provide	
	multiple	
	services, such	
	as the World	
	Wide Web,	
	and	
	opportunities	
	for	
	communicatio	

		n and		
		collaboration.		
		<ul> <li>Use online</li> </ul>		
		software for		
		documents,		
		presentations,		
		forms and		
		spreadsheets.		
		<ul> <li>Using</li> </ul>		
		software to		
		work		
		collaboratively		
		with others.		
		<ul> <li>Understandin</li> </ul>		
		a that		
		software can		
		be used		
		conaboratively		
		online to work		
		as a team.		
		<ul> <li>Recognising</li> </ul>		
		what		
		appropriate		
		behaviour is		
		when		
		collaborating		
		with others		
		online.		
Lesson	Success Criteria	Lesson Outline	Differentiation and	Key Vocabulary
			Key Questions	

Lesson 1 -	<ul> <li>To understand that software can be used collaborativel y online to work as a team</li> <li>I understand that I can work with a partner without being in the same room</li> <li>I am able to contribute to teamwork sensibly and responsibly</li> <li>I recognise what behaviour is appropriate when collaborating online</li> </ul>	Children are shown what collaborative work means and create a set of class rules to ensure that working together runs smoothly	Differentiation: Pupils needing extra support: Help them to rephrase statements to make them quicker/easier to type. Pupils working at greater depth: Should be encouraged to type longer/more detailed sentences for either rules or lines in the story. Key Questions: • What is the value of sharing and collaboratin g on a document might be? • What rules should we set as a class? •	<ul> <li>Software</li> <li>Collaboration</li> <li>Online</li> <li>Teamwork</li> <li>Email account</li> <li>Document</li> <li>Link</li> </ul>
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary

Lesson 2	<ul> <li>To understand how to contribute to someone else's work effectively</li> <li>I can share my work with other people and access documents shared with me</li> <li>I understand that it is important to be positive and supportive of my classmates</li> <li>I can use collaborative word processing software to make suggestions or comment on someone else's work</li> </ul>	Once children are familiar with Google Docs, they learn a little about some of the features that can be used while working as part of a team	Differentiation:Pupils needingextra support:May need to havetheir work typed upfor them, so thatthey can focus onediting andcommenting.Pupils working atgreater depth:Use bothcomments andsuggestions tomakerecommendationsand suggestcontinuations tothe typed upEnglish work.Key Questions:• How cancommentsandsuggestions make iteasier tocollaborateon adocument?• Can youfigure out	<ul> <li>Sharing</li> <li>Document</li> <li>Contribution</li> <li>Suggestions</li> <li>Collaboration</li> <li>Typing</li> <li>Comment</li> <li>Edited</li> <li>Replied to</li> <li>Resolved</li> <li>Reviewing comments</li> </ul>
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Lesson	Success Criteria	Lesson Outline	how to share your document within Google Classroom ? Differentiation and Key Questions	Key Vocabulary
Lesson 3	<ul> <li>To understand how to create effective presentation s</li> <li>I understand how to use presentation software</li> <li>I can include images and text in my slides</li> <li>I can use transitions and animations to make my slides more interesting</li> </ul>	Children learn about some of the features of a slide presentation program and how to create fun and interesting presentations	Differentiation: For pupils needing extra support: Provide bulleted information around the topic they are presenting about. Consider pairing with more able pupils Pupils working at greater depth: Encourage them to explore Google Slides and see what else they can use to make their slides more interesting. Key Questions: • What is your favourite tv	<ul> <li>Presentations</li> <li>Presentation software</li> <li>Images</li> <li>Text</li> <li>Transitions</li> <li>Animations</li> <li>Slides</li> <li>Themes</li> <li>Insert</li> <li>Presenting</li> </ul>

		show or	
		film?	
	•	How much	
		information	
		can you	
		remember?	
	•	Did you	
		miss	
		anvthing	
		out that you	
		wanted to	
		sav?	
	•	How could	
		you help	
		yourself to	
		remember	
		what you	
		wanted to	
		sav?	
	•	Why do we	
	•	not put too	
		much	
		information	
		on ono	
		clido?	
	•	Roughly,	
		now many	
		points	
		snould we	
		nave on	
		one slide?	

Lesson	Success Criteria	Lesson Outline	Differentiation and	Key Vocabulary
Lesson 4	<ul> <li>To understand how to create and share Google Forms</li> <li>I can understand how to create a Google Form</li> <li>I understand why a survey might be useful</li> <li>I can share a form with my class</li> </ul>	Pupils are introduced to Google Forms, learning how to create and share surveys and questionnaires	Key QuestionsDifferentiation:Pupils needingextra support:Support childrenwith theirquestions andprovide examples:Multiple choice:how do you usuallyget to school?Numerical value:how old are you?Text: what is yourfavourite sport?Ask them to haveat least threequestions ratherthan five.Pupils working atgreater depth:Should use avariety of differentquestion types andcheck that theyunderstand whatinformation thattype of questionwill provide themwith.Key Questions:	<ul> <li>Survey</li> <li>Share</li> <li>Email account</li> <li>Theme</li> <li>Title</li> <li>Multiple choice</li> <li>Pie chart</li> <li>Bar chart</li> <li>Data representation</li> <li>Spreadsheet</li> </ul>

Lesson         Success Criteria         Lesson Outline         Differentiation and         Key Vocabulary           Key Vocabulary         Key Questions         Key Revision         Key Vocabulary	Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 5• To understand how to use a sharedHaving collected their data, 	Lesson 5	<ul> <li>To understand how to use a shared spreadsheet to explore data</li> <li>I can export data to a spreadsheet</li> <li>I am able to highlight data using conditional formatting</li> <li>I can use a spreadsheet to calculate averages and sums of numbers</li> </ul>	Having collected their data, pupils use a shared spreadsheet program to explore spreadsheets and learn how to extract information from the data	Differentiation:         For pupils         needing extra         support: Refer         them to the         Activity:         Conditional         formatting         resource to         support them.         Pupils working at         greater depth:         Should be         encouraged to         explore creating         graphs using their         data. Allow them to         tinker with the data         they have         collected to see         what they can find         out.         Key Questions:         • Have you         answered         all of the         surveys in         your inbox?         • Were there         any         questions	<ul> <li>Share</li> <li>Spreadsheets</li> <li>Survey form</li> <li>Icon</li> <li>Data</li> <li>View</li> <li>Freeze</li> <li>Conditional formatting</li> <li>Format</li> <li>Average</li> <li>Numerical data</li> </ul>

	found difficult to answer? • Were there some questions that came up in everyone's surveys? • Were there any unique questions that you thought were good?	
	•	

