## **Science Overview**

National Curriculum Coverage, Progression in Skills and Knowledge and Supporting Resources/Schemes of Work

### **EYFS**

	3 & 4-year-olds will be learning to:	Children in Reception will be learning to:	ELG
Understanding the World	Use all their senses in hands -on exploration of natural materials.  Explore collections of materials with similar and or/different properties.  Explore how things work.  Plants seeds and care for growing plants.  Understand the key features of a life cycle of a plant and an animal.  Begin to understand the need to respect and care for the natural environment and all living things.	<ul> <li>Explore the natural world around them.</li> <li>Describe what they see, hear, smell and feel whilst outside.</li> <li>Recognise some similarities and differences between life in this country and life in other countries.</li> <li>Recognise some environments that are different to the one in which they live.</li> <li>Understand the effect of changing seasons on the natural world around them.</li> </ul>	<ul> <li>The Natural world</li> <li>Explore the natural world around them, making observations and drawing pictures of animals and plants.</li> <li>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</li> <li>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>

<ul> <li>Working</li> <li>Scientifically</li> <li>Use simple questions and recognise that they can be answered in different ways</li> <li>Use simple equipment to observe closely</li> <li>Perform simple tests</li> <li>Identify and classify</li> <li>Use his/her observations and ideas to suggest answers to questions</li> <li>Gather and record data to help in answering questions</li> </ul>									
Theme	National Curriculum	Progression in Skills	Disciplinary Concepts	Key Questions	Key Facts	Key Vocab	Drivers & 50 things	British Values & Protective Characteristics	Schemes/Resources/ Texts
Autumn	Pupils should be taught to	Materials	Asking Questions	What are the properties	Objects are made	Metal	Skipton Castle		The King who Banned
	distinguish between an object		Children will ask	of materials?	from materials such	Attract			the Dark
Castles	and the material from which it is	Distinguish between an	simple questions		as wood, fabric,	Repel	Building castles		
	made.	object and the material	about different	How can we change the	glass, metal,	Wood	using materials in		Outstanding science
Naming and	They will identify and name a	from which it is made	materials	shape of materials?	cardboard, plastic	Plastic	the playground.		Hamilton trust
identifying	variety of everyday materials, including wood, plastic, glass,	Identify and name a	Sotting up tosts	What changes can you	or clay.	Glass Fabric	Dlay out in snow		Science folder
Materials	metal, water and rock.	variety of everyday	Setting up tests Children will verbally	What changes can you see in Autumn and	Some materials are	Magnetic	Play out in snow.		resources
	They will describe the simple	materials, including	state what they are	Winter?	magnetic.	Rough	Gardening		
	physical properties of a variety of	wood, plastic, glass,	going to investigate.	Willies:	magnetic.	Smooth	(outdoor learning)		
	everyday materials and compare	metal, water, and rock.	going to investigates	What happens to	Autumn is one of	Bending	(00:0001100111118)		
	and group together a variety of		Observing and	animals in Autumn and	the four seasons of	Squashing	Create leaf		
	everyday materials on the basis	Describe the simple	Measuring	Winter?	the year	Twisting	monsters		
	of their simple physical	physical properties of a	Children will observe		,	Stretching			
	properties.	variety of everyday	closely the differences		The coldest	Brittle	50 things: Jump in		
		materials	between materials		temperatures of	Absorbent	Muddy Puddles		
		Seasonal Changes				Waterproof			

Seasonal Changes	Seasonal Changes  Pupils should be taught to observe changes across the four seasons and describe weather associated with the seasons and how day length varies.	Observe changes across the four seasons.  Observe and describe weather associated with the seasons	Carry out simple tests using nonstandard measurements when appropriate.  Recording Children will gather and record simple data.  Sort objects and living things into groups based on simple properties.  Interpreting Results Children will explain what they found out to an adult or a partner.	movement of the Earth around the Earth. Fact: Earth about its axis  Materials  1. Misconception: Conf Fact: The differences be definitions of the terms emphasised to pupils. If material to withstand s material to support a hipiece of chalk which is one of the Earth around the Earth area.	the year are in winter.  ones:  ohenomenon of day and a around the Sun or the range of the course of	novement of the Sun by the rotation of the and strength age and the scientific h' should be rs to the ability of a efers to the ability of a ing or tearing. Thus, a	50 things: Collect pine cones  50 things build a den		
Oracy opportunities for Autumn term	End of topic discussion: Which ma	 terial is the best to build a c	castle?						
Eco Warriors  Animals including Humans	Pupils should be taught to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.  They will identify and name a variety of common animals that are carnivores, herbivores and omnivores.  Pupils will describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).  They will identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Animals Including Humans Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.  Identify and name a variety of common animals that are carnivores, herbivores and omnivores.  Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Asking Questions Children will ask simple questions about the differences between a variety of common animals.  Making Predictions Children will predict and sort a variety of health and unhealthy foods  Setting up tests Children will  Observing and Measuring Children will observe the differences between plant life during the different	What senses do humans have?  How do humans change as they get older?  What are the basic needs of humans?  What do humans need to do to stay healthy?  What happens to the environment in Spring?	The five senses are smell, touch, hear, feel and taste.  Exercising is good for humans.  Spring is the season when plants start to grow again.	Senses Amphibians Reptiles Mammals Carnivore Herbivore Omnivore Adults Air Hygiene	Healthy Nutrition  STEM visit Careers/ Aspirations/science week  Rethink food indoor garden  Gardening (outdoor learning)  Spring Walk	Age: Dear Earth- Grandad and granddaughter Grandad was an explorer.	Dear Earth by Isabel Otter  Now Press Play  Outstanding science Hamilton trust Science folder resources
Seasonal Changes		Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.  Describe the basic needs of animals,	seasons  Recording Children will record the changes photographically in seasonal change						

		including humans, for		Possible Misconceptio	nc·			
		survival (water, food		Animals	115.			
		and air).			cean creatures are 'fish',	e.g. whales, dolphins.		
				1	, jellyfish and shellfish are			
		Describe the		and sea dragons are fis				
		importance for humans						
		of exercise, eating the						
		right amounts of						
		different types of food,						
		and hygiene.						
	Seasonal Changes	Seasonal Changes						
		Observe changes across						
	Pupils should be taught to ide observe changes across the four	the four seasons.						
	seasons and describe weather	Observe and describe						
	associated with the seasons and	weather associated with						
	how day length varies.	the seasons and how						
		day length varies						
Oracy	Every	<b>one's an expert</b> : How an	n I different from and el	lderly? (From the point	of view of a child)			
opportunities								
for spring term		T	T	T	T	T	T	
Summer	Plants	Plants	Asking Questions	What are the	The four seasons are	Wild	Now press play-	Now Press Play-
	Dunile should be tought to	Identify and describe	Children will ask	common, wild and	Spring, Summer,	Deciduous	seasonal changes.	Habitats
Incredible India	Pupils should be taught to:	Identify and describe the basic structure of a	questions about the features and	garden plants and trees?	Autumn and Winter.	Evergreen		Outstanding science
	identify and name a variety of	variety of common	structures of a variety	trees:	Flowers are made up		Planting and	Hamilton trust
Plants	common wild and garden plants,	flowering plants,	of common plants.	What are the four	of roots, stems leaves		growing plants in	Science folder
	including deciduous and	including trees.	·	seasons?	and flowers.		classroom and	resources
	evergreen trees		Making Predictions				outdoors.	
	identify and describe the basic	Identify and name a	Children will make	How does the	Plants need water,			
	structure of a variety of common	variety of common wild	predictions of what	weather change in	nutrients and sunlight			
	flowering plants, including trees.	and garden plants,	will happen to plants	these four seasons?	to grow.		50 things: Roll	
		including deciduous and evergreen trees.	placed in different areas such windowsill	What are garden and	Summer usually is the		down a grassy hill	
		evergreen trees.	or closed cupboard.	wild plants?	hottest of the four			
			or closed cappoard.	Wild plants:	seasons.			
			Setting up tests	What is a flower				
Seasonal	Seasonal Changes		Children will verbally	made up of?				
Changes		Seasonal Changes	state what they are					
Changes	Pupils should be taught to		going to investigate	What do plants need				
	observe changes across the four	Observe changes across		to grow?				
	seasons and describe weather	the four seasons.	Children will design	Dossible Missansantia	<u> </u>	1		
	associated with the seasons and how day length varies.	Observe and describe	investigation for testing what will	Possible Misconception Plants	115.			
	now day length varies.	weather associated with	happen when plants		s are not plants. Fact: Tre	es are plants.		
		the seasons and how	are placed in different		and the plants i doct ite	. 12 a. 6 p.a.(60)		
		day length varies	places.	2.Misconception: Many	y flowering plants have b	een mistaken to be		
					ue to inconspicuous flow			
			Observing and	_	s and liverworts, ferns an			
			Measuring	flowering plants. Most	other plants are flowering	ng plants.		
			Children will observe					
			the differences					
		1	between plant life					

