Science Progression Lower KS2

Year /	Themes/	Dimer	nsions	Working towards	Expected	Mastery	Deepening
Term	Domains						and Applying
Year 3							
3a Autumn 1 Key Knowledge: The composition of the Earth and its atmosphere and the processes occurring within them shape the Earth's surface and its climate	Chemistry	Rocks EM3.1 C togethe on the b physical EM3.2 C how fos things th trapped EM3.3 R made fr matter	Compare and group r different kinds of rocks pasis of their simple I properties Describe in simple terms sils are formed when hat have lived are I within rock Recognise that soils are om rocks and organic	I can: Describe how the main rock groups are formed Identify and the properties of the main rock groups Describe how fossils are formed Outline how soils are formed as rocks are eroded and organic matter decays	I can: Explain how the main rock groups are formed Identify and describe the properties of the main rock groups Explain how fossils are formed Explain how soils are formed as rocks are eroded and organic matter decays	I can: Create a guide to the main rock groups explaining how the way that they were formed determines their properties Generalise about how fossils are formed and reflect on how we can use fossils to help us understand how the world looked millions of years ago Summarise the process of erosion that turns rocks and organic matter into soil giving examples of different processes and soils	I can: Research and describe how the earth has changed over millennia
Key Skills: Identify, group and classify things according to observable properties Finding things out using secondary sources of information		Answer using di scientifi •Noticin similarit •Finding seconda informa Make sy observa measure Recordin scientifie labelled and tabl	scientific questions ifferent types of ic enquiry, including ng patterns, differences, cies or changes g things out using ary sources of tion. ystematic and careful tions and take accurate ements ng findings using simple c language, drawings, diagrams, bar charts les	I can: Answer scientific questions and give some reasons for my answers Carry out research to identify how rocks are formed and their different properties finding things out using secondary sources of information and observation	I can: Answer scientific questions and explain my reasoning Independently carry out research to identify how rocks are formed and their different properties finding things out using secondary sources of information and observation Record data using a range of diagrams, labels, graphs and classification keys	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Carry out scientific research independently noticing patterns, grouping and classifying things, finding things out using a range of secondary sources of information	Plan and carry out own research setting out your hypothesis and the rationale for your sources Present your information in new and different ways and evaluate the most appropriate approach

		Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Record data using diagrams, labels, graphs and classification keys Report findings and give reasons for my views based on my observations and research	Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	
		To compare and contrast different types of rock in terms of their suitability as building materials	I can: Draw and label a picture of a house to show how different types of rock are used in construction	I can: Draw and annotate a picture of a house to show how different types of rock are used in construction	I can: Evaluate why different rocks are used based on their properties	I can: Speculate about what would happen if we used the wrong materials in the wrong place and give examples
3b Autumn 2 Key Knowledge: Organisms require a supply of energy and materials for which they are often dependent on or in competition	Biology	Animals, including humans AH3.1 Identify that animals, including humans, need the right types and amounts of nutrition, and that they cannot make their own food, they get nutrition from what they eat AH3.2 Identify that humans and some animals have skeletons and muscles for support, protection and movement	I can: Identify the main food groups and explain their nutritional importance Describe how the body takes goodness from food and the importance of healthy eating Label a diagram of a human skeleton showing the main bones and the joints	I can: Distinguish the main food groups and explain their nutritional importance Explain how the body takes goodness from food Explain the importance of healthy eating Annotate a diagram of a human skeleton showing the main bones and the joints	I can: Create a guide to the major food groups and explain how each group contributes to our health and growth Evaluate why some foods are less healthy than others Summarise how our skeleton allows us to move giving examples of which joints and muscles allow us to lift objects, sit and run	Compare the human skeleton with another mammal and evaluate and explain the reasons for those differences
Key Skills: Finding things out using		Answer scientific questions using different types of scientific enquiry, including	l can: Answer scientific questions	I can: Answer scientific questions and explain my reasoning	l can: Formulate scientifically valid questions, explain my	Plan and carry out own research setting out your