Computing	Progression of				Key Vocabulary
Strand & Link to	Knowledge	Learning Objectives	Hardware &	Cross Curricular Links	
National		& Skills Progression	Software		
Curriculum					President black Code black
Programming 1 -	- To understand	- Understand		Maths: 2-D grids,	Conditional Coordinates
Further coding	that a variable	how to create		coordinates and	Decomposition Features
<u>with Scratch</u>	is a value that	simple script		translations. Multiplication	Game Information
	can change	in Scratch		and division facts for the 3,	Negative numbers Orientation Parameters Position
	(depending on	- Use		4 and 8 times tables.	Program Project
	conditions) and	decomposition		English: spoken language -	Script Sprite
	know that you	to identify key		speculating, hypothesising,	Stage Tinker Variables
	can create	features and		imagining and exploring	Valiabits
	them in	understand		ideas.	
	Scratch.	how to			
	- To know what a	decipher			
	conditional	actions that			
	statement is in	make the quiz			
	programming.	game work.			
	- To understand	- Understand			
	that variables	what a			
	can help you to	variable is and			
	create a quiz	how to the			
	on Scratch	"say" and			
		"ask" blocks.			
		- Create a			
		variable and			
		be able to use			
		variable to			
		record a score.			
		- Understand			
		what a			
		variable is and			
		how it works			

		<ul> <li>within a programme.</li> <li>Using decomposition to solve a problem by finding out what code was used.</li> <li>Using decomposition to understand the purpose of a script of code.</li> <li>Creating algorithms for a specific purpose.</li> <li>Coding a simple game.</li> <li>Incorporating variables to make code more efficient</li> <li>Remixing</li> </ul>		
		- Remixing		
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 1	<ul> <li>To recall the key features of Scratch</li> </ul>	Children, whilst building upon their prior knowledge to Scratch, develop an understanding of sprite positioning	Differentiation: Pupils needing extra support: Support these pupils by discussing	<ul> <li>Features</li> <li>Scratch</li> <li>Sprite</li> <li>Stage</li> </ul>

I know what the main parts of Scratch are	and orientation and look at the features they already know	what other directions we need to move in apart from down and right?	<ul><li>Script</li><li>Game</li><li>Position</li></ul>
<ul> <li>called</li> <li>I can recognise how to adjust my sprite in Scratch</li> <li>I can add a new sprite to my stage to write a simple script</li> </ul>		<ul> <li>Pupils working at greater depth: encourage these pupils to think about adding a second sprite controlled by different keys, or see if they can figure out how to make a second sprite which follows the mouse.</li> <li>Key Questions: <ul> <li>Can you figure out what the numbers with x and y next to them mean?</li> <li>What do you think the number next to 'direction' represents?</li> <li>Where else have we seen the number 180?</li> <li>What do you think the three icons represent?</li> <li>What do you think the script does?</li> </ul> </li> </ul>	<ul> <li>Orientation</li> <li>Coordinates</li> <li>Negative numbers</li> <li>Position</li> <li>Code blocks</li> <li>Quiz</li> </ul>

			<ul> <li>Can you make sure your sprite can only mirror and doesn't go upside down?</li> <li>What have you created and come up with?</li> <li>What do you think the script does?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 2	<ul> <li>To understand how a Scratch game works by using decomposition to identify key features</li> <li>I can recognise that a sprite may contain more than one script</li> <li>I can identify the parts of a Scratch game</li> <li>I can understand</li> </ul>	While rediscovering the features of the Scratch interface and tools, pupils use their decomposition skills to decipher what has been included in the script for a quiz	Differentiation: Pupils needing extra support: are encouraged to think about what happens when they get an answer correct compared to an incorrect answer. Pupils working at greater depth: should have a greater understanding of how the sprites interact with one another. Ask them to open up a blank Scratch project and try out different blocks to see if they can get a similar response.	<ul> <li>Scratch</li> <li>Quiz</li> <li>Game</li> <li>Code</li> <li>Sprite</li> <li>Features</li> <li>Decomposition</li> <li>Script</li> <li>Code blocks</li> <li>Broadcast block</li> </ul>

	what we mean		Key Questions:	
	by		What is	
	decomposition		happening in the	
			game?	
			<ul> <li>How does the</li> </ul>	
			game work?	
			What are the	
			different features	
			in this game?	
			<ul> <li>What does each</li> </ul>	
			sprite do?	
			<ul> <li>Have you heard</li> </ul>	
			of the word	
			'decomposition'?	
			<ul> <li>What does</li> </ul>	
			decomposition	
			mean?	
			<ul> <li>How does the</li> </ul>	
			game work?	
			<ul> <li>What blocks do</li> </ul>	
			you think have	
			been used?	
			<ul> <li>What have you</li> </ul>	
			written as your	
			answers?	
			<ul> <li>What do you</li> </ul>	
			think the	
			'broadcast' block	
			does?	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key	Key Vocabulary
			Questions	