	Inte Chil wha to a	cording ildren will record c changes otographically in asonal change  erpreting Results ildren will explain at they found out an adult or a		
		an adult or a rtner.		
Oracy opportunities for summer	speech on the chosen habitat			

Working Scientifically	<ul> <li>Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum</li> <li>Use simple equipment to observe closely including changes over time</li> <li>Perform simple comparative tests</li> <li>Identify, group and classify</li> <li>Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns</li> <li>Gather and record data to help in answering questions including from secondary sources of information</li> </ul>										
Theme	National Curriculum	Progression in Skills	Disciplinary Concepts	Key Questions	Key Facts	Key Vocab	Drivers & 50 things	British Values & Protective Characteristics	Schemes/Resources/ Texts		
Autumn  History of Flight  Animals including humans	Pupils should be taught to:  To notice that animals, including humans, have offspring which grow into adults  To find out about and describe the basic needs of animals, including humans, for survival (water, food and air)  To describe the importance for humans of exercise, eating the	Animals Including Humans  Understand that animals, including humans, have offspring which grow into adults  Describe the basic needs of animals, including humans, for survival (water, food and air)  Describe the importance for humans	Asking Questions Children will ask simple questions and recognise that they can be answered in different ways  Making Predictions Children will make predictions about the basic needs for animals including humans  Setting up tests Children will set up a	What do animals need to help them survive?  How do humans change as they get older?  What are the offspring of animals called?  What is a bulb?  What do plants need to survive?	Animals and human beings need food, water, air, and shelter to survive.  Humans can only survive without water for three days.	Bulb Survival Temperature Toddler Teenager Elderly Offspring	Autumn walk- What happens to plants in Autumn and why?  Planting out Autumn bulbs to create a Spring daffodil display Autumnal maths outside -making 2- digit number using acorns or concerns as ones and sticks	Age Pregnancy	Cherry Blossom and Paper Planes  Kites  Outstanding science Hamilton trust Science folder resources		

	wight amounts of different trues	wight amounts of	bat bannanata thair	Descible Missensentie					I
	right amounts of different types	right amounts of	what happens to their	Possible Misconceptio	ns:		FO this control		
Plants	of food, and hygiene	different types of food,	heart rate when they	Plants	and the second second	1 1 1 1 1 1 1	50 things: Look		
		and hygiene	exercise	•	erals in the soil, water an		after a pet		
					lants make their own foo	•	FO things. Kiek the		
			Observing and	ļ '	th. Water and carbon did	oxide are ingredients for	50 things: Kick the		
		<u>Plants</u>	Measuring	photosynthesis.			Autumn leaves		
	Plants		Children will use stop						
		Observe and describe	watches and	2.Misconception: Roo	ts are organs for feeding	. Fact: Roots absorb	50 things: Grow		
		how seeds and bulbs	stethoscope to listen	minerals and water for	the plants. Minerals and	d water are not food	some daffodils		
	Pupils should be taught to:	grow into mature	to and time heart rate	for plants.					
	Tupiis siloulu se taugiit to.	plants.							
	To observe and describe how		Children will observe	3.Misconception: Leav	es take in water; the mai	in function of leaves is			
		Find out and describe	and describe how	to capture rain, water	or dew; water vapour m	oves into the leaf			
	seeds and bulbs grow into mature	how plants need water,	seeds and bulbs grow	during photosynthesis.	. Fact: Roots take in wate	er. The main function of			
	plants	light and a suitable	and mature	leaves is to carry out p	hotosynthesis.				
		temperature to grow			•				
	To find out and describe how	and stay healthy	Recording						
	plants need water, light and a	, ,	Children will record						
	suitable temperature to grow and		the changes in their						
	stay healthy		heart rate						
	Stay Healthy								
			Interpreting Results						
			Children will explain						
			how their body						
			changed during						
			exercise.						
			CACTUISC.						
			Evaluating						
			Children will evaluate						
			how they could have						
			improved their test.						
Oracy	Just a minute: Presenting one of the	e groups of animals (Amph	<u> </u>	ntiles)					
-	sast a minate. Tresenting one of the	e groups of animals (Ampir	1010113, 1110111111013, 011 03, 10	ptilesy					
opportunities	Each member of the group will have	e one minute to talk about	a subject. They will have t	ime to prepare but will	only have one minute to	talk ahout it without say	/ing.um er reneating t	themselves or naus	sing to remember You
for Autumn	could add competition to the game			inie to prepare, but wiii	offiny flave offe fillitute to	taik about it without say	ying um, er, repeating i	inemserves or paus	sing to remember. Tou
Term			-	T	1				
Spring	Materials	Materials	Asking Questions	What materials are	Seeds need to wait	Material	Now Press Play-		BBC Bitesize
			Children will ask	strong?	for conditions to be	Properties	Materials		
	Pupils should be taught to identify	Compare and group	simple questions and		just right before they	Sprout			Outstanding science
My Country	and compare the suitability of a	together a variety of	recognise that they	What materials are	start to grow.		Material hunt		Hamilton trust
My City	variety of everyday materials,	everyday materials on	can be answered in	weak?			outside		Science folder
,,	including wood, metal, plastic,	the basis of their simple	different ways		Bulbs can sprout new				resources
	glass, brick, rock, paper and	physical properties		How are bulbs	growth.		50 things: Build a		
Naha:::-!-	cardboard for particular uses.		Making Predictions	different from seeds?			snowman		
Materials		Identify and compare	Children will make						
	They will find out how the shapes	the suitability of a	simple predictions as				50 things: Have a		
	of solid objects made from some	variety of everyday	to what will happen to				snowball fight		
	materials can be changed by	materials, including	a solid material when						
	squashing, bending, twisting and	wood, metal, plastic,	squashing, bending,				STEM visit Careers/		
	stretching.	glass, brick, rock, paper	twisting and				Aspirations/science		
Plants		and cardboard for	stretching.				week		
		particular uses							
	Plants		Setting up tests				Planting and		
							growing plants in		
	1	ı	L	1	I	I.	10 - 0 P		1