secondary sources of information Recording findings using simple scientific language, drawings, labelled diagrams, bar charts and tables		 Noticing patterns, differences, similarities Finding things out using secondary sources of information. Gather, record and present data in a variety of ways to help in answer questions Recording findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions 	Carry out research to identify the different food groups using secondary sources of information Record data using diagrams, labels, graphs and classification keys Report findings and give reasons for my views based on my observations and research	Independently carry out research to identify the different food groups; finding things out using secondary sources of information Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	reasoning and use these to inform my investigations and research Carry out scientific research independently noticing patterns, grouping and classifying things, finding things out using a range of secondary sources of information Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	hypothesis and the rationale for your sources Present your information in new and different ways and evaluate the most appropriate approach
		To keep a food diary for a week and then identify the different food types they have eaten To create a hinged model of a person with moveable shoulders elbows hips and knees to show how joints help us move	I can: Sort the food I have eaten into the main food groups Create a jointed model of a person	I can: Classify the food I have eaten into the main food groups Create a jointed model of a person and explain how each joint works	I can: Evaluate my diet and consider whether I am eating food from all the main food groups Speculate on what happens when we damage a joint or break a bone in our body and how this restricts our movement	I can: Suggest some improvements to my diet in order to be healthy Reflect on how exercising our muscles helps support our joints
3c Spring 1 Objects can affect other objects at a distance	Physics	Forces and magnets FM3.1 Compare how things move on different surfaces FM3.2 Notice that some forces need contact between two objects and some forces act at a distance	I can: Describe how different surfaces affect the way objects move across them because of friction	I can: Explain how different surfaces affect the way objects move across them because of friction Explain what a force is and give examples of different forces	I can: Predict which surfaces will be easier to move an object over and explain my reasoning Summarise the different forces that exist and evaluate which	I can: Devise a way of moving a heavy object more easily across a rough surface and test out my theory

Changing the movement of an object requires a net force to be acting on it	FM3.3 Observe how magnets attract or repel each other and attract some materials and not others FM3.4 Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials FM3.5 Describe magnets as having two poles FM3.6 Predict whether two magnets will attract or repel each other, depending on which poles are facing	Describe what a force is and give examples of different forces Describe how magnets attract and repel each other Compare materials to identify which ones are magnetic and which ones are not	Explain how magnets attract and repel each other Compare materials to identify which ones are magnetic and which ones are not and explain why	ones require direct contact and which ones do not Generate a rule for when magnets will attract and repel each other Generalise about which materials are attracted to magnets and explain why	Identify how and where we use magnets in our homes
Key Skills: Setting up simple practical enquiries, Make systematic and careful observations and take accurate measurements	Answer scientific questions using different types of scientific enquiry, including •Noticing patterns, differences, similarities or changes •Finding things out using secondary sources of information. Setting up simple practical enquiries, Make systematic and careful observations and take accurate measurements Recording findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Using results to draw simple conclusions, make predictions	I can: Answer scientific questions Carry out a scientific investigation moving a heavy object across a variety of surfaces to understand the effect of friction; using the key skills of observation, testing, taking measurements, and using scientific equipment appropriately Record data using diagrams, labels, graphs and classification keys	I can: Answer scientific questions and explain my reasoning Carry out a scientific investigation moving a heavy object across a variety of surfaces to understand the effect of friction; using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Record data using a range of diagrams, labels, graphs and classification keys	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Plan, hypothesise about the likely outcome and carry out scientific investigation moving a heavy object across a variety of surfaces to understand the effect of friction: effectively using the key skills of observation, testing, considering variables, taking measurements, and use scientific equipment with increasing accuracy and precision	Plan and carry out own investigation setting out your hypothesis and the rationale for your investigative approach Provide guidance for others on how to use particular scientific equipment correctly Present your information in new and different ways and evaluate the most appropriate approach