Lesson 3	<ul> <li>To understand what a variable is and how to make one</li> </ul>	Through tinkering with some specifically Scratch projects, pupils learn the importance and use of variables	Differentiation: Pupils needing extra support: support pupils with finding the 'ask and answer' block.	<ul> <li>Variables</li> <li>Code block</li> <li>Scratch</li> <li>Project</li> <li>Program</li> <li>Conditional statement</li> </ul>
	<ul> <li>I can use the 'ask' block in Scratch</li> <li>I know what a variable means</li> <li>I can make a variable</li> <li>I can store an answer to a question as a variable</li> </ul>		Pupils working at greater depth: encourage pupils to see if they can figure out how to get the computer to join together the answer with a phrase to make a single sentence ( you may want to give them a clue of looking at the green blocks and perhaps emphasise the word 'join'). Also, encourage them to create a few different questions and think about ways to make sure their responses are interesting for the player. <u>Key Questions:</u> • Why might we need 'variables' in a program, such as Scratch? • Can you locate the 'ask' block in Scratch?	• Tinker

			<ul> <li>What is happening in 'Variable part 1'?</li> <li>What is 'tinkering'?</li> <li>Why is tinkering important?</li> <li>What issues did you find in each other's code?</li> <li>How might we be able to solve these issues?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 4	<ul> <li>To understand how to make a variable in Scratch</li> <li>I can create a variable and use it to store information</li> <li>I can 'call' a variable within my program</li> <li>I can identify that variables can be words or numbers</li> </ul>	Children expand their knowledge further of why variables are so useful when coding, again using their tinkering skills to see how these variables work within specially created Scratch projects	Differentiation:Pupils needing extrasupport: encouragethem to plan theirquestions in advance.Print out sheet of usefulblocks and ask themwhere they think theyshould go within thecode they are writing.Discuss the programand ask them what theythink it does based onwhat the blocks sayPupils working atgreater depth: askthem to think aboutadding in another	<ul> <li>Variable</li> <li>Scratch</li> <li>Information</li> <li>Script</li> <li>Variables panel</li> </ul>

			<ul> <li>variable to be able to test a specific times table</li> <li><u>Key Questions:</u> <ul> <li>What is similar and what is the same?</li> <li>What is a variable?</li> <li>How have we used variables in the last lesson?</li> </ul> </li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 5	<ul> <li>To use knowledge of how variables work to create a quiz</li> <li>I can create a range of questions and use an 'if/else' block to check whether the answer is correct</li> <li>I can use a variable called 'score' to calculate the total number</li> </ul>	Children review and develop their times tables Scratch project using all the skills acquired in this unit so far	Differentiation: Pupils needing extra support: support less able students with getting a working program that evaluates score and has at least three questions. Pupils working at greater depth: encourage them to think about how they might get a 'random' question asked each time – click here for an idea: . They could also change the costume of the sprite as you play the game (watch the	<ul> <li>Project</li> <li>Variables</li> <li>Quiz</li> <li>Code block</li> <li>Tinker</li> <li>Parameters</li> </ul>

of correct		accompanying video for	
orcorrect		information about house	
answers for			
those			
completing m	,	your sprite).	
quiz		Key Questions:	
I can make		<ul> <li>What is a sprite?</li> </ul>	
sure my quiz		<ul> <li>If you set your</li> </ul>	
is engaging		sprite	
and exciting		coordinates to x	
for the people		= 0 and y = 0,	
plaving it		where would	
P		your sprite be?	
		Which of these	
		options will	
		ensure vour	
		sprite doesn't do	
		upsido down	
		direction?	
		<ul> <li>Describe what</li> </ul>	
		you think a	
		coordinate block	
		does?	
		<ul> <li>What is a</li> </ul>	
		variable?	
		Which of these is	
		not an example	
		of a variable?	
		•	

Computing Strand & Link to National Curriculum	Progression of Knowledge	Learning Objectives & Skills Progression	Hardware & Software	Cross Curricular Links	Key Vocabulary
<u>Creating</u> <u>Media -</u> <u>Website</u> <u>Design</u>	<ul> <li>To know that a website is a collection of pages that are all connected.</li> <li>To know that websites usually have a homepage and subpages as well as clickable links to new pages called hyperlinks.</li> </ul>	<ul> <li>Create a Sway with a title, image and a completed first header section.</li> <li>Create a clear plan for their web page and beginning to create it.</li> <li>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.</li> <li>Create a clear plan by</li> </ul>		RSE: Online Relationships – keeping safe, recognise risks and how to report. How information and data is shared and used online. English: Reading – comprehension. Discussions about books – taking turns and listening to what others say. English: Writing – composition. Organisational devices, learning from writing examples and peer assessment.	Assessment Audience Checklist Collaboration Content Contribution Create Design Embed Evaluate Features Google Sites Hobby Homepage Hyperlinks Images Insert Online Plan Progress Published Record Review Style Subpage Tab Theme Web page Web page Website World Wide Web

Lesson	Success Criteria	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. 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. Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 1	<ul> <li>To explore the features of Microsoft Sway to learn</li> </ul>	An introduction to Microsoft Sway, which uses a combination of text and media to create a website, is explored via the 'tinkering'	Differentiation: Pupils needing extra support: May need additional modelling of the key skills; can use the <i>Activity: Creating</i>	<ul><li>Microsoft Sway</li><li>Content</li><li>Web browser</li><li>Web page</li></ul>

	<ul> <li>how to create content for a web page</li> <li>I can evaluate websites</li> <li>I can create a web page using Microsoft Sway</li> </ul>	process to create a simple web page	<ul> <li><i>a Microsoft Sway sheet</i> and complete a step at a time.</li> <li><b>Pupils working at greater depth:</b> Should be encouraged to explore the other features not shared yet, such as adding a hyperlink to a relevant website.</li> <li><u>Key Questions:</u></li> </ul>	<ul> <li>Features</li> <li>Progress</li> <li>Websites</li> <li>Information</li> <li>Audience</li> <li>World Wide Web</li> </ul>
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 2	<ul> <li>To plan content for a web page as a collaborative online piece of work</li> <li>I can plan the content for my web page</li> <li>I understand the features of Microsoft Sway</li> <li>I can work collaboratively</li> </ul>	Design and create a web page for a class website, planning the content of their page and using various features within Microsoft Sway	<ul> <li>Differentiation:</li> <li>Pupils needing extra support: Create the book review together digitally so the children can then just copy and paste the text.</li> <li>Pupils working at greater depth: Add all the content and add a hyperlink to the author.</li> <li>Key Questions:         <ul> <li>Who can show me how to add a heading card/ image/text?</li> <li>Why do we have to use images that are marked for 'commercial reuse and modification'? (You can not just take images from a website if they don't have the right permissions. The owner</li> </ul> </li> </ul>	<ul> <li>Storyline view</li> <li>Design view</li> <li>Review</li> <li>Website</li> <li>Web page</li> <li>Content</li> <li>Collaboration</li> <li>Online</li> <li>Features</li> <li>Contribution</li> <li>Design</li> <li>Style</li> <li>Images</li> </ul>