<b>-</b>									
		Describe how the	Children will. Identify	Possible Misconceptio	ns:		classroom and		
	Pupils should be taught to	shapes of solid objects	what they will change	Plants			outdoors.		
	observe and describe how seeds	made from some	and keep the same.	1.Misconception: Mine	erals in the soil, water an	d carbon dioxide are			
	and bulbs grow into mature	materials can be		-	lants make their own foo				
		changed by squashing,	Observing and	1	th. Water and carbon dio	·			
	plants.	bending, twisting and	Measuring	photosynthesis.	in. Water and carbon dio	vide are ingredients for			
				photosynthesis.					
	They should find out and describe	stretching.	Children will observe						
	how plants need water, light and		closely different		ts are organs for feeding.				
	a suitable temperature to grow	Plants	materials using simple	minerals and water for	the plants. Minerals and	d water are not food			
	and stay healthy		equipment such as	for plants.					
	,	Observe and describe	magnifying glasses.						
		how seeds and bulbs		3.Misconception: Leav	es take in water; the mai	n function of leaves is			
		grow into mature plant.	Perform simple tests	· ·	or dew; water vapour mo				
		8	using standard units	•	. Fact: Roots take in wate				
		Find out and describe	when appropriate.	leaves is to carry out p		ar me mam ranecion of			
			when appropriate.	leaves is to carry out p	notosynthesis.				
		how plants need water,		Matariala					
		light and a suitable	Observe and describe	Materials					
		temperature to grow	how seeds and bulbs		fusion about hardness ar	•			
		and stay healthy	grow into mature		etween the common usa				
			plants.		s 'hardness' and 'strengt				
				emphasised to pupils.	In science, hardness refe	rs to the ability of a			
			Recording	material to withstand	scratching and strength r	efers to the ability of a			
			Children will gather	material to support a h	neavy load without break	ing or tearing. Thus, a			
			and record data to		conventionally considered				
			help in answering	1 -	scientific sense. It can ea				
			questions.		Solement Senser it dan et	asily be solutioned.			
			questions.						
			Identifying and						
			, ,						
			classifying.						
			Interpreting Results						
			Children will use their						
			observations and ideas						
			to suggest answers to						
			questions.						
			Evaluating						
			Children will talk about						
			what they have found						
			out and how they						
			found it out.						
Oracy	Which material is the best to build a	stage and why?	. Juna it out.	<u> </u>			1		
Oracy	vincii materiaris trie best to bullu a	a stage and wily:							
opportunities									
for spring Term									
					1	<u>,                                      </u>	<u> </u>		
Summer	Living things and their Habitats	Living things and their	Asking Questions	What types of	A habitat must	Habitat	Seaside Trip Filey	Age:	Outstanding science
		<u>Habitats</u>	Children will ask	habitats are there?	provide food, shelter,	Shelter		David	Hamilton trust
The Great British	Pupils should be taught to explore	Explore and compare	simple questions and		water and space.	Microhabitat	Now Press Play	Attenborough	Science folder
Seaside	and compare the differences	the differences between	recognise that they	How do animals		Deforestation	Habitats-year 2	(our	resources
Jeasiue	between things that are living,	things that are living,	can be answered in	adapt to certain	Different animals will	Food Chain	,	environment	
	dead, and things that have never	dead, and things that	different ways	habitats?	require different	Producers Consumer	50 things: Walk in	linked to	BBC Bitesize
	been alive.	have never been alive	amerene mays		things from their	Respiration Excretion	the sand barefoot	habitats)	
Living things and	Scenarive.	Have Hevel Deell alive	Making Prodictions	How do animals		1 '	נוופ שמוע שמופוטטנ	πανιτατο	
their habitats	Thou will idoutify that we get lively	Idontify that we set their	Making Predictions		habitat.	Reproduction	FO things. Daddle !		
	They will identify that most living	Identify that most living	Children will make	depend on each			50 things: Paddle in		
	things live in habitats to which	things live in habitats to	simple predictions	other?			the sea		
	they are suited and describe how	which they are suited	based on a question						

for summer									
opportunities		L L							
Oracy	Discus	ssion: How do people chang	e habitats?	1			ı	<u> </u>	<u> </u>
		and stay healthy							
		temperature to grow							
		light and a suitable							
		how plants need water,	found it out.						
		Find out and describe	out and how they						
		Figures	what they have found						
		plants.	Children will talk about						
		grow into mature	   Evaluating						
	and stay healthy.	Observe and describe how seeds and bulbs	questions.						
	a suitable temperature to grow	Obcorus and describe	to suggest answers to						
	how plants need water, light and	evergreen trees	observations and ideas						
	They will find out and describe	including deciduous and	Children will use their						
	plants.	and garden plants,	Interpreting Results						
	and bulbs grow into mature	variety of common wild							
	observe and describe how seeds	Identify and name a	physical features						
	Pupils should be taught to		their habitats and						
		including trees.	classifying animals by	leaves is to carry out p	hotosynthesis.				
	including trees.	flowering plants,	Identifying and		. Fact: Roots take in wate	er. The main function of			
	common flowering plants,	variety of common		•	or dew; water vapour mo				
	basic structure of a variety of	the basic structure of a	questions.	•	es take in water; the mai				
	They will identify and describe the	Identify and describe	help in answering						
			and record data to	for plants.					
	deciduous and evergreen trees.	<u>Plants</u>	Children will gather	minerals and water for	the plants. Minerals and	d water are not food			
	wild and garden plants, including		Recording	2.Misconception: Root	ts are organs for feeding	. Fact: Roots absorb			
	and name a variety of common	food							
	Pupils should be taught to identify	different sources of	plants.	photosynthesis.					
		and identify and name	grow into mature	plant growth and healt	th. Water and carbon dio	xide are ingredients for			
	Plants	of a simple food chain,	how seeds and bulbs	food for plants. Fact: P	lants make their own foo	od. Minerals help in			
		animals, using the idea	observe and describe	1.Misconception: Mine	erals in the soil, water an	d carbon dioxide are			
		plants and other		Plants					
	food.	obtain their food from	when appropriate.	Possible Misconceptio	ns:				
	and name different sources of	Describe how animals	using standard units						
	simple food chain, and identify		Perform simple tests	change?					
	other animals, using the idea of a	micro-habitats		How do habitats					
	obtain their food from plants and	habitats, including	magnifying glasses.		animals eat.				
	They will describe how animals	animals in their	equipment such as	the food?	you about what				
		variety of plants and	closely, using simple	How do plants obtain	A food chain can tell				
	microhabitats.	Identify and name a	Children will observe						
	their habitats, including		Measuring	source?	and survival.		outdoors.		
	variety of plants and animals in	on each other	Observing and	What is a food	animals for their food		classroom and		
	Pupils will identify and name a	and how they depend			on plants and other		growing plants in		
		of animals and plants,	and keep the same.	What is a food chain?	how animals depend		Planting and		
T lattes	depend on each other.	needs of different kinds	what they will change		A food chain shows		, ,		
Plants	animals and plants, and how they	provide for the basic	Children will. Identify	needed for animals?	in many ways.		Hydroponics		
	basic needs of different kinds of	different habitats	Setting up tests	provide what is	in many ways.		Re Think food		
	different habitats provide for the	and describe how		How do habitats	Habitats can change		Sum 2:		

Term

Working Scientifically Theme	<ul> <li>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>Gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>Identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>Use straightforward scientific evidence to answer questions or to support his/her findings</li> <li>National Curriculum</li> <li>Progression in Skills</li> <li>Disciplinary Concepts</li> <li>Key Questions Key Facts</li> <li>Key Vocab Drivers &amp; 50 things</li> <li>A Protective</li> <li>Texts</li> </ul>											
			Concepts				unings	Characteristics	Texts			
Autumn Who First Lived	Identify and describe the functions of different parts of flowering plants: roots,	Plants Identify and describe	Asking Questions Children will ask questions and	What parts of the plant can we eat?	The three types of rock are: - sedimentary	Photosynthesis Trunk Nutrients	Aut 2 RE Think food indoor garden		Outstanding science Hamilton trust Science folder			
in Britain?  Plants  Rocks	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plan  Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties	the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers  Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant Investigate the way in	understand there are different enquiry types they could use to answer them.  Making Predictions Children will make relevant predictions about the characteristics of various types of rocks.  Setting up tests Children will identify what they will change,	respiration at night. Fa	- igneous - metamorphic  Fossils are the remains of traces of plants and animals that lived long ago.  ns:  cs carry out photosynthesis ct: Plants carry out respira	Metamorphic Sedimentary Igneous Fossils Permeable Durable Density Molten	project  Planting and growing plants in classroom and outdoors.		resources  Meadow Song			
	Describe in simple terms how fossils are formed when things that have lived are trapped within rock  Recognise that soils are made from rocks and organic matter	which water is transported within plants  Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal  Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties  Describe in simple terms how fossils are formed	observe and keep the same.  With support, set up simple practical enquiries.  Observing and Measuring Children will investigate the way in which water is transported within plants  Begin to use scientific equipment to make observations.	oxygen. Fact: Plants tal photosynthesis takes p when photosynthesis s 3. Misconception: Resp leaves, since only leave takes place in all plant	is breathe in carbon dioxid ke in carbon dioxide in the lace and gives out oxygen tops, as respiration continuitation in plants occurs on es have gas exchange porescells.	day when at night or in the dark ues to take place.  ly in the cells of s. Fact: Respiration	Aspirations – Mary Anning Cliffe Castle Visit Now Press Play Planting and growing plants in classroom and outdoors.	Mary Anning – sex & age	Stone Girl, Bone Girl Hamilton Trust			