		for new values suggest	Report findings and give	Report and present findings	Make informed choices on	
		improvements and raise further	roscons for my views	including:	how to record data using a	
		ausstions	hased on my observations	Soquencing, classifying	range of diagrams, labels	
		questions	based on my observations	sequencing, classifying,	araphs and classification kous	
			and research	comparing and contrasting,	graphs and classification keys	
				explain cause and effect and	and justify my decisions	
				Justity my views	Demant and anosant findings	
					Report and present findings	
					Including:	
					Generalising, predicting,	
					nypotnesising, theorising,	
					evaluating, reflecting,	
		Destant a start that the second form	l es es		Justifying	Leen test suit and
		Design a circuit with ramps for a	i can:	Company and contract	I can:	I can test out and
		different surfaces	Describe different	compare and contrast	Hypothesise why road surfaces	sequence amerent
		different surfaces	surfaces and use this	unierent surfaces and use this	are not smooth and predict	surfaces according
		T	knowledge to create a	knowledge to create a circuit	what would happen if they	to the degree of
		To create a game that uses	circuit for a model car	for a model car	were	friction on a model
		magnets to move the pieces	Describe now my game	Explain how my game works	Justify my design choices	car
		round the board	works		based on my knowledge of	
					magnets	
30	Physics	Light and shadow	I can:	I can:	I can:	I can design
Spring 2		LT3.1 Recognise that they need	Give reasons why we	Explain why we cannot see in	Generalise about how we need	clothing to protect
Кеу		light in order to see things and	cannot see in the dark	the dark	light to see	me from the sun
Knowledge:		that dark is the absence of light			Classify different materials in	and justify my
The total		LT3.2 Notice that light is	Describe how light travels	Explain how light travels	terms of what happens when a	choices based on
amount of		reflected from surfaces	through some objects and	through some objects and is	light hits them using the	what I have learnt
energy in the		LT3.3 Recognise that light from	is reflected by others	reflected by others	correct terminology	about light
universe is		the Sun can be dangerous and				
always the		that there are ways to protect	Describe how light from	Explain how light from the sun	Explain how sun glasses	
same but the		their eyes	the sun hurts our eyes	hurts our eyes and how we can	protect our eyes from the sun	I can create a
energy can be		LT3.4 Recognise that shadows	and how we can protect	protect them		sundial using
transformed		are formed when the light from	them	Explain how shadows are	Evaluate how a sun dial can be	shadows
when things		a light source is blocked by a	Describe how shadows	formed	used to tell the time	
change or are		solid object	are formed			
made to		LT3.5 Find patterns in the way				
happen.		that the size of shadows change				
Key Skills:		Answer scientific questions	l can:	I can:	l can:	Plan and carry out
		using different types of				own investigation
		scientific enquiry, including				

Sotting up	•Obsorving changes	Answer scientific	Answer scientific questions	Formulato scientifically valid	sotting out your
second		Answer scientific	Answer scientific questions		Setting out your
simple	•Noticing patterns, differences	questions about light	about light and explain my	questions, to find out more	nypotnesis and the
practical	and similarities		reasoning	about how light travels	rationale for your
enquiries,	•Finding things out using	Carry out scientific		through some materials and is	investigative
Make	secondary sources of	investigations effectively	Carry out scientific	reflected by others and explain	approach
systematic and		using the key skills of	investigations effectively using	my reasoning and use these to	
careful	Setting up simple practical	observation, testing,	the key skills of observation,	inform my investigations and	Provide guidance
observations	enquiries,	taking measurements,	testing, considering variables,	research	for others on how
and take	Make systematic and careful	and using scientific	taking measurements, and	Plan, hypothesise about the	to use particular
accurate	observations and take accurate	equipment appropriately	using scientific equipment	likely outcome and carry out	scientific
measurements	measurements		appropriately	scientific investigations	equipment
	Recording findings using simple			effectively using the key skills	correctly
	scientific language, drawings,			of observation, testing,	Present your
	labelled diagrams, bar charts			considering variables taking	information in new
	and tables	Record data using		measurements and use	and different ways
	Reporting on findings from	diagrams labels granhs	Record data using a range of	scientific equipment with	and evaluate the
	enquiries, including oral and	and classification kovs	diagrams labols graphs and	increasing accuracy and	most appropriate
	written explanations, displays or	and classification keys	elassification kovs		approach
	presentations of results and		classification keys	precision Maka informatikaka ing an	approach
	conclusions			Make informed choices on	
	Using results to draw simple	Report findings and give		how to record data using a	
	conclusions, make predictions	reasons for my views	Report and present findings	range of diagrams, labels,	
	for new values, suggest	based on my observations	including:	graphs and classification keys	
	improvements, and raise further	and research	Sequencing, classifying,	and justify my decisions	
	questions		comparing and contrasting,	Report and present findings	
			explain cause and effect	including:	
				Generalising, predicting,	
				hypothesising, theorising,	
				evaluating, reflecting,	
				justifying	
	To imagine what it is like in	l can:	I can:	I can:	I can create a dark
	complete darkness – how would	Describe how I would feel	Explain how I would feel in	Hypothesise on how blind	box to show how
	we move around?	in complete darkness and	complete darkness and how I	people need to use all their	we need light to
	Carry out a survey of the school	how I would use my other	would use my other senses to	senses to move around safely	see
	identifying opague and	senses to move around	move around	and reflect on what it would	
	transparent surfaces and	Survey the classroom to	Survey the classroom to	be like to move around the	
	reflective and non-reflective	see what hannens when	compare what happens when	classroom	
	surfaces	light hits different	light hits different surfaces and	Generalise about why we need	
	Surraces	surfaces and use this	use this information to surfair	to have a range of materials	
		surfaces and use this	use this information to explain	to have a range of materials	