			<ul> <li>of the image has permitted for it to be used)</li> <li>Why does our website content have to be detailed? (If the content is not of good quality, people will not return to read future content. Without good content, the website lacks value)</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 3	<ul> <li>To create an engaging web page</li> <li>I can transform a Microsoft Word document</li> <li>I can add additional content such as videos and links</li> <li>I can make my page informative and interactive</li> </ul>	Children continue to develop skills and understanding of Microsoft Sway by adding additional content to web pages that will help to make the website stand out even further	<ul> <li><u>Differentiation:</u></li> <li><u>Pupils needing extra support:</u></li> <li>Work on a collaborative document Microsoft Sway where the pupils are each only working one one animal.</li> <li><u>Pupils working at greater depth:</u> After exploring all the new features, the pupils could research and add on an extra animal of their choice.</li> <li><u>Key Questions:</u> <ul> <li>How can we check the design?</li> <li>How can we edit our work?</li> <li>What is copyright?</li> <li>What went well with this page?</li> <li>Which features from the checklist did they include?</li> <li>Which features should they try to include if they had more time?</li> </ul> </li> </ul>	<ul> <li>Web page</li> <li>Collaboration</li> <li>Web page</li> <li>Features</li> <li>Insert</li> <li>Embed</li> <li>Hyperlink</li> <li>Transform</li> </ul>

Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 4	<ul> <li>To plan and create a website</li> <li>I can plan a website in detail, considering the Microsoft Sway features that I will include</li> <li>I can start to build a website based on my designs</li> <li>I can consider information that other people would find useful and interesting</li> </ul>	Develop an understanding of how different web pages within a site link, which will inform the planning process for a personalised website	<ul> <li>Differentiation and key questions</li> <li>Differentiation:</li> <li>Pupils needing extra support:</li> <li>Should be given headings for their website and a Microsoft Word document with the content on so they can transform it (see Teacher video in ) if further support is required.</li> <li>Pupils working at greater depth: Should use as many relevant features as possible in their website.</li> <li>Key Questions: <ul> <li>What is the difference between a web page and a website? (A website is a collection of hyperlinked web pages.)</li> <li>What is a link to another website or page called? (a hyperlink)</li> <li>What information do you think is important to share on your website?</li> <li>What subheadings do you want to include?</li> <li>What will the focus be for each section?</li> </ul> </li> </ul>	<ul> <li>Plan</li> <li>Website</li> <li>Create</li> <li>Features</li> <li>Design</li> <li>Information</li> <li>Web page</li> <li>Website</li> <li>Hyperlink</li> </ul>

Lesson	Success Criteria	Lesson Outline	<ul> <li>What features have they planned to use on their website?</li> <li>Differentiation and Key Questions</li> </ul>	Key Vocabulary
Lesson 5	<ul> <li>To create a website and evaluate its success</li> <li>I can build a website with relevant headings about a specific topic</li> <li>I can use a range of features on Microsoft Sway</li> <li>I can evaluate my work and others</li> </ul>	Creating a website in accordance with plans and designs developed in the previous lesson and evaluate the website's success	Differentiation:Pupils needing extra support:Should produce fewer sections andinstead focus on using as many ofthe features as possible. You mayalso wish to give them the textcontent to add. Encourage them tokeep referring to their design to stickto their plan.Pupils working at greater depth:Should ensure they have included allthe elements from their design. Theycould also incorporate the 'Stack' todisplay images and suggest for themto add in a Microsoft Quiz (this wascovered in the ) based on the facts.Key Questions:• Where will you start? Why?• Which feature is mostimportant?	<ul> <li>Website</li> <li>Evaluate</li> <li>Web page</li> <li>Features</li> <li>Plan</li> <li>Stack</li> <li>Assessment</li> </ul>

Computing Strand & Link to National Curriculum	Progression of Knowledge	Learning Objectives & Skills Progression	Hardware & Software	Cross Curricular Links	Key Vocabulary
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Skills Showcase -	- To understand	- Add text	RSE: Online Relationships –	Code Component
HTML	and identify	between the	online friendships and the	Content Copyright
	examples of	heading and	risks associated with	Fake news Hacking
	HTML tags.	paragraph tags.	strangers.	Heading Headline
	- To understand	- Easily activate	English: Writing –	Hex code HTML
	what changing	the goggles to	Composition. Learning	Input Internet browser
	the HTML and	investigate a	structure, vocabulary and	Permission Remixing
	CSS does to	web page.	grammar from similar	Script Start tag
	alter the	- Explain how	examples. Using simple	Tags Text
	appearance of	they altered the	organisational devices.	URL Webpage
	an object on	HTML to create		
	the web.	their own		
	- To understand	posters.		
	that copyright	- Change the		
	means that	colours and		
	those images	sizes of their		
	are protected	object		
	and to	elements.		
	understand	Explain how		
	that we should	they created		
	do a "creative	their story.		
	commons"	- Adapt the basic		
	image search if	elements of a		
	we wish to use	story within a		
	images from	web page using		
	the internet.	the 'Inspect		
	- To know what	Elements' tool.		
	"fake news" is	- Change an		
	and ways to	image within a		
	spot websites	web page and		
	that carry this	create their		
	type of	own news story,		
	misinformation.	replacing the		