when things th	ve Carry out tests and	
lived are trapp	thin simple experiments	
rock	and take	
Recognise that	are measurements using	
made from roc		
organic matter		
	Recording	
	Children will	
	gather and record	
	data in different ways	
	to help answer	
	questions.	
	Recording findings	
	using simple scientific	
	language, drawings,	
	labelled diagrams, bar	
	charts, and tables	
	Interpreting Results	
	Children will report on	
	findings from	
	enquiries, including	
	oral and written	
	explanations.	
	Make simple	
	conclusions.	
	Use results, findings or	
	observations to	
	answer questions.	
	<u>Evaluating</u>	
	Children will suggest	
	questions for further	
	investigation.	
Oracy Ignite speech: What are the uses of rocks?		
opportunities		
for Autumn		
term		

Spring	identify that animals, including	Identify that animals,	Asking Questions	What is diet and	Animals can be	Muscle	Healthy Lifestyles	Outstanding science
Spring	humans, need the right types	including humans, need	Children will ask	nutrition?	grouped according to	Skeleton	Treating Enestyles	Hamilton trust
Here, There and	and amount of nutrition, and	the right types and	questions and		their bone structure.	Lungs	50 things – plan	Science folder
•	that they cannot make their own	amount of nutrition,	understand there are	Do all animals have a		Diaphragm	and cook a meal	resources
Everywhere	food; they get nutrition from	and that they cannot	different enquiry	skeleton?	Animals can be	Biceps		1 333 4.1 333
	what they eat	make their own food;	types they could use		grouped according to	Triceps	STEM visit Careers/	
Animals		they get nutrition from	to answer them.	How do muscles	what they eat.	Diet	Aspirations/science	
including	identify that humans and some	what they eat		work?		Nutrition	week	
humans	other animals have skeletons and		Making Predictions		Some seeds are	Vertebrate		
	muscles for support, protection	Identify that humans	Children will make		transported by wind,	Invertebrate		
	and movement	and some other animals	relevant predictions.	How is water	and have seeds			
		have skeletons and	'	transported through	designed to float,	Xylem		
		muscles for support,	Setting up tests	plants?	glide or spin through	Transportation		
	explore the requirements of	protection and	Children will identify	'	the air.	Pollination	Plan and grow	
	plants for life and growth (air,	movement	what they will change,	What are the ways		Seed dispersal	flowers outside	Outstanding science
	light, water, nutrients from soil,		observe and keep the	plants disperse their	Plants growing near a	'		Hamilton trust
	and room to grow) and how they	Identify and describe	same.	seeds?	river may use the			Science folder
	vary from plant to plant	the functions of			flowing water to			resources
Plants		different parts of	With support, set up		transport their seeds.			
	investigate the way in which	flowering plants: roots,	simple practical					Meadow Song
	water is transported within	stem/trunk, leaves and	enquiries		Sometimes animals			
	plants	flowers			can move seeds.			
	·		Observing and					
	explore the part that flowers play	Explore the	Measuring	Possible Misconceptio	ns:			
	in the life cycle of flowering	requirements of plants	Children will	Plants				
	plants, including pollination, seed	for life and growth (air,	investigate the way in	1.Misconception: Plant	s carry out photosynthes	sis in the day and		
	formation and seed dispersal	light, water, nutrients	which water is	respiration at night. Fa	ct: Plants carry out respi	ration all the time and		
		from soil, and room to	transported within	photosynthesis when t	here is light.			
		grow) and how they	plants					
		vary from plant to plant		2.Misconception: Plant	s breathe in carbon diox	ide and breathe out		
			Begin to use scientific	oxygen. Fact: Plants ta	ke in carbon dioxide in th	e day when		
		Investigate the way in	equipment to make	photosynthesis takes p	lace and gives out oxyge	n at night or in the dark		
		which water is	observations.	when photosynthesis s	tops, as respiration cont	inues to take place.		
		transported within						
		plants	Carry out tests and		piration in plants occurs o	•		
			simple experiments		es have gas exchange por	es. Fact: Respiration		
		Explore the part that	and take	takes place in all plant	cells.			
		flowers play in the life	measurements using					
		cycle of flowering	standard units.	-	ts do not respire, or they	only respire in the		
		plants, including pollination, seed	Pocording	dark. Fact: Plants respi	re all trie time.			
		formation, seed	Recording Children will					
		dispersal	gather and record					
		aispersai	data in different ways					
			to help answer					
			questions.					
			Recording findings					
			using simple scientific					
			language, drawings,					
			labelled diagrams, bar					
			charts, and tables					
			Interpreting Results					
			Children will report on					
			findings from					
			enquiries, including					

			oral and written					
			explanations.					
			Make simple					
			conclusions.					
			Use results, findings or					
			observations to					
			answer questions.					
			Evaluating					
			Children will suggest					
			questions for further					
			investigation.					 
Oracy	Discu	ssion: Consider life withou	t plants					
opportunities								
for spring term								
Summer	compare how things move on	Compare how things	Asking Questions	What is a force?	Forces are the things	Force	Planting and	Outstanding science
	different surfaces	move on different	Children will ask		that allow the	Newtons	growing plants in	Hamilton trust
Forces and		surfaces	questions and	Do things move	movement of all	Shadows	classroom and	Science folder
Magnets	notice that some forces need		understand there are	differently on	objects around us.	Reflect	outdoors.	resources
	contact between 2 objects, but	Notice that some forces	different enquiry	different surfaces?		Transparent		
	magnetic forces can act at a	need contact between	types they could use		Magnets have two	Translucent	50 things - Shadow	
	distance	two objects, but	to answer them.	What materials are	poles; north and	Opaque	puppets	
		magnetic forces can act		magnetic?	south.			
	observe how magnets attract or	at a distance	Making Predictions					
	repel each other and attract		Children will make	Which magnetics				
	some materials and not others	Compare and group	relevant predictions	poles attract and	Light is a form of			
		together a variety of	based on their	which repel?	energy that enables			
	compare and group together a	everyday materials	scientific		us to see the world			
	variety of everyday materials on		understanding as to	What is light?	around us.			
	the basis of whether they are	Notice that light is	whether a material is					
	attracted to a magnet, and	reflected from surfaces	magnetic or not.	Which materials	Light comes from			
	identify some magnetic materials			reflect light?	different sources.			
		Recognise that light	Setting up tests					
	describe magnets as having 2	from the sun can be	Children will identify		Our main source of			
	poles	dangerous and that	what they will change,		natural light is the			
			observe and keep the		Sun.			
	predict whether 2 magnets will	1						