			information to Describe	why some materials need to be	with different properties	
			why some materials need	transparent, opaque or	including transparency opacity	
			to be transparent,	reflective	and reflectivity	
			opaque or reflective			
Зе	Biology	Plants	l can:	l can:	l can:	l can:
Summer 1		PL3.1 Identify and describe the	Describe the functions of	Explain the functions of	Summarise the key functions	Explain the
Кеу		functions of different parts of	different parts of a	different parts of a flowering	of the different parts of a	importance to
Knowledge:		flowering plants: roots, stem,	flowering plant	plant	flowering plant and show this	plants of
Organisms		leaves and flowers			on examples of different	pollinating insects
require a		PL3.2 Explore the requirements	Describe what plants	Analyse what plants need to	flowering plants	such as bees
supply of		of plants for life and growth (air,	need to grow	grow		
energy and		light, water, nutrients from the			Create a guide to keeping	
materials for		soil, and room to grow) and how	Describe how water is	Explain how water is absorbed	plants healthy based on my	
which they are		they vary from plant to plant	absorbed and transported	and transported in plants	knowledge of what plants	
often		PL3.3 Investigate the way in	in plants		need to grow	
dependent on		which water is transported		Describe and explain the life		
or in		within plants	Describe the life cycle of a	cycle of a plant	Compare the life cycle of two	
competition		PL3.4 Explore the role of flowers	plant		contrasting plants and give	
with other		in the life cycle of flowering			reasons for their differences	
organisms		plants, including pollination,			(pollination and distribution)	
		seed formation and seed				
		dispersal				
Key Skills:		Answer scientific questions	I can:	l can:	l can:	Plan and carry out
Setting up		using different types of scientific	Answer scientific	Answer scientific questions and	Formulate scientifically valid	own investigation
simple		enquiry, including	questions	explain my reasoning	questions, explain my	setting out your
practical		 Observing changes over a 			reasoning and use these to	hypothesis and the
enquiries,		period of time,	Carry out research to		inform my investigations and	rationale for your
Using results		 Noticing patterns, differences, 	identify patterns using	Carry out research to identify	research	investigative
to draw simple		similarities or changes	secondary sources of	patterns and classify living		approach
conclusions,		 Finding things out using 	information	things finding things out using	Carry out scientific research	
make		secondary sources of	Record data using	secondary sources of	independently noticing	Provide guidance
predictions for		information.	diagrams, labels, graphs	information	patterns, grouping and	for others on how
new values,		Setting up simple practical	and classification keys		classifying things, finding	to use particular
suggest		enquiries,			things out using a range of	scientific
improvements,		Make systematic and careful		Record data using a range of	secondary sources of	equipment
and raise		observations and take accurate	Report and present	diagrams, labels, graphs and	information	correctly
further		measurements	findings and give reasons	classification keys		
questions			for my views based on my			

		Recording findings using simple	observations and		Make informed choices on	Present your
		scientific language, drawings,	research	Report and present findings	how to record data using a	information in new
		labelled diagrams, bar charts		including:	range of diagrams. labels.	and different ways
		and tables		Sequencing, classifying,	graphs and classification keys	and evaluate the
		Reporting on findings from		comparing and contrasting,	and justify my decisions	most appropriate
		enquiries, including oral and		explain cause and effect and		approach
		written explanations, displays or		justify my views	Report and present findings	
		presentations of results and			including:	
		, conclusions			Generalising, predicting,	
		Using results to draw simple			hypothesising, theorising,	
		conclusions, make predictions			evaluating, reflecting.	
		for new values, suggest			iustifving	
		improvements, and raise further			,, 0	
		questions				
		Apply their knowledge of plants	l can:	I can:	I can:	l can:
		to create the ideal growing	Describe the conditions a	Explain the conditions a plant	Create a growing kit with	Place plants in a
		conditions for a plant in the	plant needs to grow and	needs to grow and what	instructions on how to grow	range of different
		classroom, plant and grow	what happens when	happens when those	your plant successfully	growing conditions
		observing the whole life cycle of	those conditions change	conditions change		and predict how
		the plant				these conditions
						will affect their
						growth
Year 4						
4a	Biology	Animals, including humans	l can:	I can:	I can:	l can:
Autumn 1		AH4.1 Describe the simple	Draw and label a diagram	Draw an annotated diagram to	Create a diagram of our	Create an advice
Кеу		functions of the basic parts of	to show how food is	show how food is processed	digestive system to explain	sheet on keeping
Knowledge:		the digestive system in humans	processed through our	through our digestive system	how food is broken down at	your teeth healthy
Organisms		AH4.2 Identify the different	digestive system		each stage to extract nutrients	
require a		types of teeth in humans and		Explain how our teeth help us	from our food	
supply of		their simple function	Describe how our teeth	to eat different types of food		Hypothesise what
energy and		AH4.3 Construct and interpret a	help us to eat different		Summarise how our teeth help	would happen if
materials for		variety of food chains,	types of food	Identify the living things that	us to eat different types of	part of a food
which they are		identifying producers, predators		make up a food chain and	food and explain why this is	chain was
often		and prey	Identify the living things	explain their role in the process	important for a balanced diet	disrupted using my
dependent on			that make up a food chain			knowledge of local
or in			and describe their role in		Generalise about the	wild life as an
competition			the process		interdependency of living using	example (i.e. what
with other					examples of typical food chains	happens to garden
organisms						birds when an area