	- To know what	text and images		
	the "inspect"	of a webpage.		
	elements tool is	- Remixing		
	and ways of	existing code.		
	using it to	- Building a web		
	explore and	page and		
	alter text and	creating		
	images.	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 some		
		sources are		
		more		
		trustworthy		
		than others.		
losson	Success Criteria	-	Differentiation and Key	Koy Vocabulary
LESSUII	Success Criteria		Questions	Ney vocabulary
	. To understand		Differentiation	
Lesson 1	<ul> <li>To understand that web</li> </ul>	Children learn that html is a	Dunile pooding over	• Internet browser
		markup language which defines	support: Give additional	Internet prowser

<ul> <li>pages are built using different programming languages, and one of them is HTML</li> <li>To understand and identify examples of HTML tags</li> <li>I can recognise some HTML tags</li> <li>I know that each line of code has a start tag and an end tag</li> </ul>	how a website is displayed, they go on a HTML treasure hunt; investigating the code used to create different elements of the page	<ul> <li>support when the children are looking at source code by asking them to look for one or two specific tags e.g. <h1> or <body>.</body></h1></li> <li>Pupils working at greater depth: Challenge children to find tags not mentioned during class discussion and find out how they are used. Refer them to the 'HTML Cheat Sheet': for more html examples to explore Key Questions: <ul> <li>Do you understand any of these symbols?</li> <li>Have they seen these symbols before?</li> <li>Can you predict what the different tags do, eg: <img/>?</li> <li>Did you spot any tags we hadn't mentioned?</li> <li>What do you think they do?</li> <li>How many tags did they spot on their treasure hunt?</li> </ul> </li> </ul>	<ul> <li>Start tag</li> <li>End tag</li> <li>Paragraph</li> <li>Webpage</li> <li>Heading</li> <li>Input</li> <li>Output</li> <li>Script</li> <li>Code</li> </ul>
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Lesson	Success Criteria	Lesson Outline	<ul> <li>Did they spot any other tags and can they think what they are used for?</li> <li>Can they now order the cards so that the tags are together and that the doctype card is at the top?</li> <li>Differentiation and Key Questions</li> </ul>	Key Vocabulary
Lesson 2	<ul> <li>To change HTML code for a specific purpose</li> <li>I can identify and remix some parts of HTML code</li> <li>I can change the text size and content</li> </ul>	Children learn to edit HTML, changing the text size and content to create their own posters	Differentiation:Pupils needing extrasupport:Focus on justchanging the headings intheir poster.Pupils working at greaterdepth:Challenge to alterthe Style.CSS sheet tooand to replace the image inthe HTML.Key Questions:What does HTMLstand for?(Hypertext MarkupLanguage)Which HTML tagscan you remember?What would youneed to change inthe HTML to alter	<ul> <li>Remixing</li> <li>HTML</li> <li>Code</li> <li>Text</li> <li>Content</li> <li>Tags</li> <li>CSS</li> </ul>

			<ul> <li>the title of the poster?</li> <li>If you have an <h1> tag, what tag needs to be at the end? </h1></li> <li>Can you identify any tags from the code?</li> <li>What would happen if you changed an <h3> tag to an <h5> tag? (It would change to a smaller sized heading.)</h5></h3></li> <li>What does CSS do to a webpage?</li> <li>What new skills have you learnt?</li> <li>What could you teach others about HTML?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 3	<ul> <li>To change the HTML and CSS to alter the appearance of an object on the web</li> </ul>	Pupils learn how HTML is used to determine the layout of a web page and CSS the look and style of it and then use this knowledge to create their own storyboards	Differentiation:Pupils needing extrasupport: Ensure pupilshave additional support sorepetition of changes in thecode is modelled.Pupils working at greaterdepth: Ask them to find thehex codes themselves to	<ul> <li>HTML</li> <li>Hex code</li> <li>Input</li> <li>Output</li> <li>CSS</li> </ul>

lorcon	<ul> <li>I can change the size of some of the elements</li> <li>I can change the colour of some of the elements</li> </ul>		<ul> <li>change the colours. Can they add in any extra lines of text?</li> <li><u>Key Questions:</u> <ul> <li>What does px mean? (Pixels)</li> <li>What does CSS stand for? (Cascading Style Sheet)</li> <li>How can we develop our story further?</li> <li>How could we add an additional text or images to our story?</li> </ul> </li> </ul>	Kay Vacabulary
Lesson	Success Criteria	Lesson Outline	Questions	Key Vocabulary
Lesson 4	<ul> <li>To understand and explore more complex components of a web page</li> <li>I can use the inspect elements tool to explore the different components that make up a web page</li> </ul>	Applying their learning from the previous three lessons, pupils adapt a live website and learn about the issue of fake news and the reliability of information on the internet and create their own 'fake' stories by hacking the code of a website	Differentiation: Pupils needing extra support: Should choose a simple website to work with and may need reminding to double click to be able to change the code. Pupils working at greater depth: Should be challenged to alter lots of elements within their webpage. Key Questions:	<ul> <li>Fake news</li> <li>HTML</li> <li>Component</li> <li>Hacking</li> <li>Webpage</li> </ul>

<ul> <li>I can spo identify a news stor a web pa</li> <li>I can exp that the changes have mad a web pa are not permaner</li> </ul>	and Fake y on je ain e to je	<ul> <li>What does the word 'fake' mean?</li> <li>What does the word 'news' mean?</li> <li>What does the phrase 'fake news' mean to you?</li> <li>Why do you think people make up fake news?</li> <li>Do you think you</li> </ul>
		<ul> <li>could spot a fake news story?</li> <li>What tips did you learn as to how to spot fake news stories?</li> <li>What problems do you think fake news stories create?</li> <li>Why is fake news important to know about?</li> <li>What components make up a webpage?</li> <li>What HTML code tags can you</li> </ul>
		remember? <ul> <li>Have you changed</li> <li>their website</li> <li>forever?</li> </ul>