	attract or ronal each other	there are ways to	same. Whilst testing	Possible Misconceptions:	
	attract or repel each other,	there are ways to	_	Possible Misconceptions:	Outstanding science
	depending on which poles are	protect eyes	different materials		Outstanding science
	facing			Light	Hamilton trust
Light		Recognise that light	With support, set up	1.misconception sight is purely an active human process 'I am	Science folder
	recognise that they need light in	from the sun can be	simple practical	looking at something, which is why I can see it' or	resources
	order to see things and that dark	dangerous and that	enquiries.	that eyes give out a form of light to enable us to	
	is the absence of light	there are ways to		see	
		protect eyes	Observing and		
	notice that light is reflected from	. ,	Measuring	2.misconception reflective surfaces emit light	
	surfaces	Find patterns in the way	Begin to use scientific	3.misconception only shiny surfaces or water reflect light	
		that the size of shadows	equipment to make	4.misconception. opaque objects do not reflect light	
	recognise that light from the sun	change	observations.	5.misconception opaque surfaces give out colour or 'darkness'	
		change	observations.		
	can be dangerous and that there		Camera and tasks and	Magnets and Forces	
	are ways to protect their eyes		Carry out tests and	magnets and rorses	
			simple experiments	Misconceptions 1 A stationary object has no forces acting on it. The	
	recognise that shadows are		and take		
	formed when the light from a		measurements using	reason the object is stationary is because the forces	
	light source is blocked by an		standard units.	acting on it are balanced.	
	opaque object				
			Recording	Misconceptions 2 Mass and weight are the same thing. Mass is a	
	find patterns in the way that the		Children will	measure of the amount of matter in an object; weight	
	size of shadows change		gather and record	is a measure of the force exerted by the object due to	
			data in different ways	gravity.	
			to help answer		
			questions.	Misconceptions 3. All metals are magnetic	
			questions.		
			December Coding		
			Recording findings		
			using simple scientific		
			language, drawings,		
			labelled diagrams, bar		
			charts, and tables		
			Interpreting Results		
			Children will report on		
			findings from		
			enquiries, including		
			oral and written		
			explanations.		
			Make simple		
			conclusions.		
			conclusions.		
			He recults findings		
			Use results, findings or		
			observations to		
			answer questions.		
			Evaluating		
			Children will suggest		
			questions for further		
			investigation.		
Oracy	Discu	ssion: Imagine you had ma	· · · · · · · · · · · · · · · · · · ·	it be good?	1
	J1360		o	0	
opportunities					
for summer					
term					
	<u> </u>				

Working Scientifically Theme	<ul> <li>Ask relevant questions and use different types of scientific enquiries to answer them</li> <li>Set up simple practical enquiries, comparative and fair tests</li> <li>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>Gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>Identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>Use straightforward scientific evidence to answer questions or to support his/her findings</li> <li>National Curriculum</li> <li>Progression in Skills</li> <li>Disciplinary Concepts</li> <li>Key Questions</li> <li>Key Facts</li> <li>Key Vocab</li> <li>Drivers &amp; 50 things</li> <li>British Values &amp; Protective</li> <li>Texts</li> </ul>										
								Characteristics			
Autumn Our Magical City States of Matter	Compare and group materials together, according to whether they are solids, liquids or gases  Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)  Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Compare and group materials together, according to whether they are solids, liquids or gases  Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)  Identify differences, similarities or changes related to simple scientific ideas and processes  Use straightforward scientific evidence to answer questions or to support his/her findings  Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Asking Questions Children will ask relevant questions and use different types of scientific enquiry to answer them.  Making Predictions Children will make predictions based on simple scientific knowledge  Setting up tests Children will identify what they will change, observe or measure and keep the same.  Set up simple practical enquiries, comparative and fair tests.  Observing and Measuring Children will make systematic and careful observations.  Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	What are the different states of matter?  How does a material change from one state to another?  How are clouds in the sky formed?  What temperature does water evaporate?	Matter is another word for the stuff things are made of.  Everything falls into one of three categories; solid, liquid or gas.  Materials can change from one state of matter to another through freezing and melting.  The water cycle converts water into all three different states; liquid, solid (ice) and gas (vapour).  Clouds are formed after water from the earth is evaporated by the sun.  Vapour that has turned into liquid can be released by clouds in the form of rain or snow.	States of Matter Solid Liquid Gas Reversible Irreversible Precipitation Evaporation Condensation Filtering	Outdoor learning – physically making solids, liquids and gases  Planting and growing plants in classroom and outdoors.  50 things: Play conkers		Outstanding science Hamilton trust Science folder resources  The Rhythm of the Rain Yorkshire Water		
			Recording Children will gather, record and classify								

			data in a variety of	Possible Missersertis	inc:		<u> </u>	
			data in a variety of	Possible Misconceptio	ins:			
			ways to help in	Changes in matter	ide that arranges //s = 1 -1	icannoar faracer		
			answering questions.		ids that evaporate/boil di			
			Pocord findings using	•	y-drinks can or glass conta			
			Record findings using	to the outside.	m the inside seeps throug	gii		
			simple scientific		on a cubetanao bas dissal	yed it has		
			language, drawings, labelled diagrams,	'disappeared'.	en a substance has dissol			
			keys, bar charts, and	Misconceptions 4 Sub	stances (like sugar) 'melt'	' in water.		
			tables.					
			Interpreting Results					ļ
			Children will					
			Use straightforward					
			scientific evidence to					
			answer questions or to					
			support their findings.					
			Use results to draw					
			simple conclusions.					
			Begin to identify					
			differences, similarities					
			or changes related to					
			simple ideas or					
			processes.					
			Evaluating					
			Children will begin to					
			make predictions for					
			new values, suggest					
			improvements and					
			raise further					
			questions.					
Oracy	De	ebate: Solid, liquid, Gas – which	one is most important?					
opportunities for								
Autumn Term	1		T	Lua	Ter	Ta: ::		
Spring	identify common appliances th	·	Asking Questions	What are the key	Electricity is an	Circuit	STEM visit Careers/	Outstanding science
17 <sup>th</sup> Century Britain	run on electricity	appliances that run on	Children will ask	components of a	energy. This energy	Cell	Aspirations/science	Hamilton trust
17 Century Britain		electricity	relevant questions and	circuit?	can be used to power	Crocodile clip Switch	week	Science folder
Electricity	construct a simple series		use different types of		electrical items.	Bulb		resources
Licetricity	electrical circuit, identifying and	Construct a simple series	scientific enquiry to	Which materials		Conductor Insulator		
	naming its basic parts, including	electrical circuit,	answer them.	conduct electricity?	Electricity can only	Component	Planting and	
	cells, wires, bulbs, switches and	l luentilying and naming			travel if there is a	Classification	growing plants in	Lux app
	buzzers	its basic parts, including	Making Predictions	Does the number of	complete circuit.	Characteristic	classroom and	
	Du22E13	cells, wires, bulbs,	Children will make	batteries affect the		Organism	outdoors.	
		switches and buzzers	predictions based on	brightness of a bulb?	A complete circuit is	Amphibians		
	identify whether or not a lamp	Identify whether or not a	simple scientific		made up of different		50 things: Explore a	
	will light in a simple series circu	I	knowledge		components -		cave (Oakworth	
	based on whether or not the	series circuit, based on			batteries (or cell),		cave trip)	
	lamp is part of a complete loop	whether or not the lamp	Setting up tests		wires and bulbs,			
	with a battery	is part of a complete	Children will identify		buzzers and motors.			
		loop with a battery	what they will change,					
			observe or measure					
	recognise that a switch opens	Recognise that a switch	and keep the same.					
	and closes a circuit and associa	te opens and closes a	· '					
		circuit and associate this						
	I.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	L	I.	1	1	1	1