					is built on and
					there is no plant
					life)
Key Skills:	Answer scientific questions	l can:	I can:	I can:	Plan and carry out
Setting up	using different types of	Answer scientific	Answer scientific questions and	Formulate scientifically valid	own research
simple	scientific enquiry, including	questions	explain my reasoning	questions, explain my	setting out your
practical	 Observing changes over a 			reasoning and use these to	hypothesis and the
enquiries,	period of time,	Carry out research to	Independently carry out	inform my investigations and	rationale for your
Using results	 Noticing patterns, differences, 	identify how our digestive	research to identify how our	research	sources
to draw simple	similarities or changes	system works using	digestive system works; finding		
conclusions,	 Finding things out using 	secondary sources of	things out using secondary	Carry out scientific research to	
make	secondary sources of	information	sources of information	identify how our digestive	Present your
predictions for	information.	Observe and identify our	Observe and classify our teeth	system works; independently	information in new
new values,	Gather, record and present data	teeth according to shape	according to shape and	using a range of secondary	and different ways
suggest	and a variety of ways to help in	and function	function	sources of information	and evaluate the
improvements,	scientific language drawings				most appropriate
and raise	labelled diagrams har charts	Record data using	Record data using a range of	Carry out observations of my	approach
further	and tables	diagrams, labels, graphs	diagrams, labels, graphs and	own teeth to identify the	
questions	Reporting on findings from	and classification keys	classification keys	different types and functions,	
	enquiries, including oral and		Report and present findings	including how I eat/chew	
	written explanations, displays or	Report findings and give	including:	different foods	
	presentations of results and	reasons for my views	Sequencing, classifying,		
	conclusions	based on my observations	comparing and contrasting,	Make informed choices on	
		and research	explain cause and effect and	how to record data using a	
			justify my views	range of diagrams, labels,	
				graphs and classification keys	
				and justify my decisions	
				Report and present findings	
				including:	
				Generalising, predicting,	
				hypothesising, theorising,	
				evaluating, reflecting,	
				justifying	
	Create a balanced diet including	l can:	I can:	I can:	I can:
	all the key nutrition they need	Plan out a diet for a day	Plan out a diet for a day and	Summarise the key ingredients	Create a "healthy
	to grow and be healthy	and describe the food	explain the food groups I have	of a healthy diet and explain	diet" quiz to
		groups I have used, using	used, using my knowledge of		prompt children to