			<ul> <li>What do the different HTML tags mean?</li> <li>What do you need at the end of an HTML tag?</li> <li>What changes did you make using your Inspect Elements tool?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 5	<ul> <li>To alter key elements on a webpage including text and images</li> <li>I can find images that are permitted for reuse</li> <li>I can use the Inspect Elements tool</li> <li>I can change the elements of a website in regard to both the text and images</li> </ul>	Building upon their learning from the previous lesson, pupils learn how to change an image within a web page and create their own news story, replacing the text and images of a webpage	Differentiation:Pupils needing extrasupport: Could use simplerwebsite layouts such as'Kiddle' and may needsupport before completingthe activity independently.Pupils working at greaterdepth: Expect them tocomplete several newsstories with edited text andimages. Ask them toinvestigate some of theother HTML tags too.Key Questions:• Why is it useful tobe able to alter texton a webpage?	<ul> <li>HTML</li> <li>Webpage</li> <li>Headline</li> <li>URL</li> <li>Copyright</li> <li>Permission</li> </ul>

	•	Are the changes	
		you make	
		permanent?	
	•	What else could we	
		alter on a webpage	
		that we haven't?	
	•	Why do you have to	
	-	'conv image	
		address' and not	
		iust conv? (So the	
		image can be	
		located from its	
		evisting location on	
		the web)	
		line web)	
	•	How do you know	
		image address?	
		(Look for ima are or	
		(LOOK IOF IMg SIC OF	
		sic and paste	
		belween	
		commas)	
	•	why would you not	
		use low resolution	
		images or cartoons?	
		(It's poor quality)	

Computing Strand & Link to National Curriculum	Progression of Knowledge	Learning Objectives & Skills Progression	Hardware & Software	Cross Curricular Links	Key Vocabulary
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Programming 2 <u>-</u> Computational <u>Thinking</u>	<ul> <li>To know that combining computational thinking skills can help you to solve a problem.</li> <li>To understand that pattern</li> </ul>	<ul> <li>Understand that problems can be solved more easily using computational thinking.</li> <li>Understand what the different code blocks do and create a simple</li> </ul>	Maths: solve problems involving multiplying and adding. 2-D shapes and 3-D shapes. Recognising angles. Physical Education: perform dances using a range of movement patterns. English: Spoken Language – develop understanding through speculating, hypothesising, imagining and	Abstraction Algorithm Code Computational thinking Decomposition Input Logical reasoning Output Pattern recognition Script Sequence
<u>-</u> <u>Computational</u> <u>Thinking</u>	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	<ul> <li>can be solved more easily using computational thinking.</li> <li>Understand what the different code blocks do and create a simple game.</li> <li>Understand the terms 'pattern recognition' and 'abstraction' and 'abstraction' and how they help to solve a problem.</li> <li>Create a Scratch program which draws a square and at least one other</li> </ul>	adding. 2-D shapes and 3-D shapes. Recognising angles. Physical Education: perform dances using a range of movement patterns. English: Spoken Language – develop understanding through speculating, hypothesising, imagining and exploring ideas.	Agontini Code Computational thinking Decomposition Input Logical reasoning Output Pattern recognition Script Sequence Variable
	of purposes e.g. animation,	- Understand how computational		
	,	thinking can		

games design	help to solve	
etc.	problems and	
	apply	
	computational	
	thinking to	
	problems they	
	face.	
	- Using	
	decomposition	
	to solve a	
	finding out	
	what code was	
	used.	
	- Using	
	decomposition	
	to understand	
	the purpose of	
	a script of	
	code.	
	- Identifying	
	patterns	
	through	
	unplugged	
	activities.	
	- Using past	
	experiences to	
	help solve new	
	nrohlams	
	- Using	
	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.			
Lesson	Success Criteria	Lesson Out	line	Differentiation and Key Questions	Key Vocabulary
Lesson 1	<ul> <li>To understand that computational thinking is made up of four key strands</li> <li>I understand that problems can be made easier if I use</li> </ul>	Pupils learn that thinking is made up (abstraction, algoridecomposition a recognition) and apply carousel of unplugged	computational of four pillars ithm design, nd pattern these skills in a activities	Differentiation: Pupils needing extra support: reinforce the new vocabulary by connecting it with the activities, e.g. for abstraction – get them to reflect on the skill of picking out the most important features of an object to draw it in its simplest form. Pupils working at greater depth: encourage to	<ul> <li>Computational thinking</li> <li>Decomposition</li> <li>Abstraction</li> <li>Algorithm</li> <li>Code</li> </ul>

	computational thinking I know that computational thinking is made up of four strands: decomposition, pattern recognition, abstraction and algorithm		<ul> <li>consider other examples of when they have used computational thinking e.g. perhaps using RUCSAC to solve maths word problems.</li> <li><u>Key Questions:</u> <ul> <li>Did anyone start by adding the numbers together but get lost part way through?</li> <li>Who gave up early on?</li> <li>Did anyone not try at all?</li> </ul> </li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 2	<ul> <li>To understand what decomposition is and how to apply it to solve problems</li> <li>I can decompose a problem</li> <li>I can use decomposition to figure out what Scratch code does</li> </ul>	Pupils apply their understanding of decomposition to a real world task before analysing Code from Scratch to figure out what it might do	Differentiation: Pupils needing extra support: Should be encouraged to identify two or three key features for the game and think about how to code them. Pupils working at greater depth: Should be encouraged to think about extra features they could add into their game and how they might code them, e.g. adding further obstacles for the bug to bump into or	<ul> <li>Code</li> <li>Script</li> <li>Decomposition</li> <li>Sequence</li> <li>Algorithm</li> </ul>