	this with whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and	with whether or not a lamp lights in a simple series circuit  Recognise some	Set up simple practical enquiries, comparative and fair tests.  Observing and				
Living things and their habitats	associate metals with being good conductors	common conductors and insulators, and associate metals with being good conductors	Measuring Children will make systematic and careful observations.  Take accurate measurements using standard units, using a	How can we group different living things?  What is a classification key?	An organism is an individual animal, plant, or single-celled life form.  A classification key is		
	recognise that living things can be grouped in a variety of ways  explore and use classification keys to help group, identify and name a variety of living things in their local and wider	Recognise that living things can be grouped in a variety of ways  Explore and use classification keys to help group, identify and name	range of equipment, including thermometers and data loggers.  Recording Children will gather, record and classify data in a variety of ways to help in	classification key:	a series of questions that determine an organism's physical characteristics to help identify an unknown organism.		Outstanding science Hamilton trust Science folder resources  Seek app by iNaturalist
	their local and wider environment  recognise that environments can change and that this can sometimes pose dangers to living things	group, identify and name a variety of living things in their local and wider environment  Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things	answering questions.  Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.  Interpreting Results Children will Use straightforward scientific evidence to answer questions or to support their findings.  Use results to draw simple conclusions.  Begin to identify differences, similarities or changes related to	works. Misconceptions 2 Wire Misconceptions 3 If a c Misconceptions 4 Elect and leads to both sides Misconceptions 4 Curr thing. Misconceptions 5 Curre components.	rent coloured wires affect is made of plastic. ircuit is broken, energy go ricity comes out of both s	pes off into the air. dides of the battery by are all the same through	
			simple ideas or processes.  Evaluating Children will begin to make predictions for new values, suggest improvements and raise further questions.				

Oracy opportunities for spring Term	Conc	ept cartoon: you must have a	at least one piece of wire	in the circuit				
Summer	describe the simple functions of the basic parts of the digestive	Describe the simple functions of the basic	Asking Questions Children will ask	How many types of teeth do humans	We have three types of teeth - incisors,	Canines Molars teeth Incisors	Healthy Lifestyles – looking after teeth	Outstanding science Hamilton trust
The Great Escape	system in humans	parts of the digestive system in humans	relevant questions and use different types of	have?	canines and molars.	teeth Oesophagus Pharynx	Planting and	Science folder resources
Animals including humans	identify the different types of teeth in humans and their simple functions  construct and interpret a variety	Identify the different types of teeth in humans and their simple functions	scientific enquiry to answer them.  Making Predictions Children will make predictions based on	What are the roles of the different types of teeth?  What happens to the food we eat?	The large intestine is around 5ft long and the small intestine is around 16ft long.	Intestines Saliva Vibrations Particles High pitched Low pitched Frequency	growing plants in classroom and outdoors.  Sum 1 Rethink food indoor	
	of food chains, identifying producers, predators and prey	Construct and interpret a variety of food chains, identifying producers, predators and prey	simple scientific knowledge  Setting up tests Children will identify what they will change, observe or measure			Volume	garden	
	identify how sounds are made, associating some of them with something vibrating	Identify how sounds are made, associating some of them with something vibrating	and keep the same.  Set up simple practical enquiries, comparative and fair tests.	How is sound created?  How does sound	Sound comes from vibrations. These vibrations create sound waves which			
Sound	recognise that vibrations from sounds travel through a medium to the ear	Recognise that vibrations from sounds travel through a medium to the ear	Observing and Measuring Children will make systematic and careful	travel?  Does the size of an object affect the pitch of the sound it	move through air and water before reaching our ears.  The pitch of a sound			
	find patterns between the pitch of a sound and features of the object that produced it	Find patterns between the pitch of a sound and features of the object that produced it	observations.  Take accurate measurements using	produces?  Possible Misconceptio	is how high or low the sound is.			
	find patterns between the volume of a sound and the strength of the vibrations that produced it	Find patterns between the volume of a sound and the strength of the vibrations that produced it	standard units, using a range of equipment, including thermometers and data loggers.	Sound 1, Misconceptions ,The and the pitch of sound	ere is a link between the f	•		
	recognise that sounds get fainter as the distance from the sound source increases	Recognise that sounds get fainter as the distance from the sound source increases	Recording Children will gather, record and classify data in a variety of ways to help in answering questions.	and the volume of the	sound that is produced. Inds get fainter as the dis	tance from the sound		
			Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.					
			Interpreting Results Children will					

		Use straightforward scientific evidence to			
		answer questions or to			
		support their findings.			
		Use results to draw			
		simple conclusions.			
		Simple conclusions.			
		Begin to identify			
		differences, similarities			
		or changes related to			
		simple ideas or			
		processes.			
		<u>Evaluating</u>			
		Children will begin to			
		make predictions for			
		new values, suggest			
		improvements and			
		raise further			
		questions.			
Oracy	Debate: The tongue	is more important than teeth	-	1	•
opportunities for		•			
summer Term					
Janinici iciiii	1				

Scientifically	<ul> <li>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line</li> <li>Use test results to make predictions to set up further comparative and fair tests</li> <li>Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>Identify scientific evidence that has been used to support or refute ideas or arguments</li> </ul>										
Theme	National Curriculum	Progression in Skills	Disciplinary Concepts	Key Questions	Key Facts	Key Vocab	Drivers & 50 things	British Values & Protective Characteristics	Schemes/Resources Texts		
Autumn	Describe the movement of the Earth, and other planets, relative	Describe the movement of the	Asking Questions Children will ask	How do we know the Sun, Moon and Earth	A day is how long it takes a planet to	Solar system Orbit	Outdoor/active learning – rotation	Sex: The women	Earth and Space The Mysteries of the		
Adventures	to the Sun in the solar system.	Earth, and other planets, relative to the	scientific questions and begin	are spherical?	rotate fully.	Planet Mercury	of planets and moon in relation to	involved in getting man to	Universe by Will Garter		
Earth and Space	Describe the movement of the Moon relative to the Earth.	Sun in the solar system  Describe the	to understand which questions would be best	What is the name of the planets in our solar system, in order?	A year is how long it takes a planet to orbit the Sun.	Venus Mars Jupiter	the sun.  ReThink Food	the moon in the USA (Hidden Figures)	Now press play – Mission to Mars		
	Describe the Sun, Earth, and Moon as approximately spherical bodies.	movement of the Moon relative to the Earth	suited to each enquiry type.	What is the difference between heliocentric	The Moon has a diameter of 2,159	Saturn Uranus Neptune	indoor garden life on Mars Project	,	Outstanding science Hamilton trust		
	Use the idea of the Earth's rotation to explain day and night	Describe the Sun, Earth and Moon as	Making Predictions Children will make predictions	and geocentric ideas of planetary movement?	miles (3,476 kilometres) and is about one-quarter	Pluto Rotate Axis	Planting and growing plants in classroom and		Science folder resources		
	and the apparent movement of the sun across the sky.	approximately spherical bodies	based on scientific knowledge.	How do night and day occur?	the size of Earth.		outdoors.		Hidden Figures		
		Use the idea of the Earth's rotation to explain day and night	Setting up tests Children will with support, plan	Why does night time and day time occur at	The Moon weighs about 80 times less than Earth.						