4b Autumn 2 Key Knowledge: All material in the universe is made of very small particles.	Chemistry	States of matter EM4.1 Compare and group materials together, according to whether they are solids, liquids or gases EM4.2 Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius EM4.3 Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	my knowledge of the nutrients we need to be healthy from Y3 I can: Identify and describe the difference between solids, liquids and gasses and give examples Describe what happens to different materials when they are heated and cooled Describe how different materials change state at different temperatures and give examples Draw and label a diagram to show how water changes from a liquid to a gas and back again within the water cycle	the nutrients we need to be healthy from Y3 I can: Identify and explain the difference between solids, liquids and gasses and give examples Explain what happens to different materials when they are heated and cooled Explain that different materials change state at different temperatures and give examples Annotate a diagram to show how water changes from a liquid to a gas and back again within the water cycle	 what happens if we eat too much of the wrong foods I can: Summarise the properties of solids liquids and gases and create a chart to help me classify everyday materials I can generalise about what happens to different materials when the are heated or cooled and how we can use this knowledge for example in cooking I design a diagram/ model to explain how water changes state to create the water cycle 	think more carefully about the food they eat I can: Reflect on how we use changes in matter to make new things (glass, metal, plastics, ice) Generalise about the importance of the water cycle and reflect on how too much water or too little water impacts on our lives
Key Skills: Finding things out using secondary sources of information. Gather, record and present data in a variety of ways to help in answer questions using simple scientific language		Answer scientific questions using different types of scientific enquiry, including •Observing changes over a period of time, •Noticing patterns, differences, similarities or changes •Finding things out using secondary sources of information. Setting up simple practical enquiries, Make systematic and careful observations Recording findings using simple scientific language, drawings,	I can: Answer scientific questions Carry out scientific investigations into what happens when materials are heated or cooled; effectively using the key skills of observation, testing, taking measurements, and using scientific equipment appropriately	I can: Answer scientific questions and explain my reasoning Independently carry out scientific investigations into what happens when materials are heated or cooled; effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Plan, hypothesise about the likely outcome and carry out scientific investigations into what happens when materials are heated or cooled; effectively using the key skills of observation, testing, considering variables, taking measurements, and use scientific equipment with	Plan and carry out own investigation setting out your hypothesis and the rationale for your investigative approach Provide guidance for others on how to use particular scientific equipment correctly

		labelled diagrams, bar charts and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Carry out research into how different materials change when they are heated or cooled using secondary sources of information Record data using diagrams, labels, graphs and classification keys Report findings and give reasons for my views based on my observations and research	Carry out research into how different materials change when they are heated or cooled using secondary sources of information Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	increasing accuracy and precision Carry out scientific research independently to find out what happens to a range of different materials when they are heated or cooled; using a range of secondary sources of information Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting,	Present your information in new and different ways and evaluate the most appropriate approach
		To identify gasses liquids and solids in the home and describe where we would see evidence of evaporation and condensation	I can: Describe the range of solids liquids and gasses in our home and give examples of where we change them (cooking, steam iron/cleaner, ice cubes_chocolate)	I can: Explain the range of solids liquids and gasses in our home and give examples of where we change them (cooking, steam iron/cleaner, ice cubes, chocolate)	justifying I can: Generalise about how we use changes in the state of matter to make new things and give a range of examples	l can: Research and explain how a steam engine works.
4c Spring 1 Key Knowledge: The diversity of organisms living and extinct, is the result of evolution	Biology	Living things and their habitats ALT4.1 Recognise that living things can be grouped in a variety of ways ALT4.2 Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	I can: Use a classification key to group animals found in the UK according to their observable features Describe how a classification key helps us to distinguish between different groups of living things	I can: Independently use a classification key to group animals found in the UK according to their observable features Explain how a classification key helps us to distinguish between different groups of living things	I can: Classify animals in the UK based on their observable characteristics and explain how the key helps us understand the similarities and differences between groups Summarise the factors that might impact on a local river	I can: Write a persuasive text to the local council asking them to preserve our rivers and streams and explain some of the dangers and how they might

	ALT4.3 Recognise that	Using the example of a	Using the example of a local	and explain their impact on the	affect the wildlife
	environments can change and	local river I can describe	river I can explain how living	creatures that live there	there
	that this can sometimes pose	how living things are	things are interdependent and		
	dangers to living things	interdependent and why	why changes to their habitat		
		changes to their habitat	can pose dangers		
		can pose dangers			
Key Skills:	Answer scientific questions	I can:	I can:	l can:	Plan and carry out
Identify group	using different types of	Answer scientific	Answer scientific questions and	Formulate scientifically valid	own research
and classify	scientific enquiry, including	questions	explain my reasoning	questions explain my	setting out your
things	•Observing changes over a	Carry out research to	Independently carry out	reasoning and use these to	by not basis and the
according to	period of time	identify nattorns and	research to identify patterns	inform my investigations and	rationale for your
observable	•Noticing patterns, differences,	clossify animals finding	and close if a nimela finding	research	
properties	similarities or changes			research	sources
Noticing	•Finding things out using		things out using secondary		
patterns.	secondary sources of	secondary sources of	Sources of information	carry out scientific research	Dessention
differences.	information.	Information	Record data using a range of	independently noticing	Present your
similarities or	Gather, record and present data	Record data using	diagrams, labels, graphs and	patterns, grouping and	Information in new
changes	in a variety of ways to help in	diagrams, labels, graphs	classification keys	classifying things, finding	and different ways
	answer questions using simple	and classification keys		things out using a range of	and evaluate the
	scientific language, drawings,		Report and present findings	secondary sources of	most appropriate
	labelled diagrams, bar charts	Report and present	including:	information	approach
	and tables	findings and give reasons	Sequencing, classifying,		
	Reporting on findings from	for my views based on my	comparing and contrasting,	Make informed choices on	
	enquiries, including oral and	observations and	explain cause and effect and	how to record data using a	
	written explanations, displays or	research	justify my views	range of diagrams, labels,	
	presentations of results and			graphs and classification keys	
	conclusions			and justify my decisions	
				Report and present findings	
				including:	
				Generalising, predicting,	
				hypothesising, theorising,	
				evaluating, reflecting,	
				justifying	
	Create an identification key for	l can:	I can:	I can:	I can:
	garden birds using the	Create a simple	Create a simple identification	Research the main types of	Explain how
	conventions of classification	identification key for	key for common garden birds	birds found in our gardens	different groups of
	(set up a bird table outside the	, common garden birds	and give reasons for my	based on their observable	birds feed on
	classroom or a feeder on the		classification	features including bill shape	different foods and