	<ul> <li>I can decompose a problem to figure out which code blocks might have been used</li> </ul>		<ul> <li>making their bug bigger or smaller.</li> <li>Key Questions: <ul> <li>How can you make it easier to learn the dance?</li> <li>Can you think of a problem that you could break into smaller parts to make easier e.g. tidying your room or learning a song?</li> <li>What do you think each script does?</li> <li>Can you break down the different parts of the code to figure out what you need to do?</li> </ul> </li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 3	<ul> <li>To understand what pattern recognition and abstraction mean</li> <li>I know how to recognise patterns</li> </ul>	Pupils explore both abstraction and pattern recognition and look at how they can help us to solve problems using Scratch	Differentiation: Pupils needing extra support: May need help with adding new costumes to the existing animal sprite and changing one or two of the broadcast received blocks to reflect the new costumes and words.	<ul> <li>Pattern recognition</li> <li>Abstraction</li> <li>Variable</li> <li>Algorithm</li> <li>Code</li> </ul>

<ul> <li>I can use past experiences to understand how to solve new problems</li> <li>I understand how to abstract key information</li> </ul>	Pupils working at greater         depth: Should be         encouraged to alter both the         animal and the food and         attempt to alter the text on         the Abby sprite to make sure         the sentences make sense.         Key Questions:         • Can you remember         what abstraction         means?         • How did you know         what the person was         making?         • What was the         important information         that helped you to
I understand how to abstract key information	<ul> <li>the sentences make sense.</li> <li>Key Questions: <ul> <li>Can you remember what abstraction means?</li> <li>How did you know what the person was making?</li> <li>What was the important information that helped you to realise what it was?</li> <li>Did it matter what colour the plasticine was?</li> <li>Did it matter how big the piece of plasticine was?</li> <li>What needs to be changed?</li> <li>Did you spot any patterns which</li> </ul> </li> </ul>
	out how the game worked?

Lesson Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
<ul> <li>To understand how to create an algorithm and what it can be used for</li> <li>I can create an algorithm for drawing a square</li> <li>I can use my algorithm to write a script using Scratch</li> <li>I can use pattern recognition to modify my script to draw different shapes</li> </ul>	Pupils create a game in Scratch using the remaining pillar of computational thinking - algorithm design	<ul> <li>Differentiation:</li> <li>Pupils needing extra support: Provide the Activity: Code blocks needed for drawing the square – but put them in the wrong order for pupils to sequence correctly.</li> <li>Pupils working at greater depth: Show the activity, which uses the same concept to draw a selection of different shapes and snowflakes, asking them to predict what will happen and justify these predictions.</li> <li>Key Questions:</li> <li>What information did you need to share to explain your reasoning?</li> <li>Why did you choose to put a number there?</li> <li>What if the grid was bigger?</li> <li>Can you make an irregular hexagon rather than all of the</li> </ul>	<ul> <li>Input</li> <li>Output</li> <li>Algorithm</li> <li>Logical reasoning</li> </ul>

Lesson	Success Criteria	Lesson Outline	sides being the same length? • Was your script similar or different? Differentiation and Key Questions	Key Vocabulary
Lesson 5	<ul> <li>To combine computational thinking skills to solve a problem</li> <li>I can apply decomposition, pattern recognition, abstraction and algorithm design to problems</li> <li>I can work with a partner and discuss how to solve a problem</li> </ul>	Pupils apply their computational thinking skills to solve plugged and unplugged challenges, identifying which skills they're using in each	Differentiation: Pupils needing extra support: Could start with one of the 'kits' challenges aimed at younger pupils. Encourage them to discuss their thought process in detail with their partner. Pupils working at greater depth: Should be encouraged to identify the computational thinking skills that they are using to solve each question. If a pupil is particularly strong, you may want to consider challenging them to look at one of the 'Junior ' level challenges (aimed at 10-12 year-olds), however, even the most able pupils will find some of the 'Castor' level questions difficult. Key Questions: • Which of the cards you looked at needed abstraction?	<ul> <li>Computational thinking</li> <li>Algorithm</li> <li>Abstraction</li> <li>Decomposition</li> <li>Pattern recognition</li> </ul>

	٠	Can you find a card	
		where decomposition	
		came in useful?	
	•	How many of the	
		cards used pattern	
		recognition?Did you	
		need to construct	
		any algorithms to	
		solve your problem?	
	•	Did you get any	
		questions wrong?	
	•	What problems did	
		you face?	

Computing Strand & Link to National Curriculum	Progression of Knowledge	Learning Objectives & Skills Progression	Hardware & Software	Cross Curricular Links	Key Vocabulary
<u>Data Handling -</u> <u>Investigating</u> <u>Weather</u>	- To know that computers can use different forms of input to sense the world around	- Search the web efficiently to find temperatures of different cities		Science – temperature, eveporation and condensation, water cycle, observations and accurate measurements.	Accurate Backdrop Climate zone Cold Collaboration Condensation

them so that	and record this	Geography – physical	Cvlinder
they can	accurately.	geography including climate	Degrees
record and	- Design a	zones, biomes, vegetation	Evaporation
respond to	weather station	belts, rivers, mountains,	Extreme weather
data ('sensor	that gathers	volcanoes and earthquakes.	Forecast
data').	and records	Maps, atlases, globes and	Heat sensor
- To know that a	sensor data,	digital/computer mapping.	Lightning
weather	explaining how	Counties and cities of the	Measurement
machine is an	it works and the	United Kingdom.	Pinwheel
automated	units of	Maths – bar charts,	Presenter
machine that	measurement it	pictograms, tables and othe	Rain
respond to	would use.	graphs.	Satellite
sensor data.	- Design an	English: Spoken Language –	Script
- To understand	automated	discussions, presentations,	Sensitive
that weather	machine that	performances, role play,	Sensor data
forecasters	uses selection	improvisations and debates.	Solar panel
use specific	to respond to		Tablet/Digital camera
language,	sensor data.		Temperature
expression	- Search for and		Thermometer
and pre-	record weather		Tornado
prepared	forecast		Warm
scripts to help	information in a		Weather
create	spreadsheet		Weather forecast
weather	and explain how		Wind
forecast films.	this data is		
	collected.		
	- Create a video		
	which includes		
	weather		
	forecast		
	information.		
	- Using tablets or		
	digital cameras		

to film a		
weather		
forecast.		
- Understanding		
that weather		
stations use		
sensors to		
gather and		
record data		
which predicts		
the weather.		
- Using keywords		
to effectively		
search for		
information on		
the internet		
- Searching the		
internet for		
data		
- Designing a		
device which		
gatilets and		
data		
uala. Deserding data		
- Recording data		
in a		
spreadsheet		
independently.		
- Sorting data in a		
spreadsheet to		
compare using		
the 'sort by'		
option.		