	T		T	T	T	T	Ţ	Г	T
		and the apparent	different types of	different times around	Saturn is the lightest				
		movement of the sun	scientific enquiry.	the world?	planet.				
		across the sky	Where appropriate,						
		,	identify the	How does the moon					
			dependent,	move in relation to					
			independent and	earth?					
			controlled	Cartifi					
				How does the earth					
			variables.						
				move in relation to the					
			Observing and	sun?					
			Measuring						
			Children will use a						
			range of						
			scientific equipment						
			to make systematic						
			and careful						
			observations.						
			Recording						
			Gather, record and	Possible Misconception	IC.	ı			
			classify data with	Earth and Space					
			· ·			this can lood the			
			increasing	Misconception 1 The su	•	uns can lead the			
			complexity to help	children to thinking the	Sun orbits the earth.				
			in answering						
			questions.	•	_	sun is blocked. It is dark			
				at night because we are	turned away from the S	iun.			
			Interpreting results						
			Children will use	Misconception 3, Earth	is the biggest object with	hin our Solar System			
			scientific evidence to	because the Sun, Moon	and other planets appear	ar to be small from			
			answer questions.	Earth. This is because w	e are looking at them fro	om a distance. Many			
				children are also surpris					
			Make conclusions	believe that Mars is a ho					
			based on scientific		, p. a				
			evidence and from	Misconcentions 4 Stars	s are only present in the	sky during the night			
			their own testing	because that is when th		, ,			
				I .	•	•			
			and findings.	day, the brightness of the from being seen.	ne sun will stop all of the	e other stars in the sky			
			<u>Evaluating</u>	nom being seen.					
			Children will make						
			predictions						
			'						
			for new values,						
			suggest						
			improvements and						
			raise further						
			questions.	<u> </u>					
Oracy	De	bate – is there life on other p	lanets?						
opportunities									
for Autumn									
term									
Spring	Explain that unsupported object	ts Explain that	Asking Questions	What is the effect of	Gravity keeps the	Gravity	STEM visit Careers/		Outstanding science
Shimp	fall towards the Earth because of	1 .	Children will ask	gravity on	Earth and all the	Air resistance	Aspirations/science		- acotamaning solicities
B	the force of gravity acting	fall towards the Earth	scientific questions	unsupported objects?	planets in our solar	Water resistance	week		Hamilton trust
Beautiful Britain	between the Earth and the falli		· ·	ansupported objects!	'		WEEK		riaiiiiitoii tiust
		~	and begin to understand which	How door air	system in orbit	Buoyancy Friction	Dianting and		
Forces	object.	gravity acting between		How does air	around the Sun.		Planting and		
		the Earth and the	questions would be	resistance affect		Lever	growing plants in		
	<u> </u>	falling object	best suited to each	moving objects?		Gear			

	Identify the effects of air		enquiry type.		A ship floats on water	Cog	classroom and	
Animals	resistance, water resistance and	Identify the effects of		How can you	because the force	Pulley	outdoors.	
Including	friction, that act between moving	air resistance, water	Making Predictions	minimise the effect of	from the water	Puberty		
Humans	surfaces.	resistance and friction,	Children will make	water resistance on	pushing it up is equal	Foetus	Spring 2 – Rethink	
Tramans		that act between	predictions	objects?	to the force pulling it	Fertilisation	Food	
	December that same	moving surfaces	based on scientific		down.	Adolescence		
	Recognise that some		knowledge.				50 things: Make	
	mechanisms including levers,	Recognise that some		What is the purpose	Forces are measured		snow angels	
	pulleys and gears allow a smaller	mechanisms, including	Setting up tests	of a lever?	in newtons (N) using a			
	force to have a greater effect.	levers, pulleys and	Children will with		newton meter, named		50 things: Take a	
		gears, allow a smaller	support, plan		after Sir Isaac		walk through a	
		force to have a greater	different types of		Newton.		forest	
		effect	scientific enquiry.	Animals Including				
			Where appropriate,	Humans				
		Animals Including	identify the	What are the 6				
		Humans	dependent,	different stages of				
	Animals Including Humans	Describe the changes	independent and	human development,	Animals Including			
	Describe the changes as humans	as humans develop to	controlled variables.	in order?	Humans			
	develop to old age.	old age	controlled variables.	in order:	Human beings always			
		old age	Observing and	What are the main	grow more brain cells			
			Measuring	changes that occur	than they need. This			
			Children will use a	1	enables mental			
			range of scientific	during puberty?	development in old			
				M/hat ava tha main				
			equipment to make	What are the main	age to continue.			
			systematic and careful	changes that take				
			observations.	place during old age?	Some animals go			
					through			
			Recording		metamorphosis			
			Gather, record and		where they change			
			classify data with		into a very different			
			increasing complexity		animal.			
			to help in answering					
			questions.					
			Interpreting results					
			Identify differences,	Possible Misconception	ns:			
			similarities or changes					
			related to simple	Forces				
			ideas or processes.	Misconceptions 1 A sta	tionary object has no force	ces acting on it. The		
			evidence to answer	reason the object is sta	tionary is because the for	rces		
			questions.	acting on it are balance				
				Misconceptions 2. The	best place to put the fulc	rum is in the centre of		
			Make conclusions	the lever. The mechani	sm will in fact have a bigg	ger		
			based on scientific	effect when it is closer	to the object being move	d.		
			evidence and from	Misconceptions 3 A gro	eater force on a mechanis	sm always has a greater		
			their own testing	effect on the object. In	fact, a mechanism can all	low a		
			and findings.	smaller force to have a				
				I .	ss and weight are the sam	e thing. Mass is a		
			Evaluating	-	t of matter in an object; v	_		
			Children will make		ce exerted by the object of	_		
			predictions		to define these measuren			
			for new values,		t be clear when introduci			
			suggest	pulleys.		•		
			improvements and	F				
			raise further					
			questions.					
L		<u> </u>	1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	1			I	1

Oracy opportunities for spring term								
Summer  The Industrial Revolution  Properties and changes of materials  Living things and habitats	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.  Recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution  Use knowledge of solids, liquids, and gases to decide how to grouthem.  Demonstrate that dissolving, mixing and changes of state are reversible changes.  Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversable, including changes associated with burning and the action of acid on bicarbonate of soda.  Describe the differences in the life cycles of a mammal, an amphibian, an insect, and a bird.	how to recover a substance from a solution  Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating  Give reasons, based on evidence from comparative and fair tests, for the particular	Asking Questions Children will ask scientific questions and begin to understand which questions would be best suited to each enquiry type.  Making Predictions Children will make predictions based on scientific knowledge.  Setting up tests Children will with support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables.  Observing and Measuring Children will use a range of scientific equipment	What are thermal conductors and insulators and why are they used?  Which electrical conductors makes a bulb shine the brightest?  What is the difference between melting and dissolving?  What is the difference between sexual and asexual reproduction?  What are the three different types of mammals?	The most common example of filtering is making a cup of tea.  The material with the highest known melting temperature is a metal called tungsten which melts at 3387 degrees Celsius.  Burning is an irreversible chemical change.  The ostrich lays the biggest eggs of any land animal.  A small number of animals are asexual which means they can self-fertilise.  Elephants have the longest gestation period of all mammals, carrying their babies for almost two years (22	Dissolve Insoluble Chemical Solution Permeable Soluble Resistance Filter Sieve a device Gestation period Asexual Cell Embryo	Planting and growing plants in classroom and outdoors.	Outstanding science Hamilton trust Science folder resources
	Describe the life process of reproduction in some plants and animals.	materials, including metals, wood and plastic  Demonstrate that dissolving, mixing and changes of state are reversible changes  Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	to make systematic and careful observations.  Recording Children will take accurate measurements using a range of scientific equipment.  Start to take repeat readings when appropriate.  Gather, record and classify data with increasing complexity to help	Misconceptions 2 fizzy wet because liquid from to the outside. Misconceptions 3. Whe 'disappeared'.	months).  ds that evaporate/boil dis- drinks can or glass contain the inside seeps through a substance has dissolve tances (like sugar) 'melt'	niner becomes h ved it has		

	1		ı	ı	1
		in answering			
	Describe the	questions.			
	differences in the life				
	cycles of a mammal, an	Interpreting results			
	amphibian, an insect	Children will use			
	and a bird	scientific evidence to			
	_ ,, ,, ,,,	answer questions.			
	Describe the life				
	process of	Make conclusions			
	reproduction in some	based on scientific			
	plants and animals	evidence and from			
	1	their own testing			
		and findings.			
		and mange			
		Identify differences			
		Identify differences,			
		similarities or changes			
		related to simple			
		ideas or processes.			
		evidence to answer			
		questions.			
		Make conclusions			
		based on scientific			
		evidence and from			
		their own testing			
		and findings.			
		Identify			
		differences,			
		similarities or			
		changes related to			
		simple ideas or			
		processes.			
		p. 0003303.			
		Evaluating			
		Evaluating			
		Children will make			
		predictions			
		for new values,			
		suggest			
		improvements and			
		raise further			
		questions.			
<b>Oracy</b> Debat	te: the heart is the most im	-		<u>ı</u>	
- I	ic. the heart is the most iii	portant organ in the boa	, <del>,</del>		
opportunities					
for summer					
term					