4d Summer 1 Key Knowledge: The total amount of energy in the universe is always the same but the energy can be transformed when things change or are made to happen.	Physics	window and see which birds they can identify) Sound SND4.1 Identify how sounds are made, associating some of them with something vibrating SND4.2 Find patterns between the pitch of a sound and features of the object that produced it SND4.3 Find patterns between the volume of a sound and the strength of the vibrations that produced it SND 4.4 Recognise that sounds get fainter as the distance from the sound source increases	I can: Describe how sound is made by vibrations and give examples Describe how and why the pitch varies based on the speed of the vibrations Describe why some sounds are loud and others are quiet Describe why sound gets fainter as the distance from the source increases	I can: Explain how sound is made by vibrations and give examples Explain how and why the pitch varies based on the speed of the vibrations Explain why some sounds are loud and others are quiet Explain why sound gets fainter as the distance from the source increases	and create an identification key to help others recognise them I can: Summarise how sound is made by waves and what happens when they pass through different materials Predict how we can change the pitch of the sound by changing the way materials vibrate Summarise and explain how we can create louder or softer sounds and why sounds get fainter when they are further away	how we can use this knowledge to provide for a wide variety of birds in our gardens I can: Using diagrams to explain how our ears hear sound
Key Skills: Setting up simple practical enquiries, Make systematic and careful observations		Answer scientific questions using different types of scientific enquiry, including •Noticing patterns, differences, similarities or changes •Finding things out using secondary sources of information. Setting up simple practical enquiries, Make systematic and careful observations Recording findings using simple scientific language, drawings, labelled diagrams, bar charts and tables	I can: Answer scientific questions Carry out scientific investigations into how sound is created and how it can be varied; effectively using the key skills of observation, testing, taking measurements, and using scientific equipment appropriately Record data using diagrams, labels, graphs and classification keys	I can: Answer scientific questions and explain my reasoning Independently carry out scientific investigations into how sound is created and how it can be varied; effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Plan, hypothesise about the likely outcome and carry out scientific investigations into how sound is created and how it can be varied: effectively using the key skills of observation, testing, considering variables, taking measurements, and use	

		Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Report and present findings and give reasons for my views based on my observations and research	Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	scientific equipment with increasing accuracy and precision Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	
		Design and make an instrument and explain the reasons for your choices and explain how it makes its sound	I can: Design and make an instrument and give reasons for my choices	I can: Design and make an instrument and explain the reasons for my choices	I can: Create an instrument that has varying pitch and loudness and justify my choices based on my understanding of how sound is made	I can: Compare the similarities and differences between stringed, wind and percussion instruments
4e Summer 2 Key Knowledge: The total amount of energy in the universe is always the same but the energy can be transformed	Physics	Electricity ELEC4.1 Identify common appliances that run on electricity ELEC4.2 Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers ELEC4.3 Identify whether or not a lamp will light in simple series circuit based on whether or not	I can: Draw and label a diagram of the inside of a home to show all the appliances that use electricity Follow a circuit diagram to create a circuit and describe how electricity passes round it	I can: Annotate a diagram of the inside of a home to show all the appliances that use electricity Follow a circuit diagram to create a circuit and explain how electricity passes round it Explain why a lamp will not light if the switch is off	I can: Generalise about the importance of electricity in our every-day lives. Design a circuit using a circuit diagram and symbols for the components including a range of devices and switches and explain how it works	I can: Reflect on what our lives would be like without electricity (possible link to literacy diary of a day without electricity or dramatized account of a power