Lesson	Success Criteria	- Understanding that data is used to forecast weather. Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 1	<ul> <li>To log data taken from online sources within a spreadsheet</li> <li>I know what weather is and what can affect it</li> <li>I understand the importance of data in weather forecasting</li> <li>I can search the internet for weather data</li> <li>I can record this data in a spreadsheet</li> </ul>	Pupils explore the weather around the world, recording the data into a spreadsheet and sorting it	Differentiation:Pupils needing extrasupport: could label thetemperatures on theResource: World mapresource rather than in aspreadsheet.Pupils working at greaterdepth: could use theirgeographic knowledge tohelp them to get closer tothe actual highest andlowest temperatures. Theycould also be shown how toinsert a table (see script) toenable them to more easilysort the data.Key Questions:• What do we meanby 'weather'?• What isevaporation?• What iscondensation?• Why does it rain?	<ul> <li>Weather</li> <li>Degrees</li> <li>Measurement</li> <li>Accurate</li> <li>Evaporation</li> <li>Condensation</li> </ul>

			<ul> <li>How does the temperature affect the weather?</li> <li>Would you expect very hot countries to rain much? Why not?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 2	<ul> <li>To design a weather station</li> <li>I understand what sensor data is</li> <li>I know different units of measurement</li> <li>I can design a device to sense and record the weather</li> </ul>	Pupils design a weather station which gathers and records sensor data, explaining how it works and the units of measurement it would use	Differentiation:Pupils needing extrasupport: Should focus onmeasuring rain ortemperature, as these areboth things they could doeasily in real life usingobjects that are widelyavailable.Pupils working at greaterdepth: Should bechallenged to focus onmeasuring sunshine,thinking about the units itwould be measured in andhow often the device wouldrecord this.Key Questions:• When was it coldestin the last week?• When was thewarmest in the lastweek?	<ul> <li>Weather</li> <li>Forecast</li> <li>Solar panel</li> <li>Cylinder</li> <li>Pinwheel</li> <li>Thermometer</li> <li>Satellite</li> <li>Cold</li> <li>Warm</li> <li>Rain</li> <li>Wind</li> <li>Temperature</li> </ul>

			<ul> <li>When was the wettest in the last week?</li> <li>Which day was the best for kite flying last week?</li> <li>How could rain, temperature or wind be measured?</li> <li>What units of measurement would be used to record this data?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 3	<ul> <li>To design an automated machine to respond to sensor data</li> <li>I know that sensor data can be used to help predict extreme weather</li> <li>I can use keywords to effectively search for</li> </ul>	Pupils design an automated machine which uses selection to respond to sensor data	Differentiation:Pupils needing extrasupport: should use one ofthe given examples in thelesson plan to build theirideas on.Pupils working at greaterdepth: should add detail totheir algorithm, showingwhat the device would doafter the dangerousweather has passed.Key Questions:• What is extremeweather?	<ul> <li>Extreme weather</li> <li>Sensor data</li> <li>Sensitive</li> <li>Climate zone</li> <li>Accurate</li> <li>Tornado</li> <li>Lightning</li> </ul>

	information on the Internet I can write an algorithm for an automated machine which uses selection		<ul> <li>What other types of extreme weather can you think of?</li> <li>How was sensor data collected in your model weather station in the previous lesson?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 4	<ul> <li>To understand how weather forecasts are made</li> <li>I know how weather is predicted</li> <li>I can use search engines to find information</li> <li>I can record data in a spreadsheet</li> </ul>	Learning how weather forecasts are made, pupils use search engines to find data and then record the information in a spreadsheet.	Differentiation:Pupils needing extrasupport: Should work witha partner and focus onfinding the relevantinformation on websites andputting it in thespreadsheet.Pupils working at greaterdepth: Should explain indetail how information fromsatellites and groundstations leads to weatherforecasts as well as howcollaboration betweenforecasters could impactthe accuracy of predictions.Key Questions:• Why would aweather forecasterneed an astronaut?(Because most	<ul> <li>Weather forecast</li> <li>Collaboration</li> <li>Temperature</li> <li>Wind speed</li> <li>Heat sensor</li> <li>Satellite</li> </ul>

			<ul> <li>weather forecasts rely upon data from satellites)</li> <li>What could go wrong if a weather forecast isn't accurate? (Threat to life, business and property)</li> <li>Where are we in the world?</li> <li>Which are you inclined to believe? Why?</li> </ul>	
Lesson	Success Criteria	Lesson Outline	Differentiation and Key Questions	Key Vocabulary
Lesson 5	• To use tablets or digital cameras to present a weather forecast	Using tablets or digital cameras, pupils present a weather forecast video	Differentiation: Pupils needing extra support: should focus on their filming skills within the group, judging whether they are the correct distance from the presenter	<ul> <li>Filming</li> <li>Presenter</li> <li>Script</li> <li>Tablet/Digital camera</li> <li>Temperature</li> <li>Weather forecast</li> </ul>
	<ul> <li>I know what information is included in a weather forecast</li> <li>I can write a short script</li> </ul>		Pupils working at greater depth: could be asked to clearly explain how they could make improvements (using some editing terminology) to their work if they were to repeat the activity <u>Key Questions:</u>	IOTECASI

for a weath forecast I can create short video	<ul> <li>Have you seen a weather forecast on television before?</li> <li>How are the</li> </ul>	
	<ul> <li>forecasts filmed?</li> <li>How do people predict the weather?</li> <li>What information is usually given in a</li> </ul>	
	<ul> <li>weather forecast?</li> <li>Why are weather forecasts so important?</li> </ul>	
	Who might weather     forecasts be the     most useful for?	