when things	the lamp is part of a complete	Describe why a lamp will	Compare different metals to	Evaluate why some materials	cut – how would
change or are	loop with battery	not light if the switch is	test whether or not they are	are used in electrical circuits	we cope
made to	ELEC4.4 Recognise that a switch	off	good conductors and sequence	based on their conductivity	
happen.	opens and closes a circuit and	Compare different metals	them in order of conductivity		
	associate this with whether or	to test whether or not			
	not a lamp lights is simple series	they are good conductors			
	circuit				
	ELEC4.5 Recognise some				
	common conductors and				
	insulators and associate metal				
	with being good conductors				
Key Skills:	Answer scientific questions	l can:	I can:	I can:	Plan and carry out
Finding things	using different types of scientific	Answer scientific	Answer scientific questions and	Formulate scientifically valid	own investigation
out using	enquiry, including	questions	explain my reasoning	questions, explain my	setting out your
secondary	 Finding things out using 	Carry out scientific	Carry out scientific	reasoning and use these to	hypothesis and the
sources of	secondary sources of	investigations into how	investigations into how	inform my investigations and	rationale for your
information.	information.	electricity passes round a	electricity passes round a	research	investigative
Setting up	Setting up simple practical	circuit and what happens	circuit and what happens if the		approach
simple	enquiries,	if the circuit is broken	circuit is broken: effectively	Plan, hypothesise about the	
practical	Make systematic and careful	using the key skills of	using the key skills of	likely outcome and carry out	Provide guidance
enquiries,	observations	observation, testing,	observation, testing,	scientific investigations how	for others on how
	Recording findings using simple	taking measurements,	considering variables, taking	electricity passes round a	to use particular
	scientific language, drawings,	and using scientific	measurements, and using	circuit and what happens if the	scientific
	labelled diagrams, bar charts	equipment appropriately	scientific equipment	circuit is broken; effectively	equipment
	and tables	Carry out scientific	appropriately	using the key skills of	correctly
	Reporting on findings from	investigations into how	Carry out scientific	observation, testing,	
	enquiries, including oral and	different metals conduct	investigations into how	considering variables, taking	Present your
	written explanations, displays or	electricity using the key	different metals conduct	measurements, and use	information in new
	presentations of results and	skills of observation,	electricity: effectively using the	scientific equipment with	and different ways
	conclusions	testing, taking	key skills of observation,	increasing accuracy and	and evaluate the
	Using results to draw simple	measurements, and using	testing, considering variables,	precision	most appropriate
	conclusions, make predictions,	scientific equipment	taking measurements, and	Plan, hypothesise about the	approach
	suggest improvements, and	appropriately	using scientific equipment	likely outcome and carry out	
	raise further questions	Record data using	appropriately	scientific investigations into	
		diagrams, labels, graphs	Record data using a range of	how different metals conduct	
		and classification keys	diagrams, labels, graphs and	electricity; effectively using the	
		Report and present	classification keys	key skills of observation,	
		findings and give reasons		testing, considering variables,	

		for my views based on my	Report and present findings	taking measurements, and use	
		observations and	including:	scientific equipment with	
		research	Sequencing, classifying,	increasing accuracy and	
			comparing and contrasting.	precision	
			explain cause and effect and	Make informed choices on	
			justify my views	how to record data using a	
			5 , 7	range of diagrams. labels.	
				graphs and classification keys	
				and justify my decisions	
				Report and present findings	
				including:	
				Generalising, predicting,	
				hypothesising, theorising,	
				evaluating, reflecting,	
				justifying	
	Carry out a survey of the school	l can:	I can:	I can:	l can:
	to identify all the things that use	Record all the devices in	Research and record all the	Classify appliances into	Write a persuasive
	electricity	the school that use	devices in the school that use	essential and non-essential	letter to the head
	Debate how we could save	electricity	electricity	and give reasons for my views	teacher asking her
	electricity in school to inform a	Describe ways in which	Explain ways in which we	Reflect on how we could save	to support your
	poster campaign "Switch off to	we waste electricity in	waste electricity in school	electricity in school to create a	drive to save
	save the planet"	school		poster campaign	energy; justifying
					your reasons and
					explaining the
					benefits to the
					school