Year 6	<ul> <li>Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary</li> <li>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>Posserd data and results of increasing complexity using scientific diagrams and labels, classification levels, tables, scatter graphs, has and line graphs.</li> </ul>								
Working Scientifically	<ul> <li>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>Use test results to make predictions to set up further comparative and fair tests</li> </ul>								
Scientifically	• Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations								
	<ul> <li>Describe and evaluate their or</li> <li>Group and classify things and</li> </ul>		cientific ideas related t	to topics in the national cur	riculum (including	ideas that have change	ed over time), using ev	idence from a ran	ige of sources
Theme	National Curriculum	Progression in Skills	Disciplinary	Key Questions	Key Facts	Key Vocab	Drivers & 50 things	British Values	Schemes/Resources/
			Concepts					& Protective Characteristics	Texts
								Characteristics	
Autumn	Recognise that light appears to travel in straight lines.	Recognise that light appears to travel in	Asking Questions Children will ask	How does light travel?	Light travels slower through	Absorb Refract	Optician visit		Outstanding science Hamilton trust
	traver in straight inies.	straight lines	relevant scientific	How do we see things?	different	Prism	Planting and growing		Transition trast
	Use the idea that light travels in		questions and choose		materials like	Lens	plants in classroom		
Light	straight lines to explain that	Use the idea that light	which enquiry type	What do mirrors do to	water and glass.	Ray	and outdoors.		
6	objects are seen because they	travels in straight lines	would be best suited	light?		Beam			
	give out or reflect light into the	to explain that objects	to answer them.		We see different	Focal point	Cashinalassas		
Animals	eye.	are seen because they give out or reflect light	Making Predictions	How do we see colours?	colours because each colour has	Blood vessel Circulatory system	Cooking Lessons		
Including	Explain that we see things	into the eye	Children will Children	Why do shadows have the	its own	Plasma			
Humans	because light travels from light	into the eye	will make predictions	same shape as the object	wavelength.	Platelets	Healthy Nutrition		
	sources to our eyes or from light	Explain that we see	based on scientific	that casts them?			,		
	sources to objects and then to	things because light	knowledge.		InfraRed rays are		Planting and growing		
	our eyes.	travels from light			invisible to		plants in classroom		
		sources to our eyes or			humans.		and outdoors.		
	Use the idea that light travels in straight lines to explain why	from light sources to objects and then to	Setting up tests Plan different types	What is the circulatory system?	Light travels				
	shadows have the same shape as	our eyes	of scientific enquiries	System:	nearly 900,000				
	the objects that cast them.	Use the idea that light	to answer questions,	How does diet effect	times faster than				
		travels in straight lines	Including recognising	growth?	sound.				
		to explain why	and controlling						
		shadows have the	variables where	Are all drugs bad for you?	1 '				
		same shape as the	necessary.	The Constitution of Market	beam of light into				
		objects that cast them	Observing and	How is water used within the body?	the colours of the visible spectrum.				
			Measuring	the body:	visible spectrum.				
	Pupils should be taught to:		Children will use a	What is blood made of?	The heart beats				
		Identify and name the	range of scientific		2.5 billion times				
	identify and name the main	main parts of the	equipment to make	What are the main organs	during the life of				
	parts of the human circulatory	human circulatory	systematic and	within the human body?	a 75-year-old.				
	system, and describe the	system, and describe	careful observations	MATERIA CONTRACTOR	Dland in a				
	functions of the heart, blood vessels and blood	the functions of the heart, blood vessels	with increased complexity.	What are the main	Blood is a mixture of fluid,				
	vessels and blood	and blood	complexity.	systems of the human body?	plasma, white				
	recognise the impact of diet,		Recording	bodyr	and red blood				
	exercise, drugs and lifestyle on	Recognise the impact	Children will record		cells.				
	the way their bodies function	of diet, exercise, drugs	data and results of						
		and lifestyle on the	Increasing complexity		Red blood cells				
	describe the ways in which	way their bodies	using scientific		transport oxygen				
	nutrients and water are transported within animals,	function	diagrams and labels, classification keys,		to every cell and remove carbon				
	including humans	Describe the ways in	tables, scatter graphs,		dioxide.				
		which nutrients and	bar and line graphs.						
		water are transported							
	•	•	•		•	•	•	-	

	ujithin .	animals, Take measurements,	Possible Misconceptions:
			· · · · · · · · · · · · · · · · · · ·
	Includir	ng humans using a range of	Light
		scientific equipment,	1.misconception sight is purely an active human process 'I am
		with increasing	looking at something, which is why I can see it' or
		accuracy and	that eyes give out a form of light to enable us to
		precision, taking	see
		repeat readings	2.misconception reflective surfaces emit light
		when appropriate.	3.misconception only shiny surfaces or water reflect light
			4.misconception. opaque objects do not reflect light
		Interpreting Results	5.misconception opaque surfaces give out colour or 'darkness'
		Children will use	5. Inisconception opaque surfaces give out colour or durkness
		scientific evidence to	
		answer questions	
		Library and a street file	
		Identify scientific	
		evidence that has	
		been used to	
		support or refute	
		ideas or arguments.	
		Donort or d	
		Report and	
		present findings	
		from enquiries,	
		including	
		conclusions,	
		causal	
		relationships and	
		explanations of	
		and a degree of	
		trust in results, in	
		oral and written	
		forms such as	
		displays and other	
		presentations.	
		Evaluating	
		Evaluating Children will use test	
		Children will use test	
		results to make	
		predictions to set up further comparative	
		and fair tests.	
		and fair tests.	
		Suggest investigation	
		improvements	
		including accuracy	
		of results.	
		or results.	
		Provide some	
		simple examples of	
		how to extend the	
		investigation.	
Oracy	Ignite speech		nt of your choice, discussing each stage and how the animal/plant develops.
opportunities	, Se speech	plur	,
for Autumn			
Term			

Spring	Pupils should be taught to:	Associate the	Asking Questions	How has electricity	Lightning is caused by	Alternating	Engineering/Problem	Outstanding science
	and sints the building of a	brightness of a lamp or	Children will ask	changed over time?	the discharge of	Direct current Battery	solving	Hamilton trust
Electricity	associate the brightness of a	the volume of a buzzer	relevant scientific	What are the	electricity in the	Motor	CTEM wieit Company	
,	lamp or the volume of a buzzer	with the number and	questions and choose		atmosphere.	Buzzer	STEM visit Careers/	
	with the number and voltage of	voltage of cells used in	which enquiry type	different symbols on	Floorinityon finat	Voltage	Aspirations/science	
	cells used in the circuit	the circuit	would be best suited	an electrical circuit?	Electricity was first		week	
			to answer them.	NATIONAL AND THE OFFICE AND	discovered in 600BC		6	
	compare and give reasons for	Compare and give		What are the effects	by the Ancient		Spring 1	
	variations in how components	reasons for variations	Making Predictions	of differing voltages in	Greeks.		Re Think Food	
	function, including the	in how components	Children will Children	a circuit?			indoor garden	
	brightness of bulbs, the loudness	function, including the	will make predictions		Kilowatt is a unit used		project	
	of buzzers and the on/off	brightness of bulbs,	based on scientific	What happens if you	for measuring		Planting and growing	
	position of switches	the loudness of	knowledge.	increase or decrease	electrical power.		plants in classroom	
		buzzers and the on/off		the voltage on			and outdoors.	
	use recognised symbols when	position of switches		differing parts of the				
	representing a simple circuit in a		Setting up tests	circuit?			50 things: Invent	
	diagram	Use recognised	Plan different types	Possible Misconceptio	ns:		something	
		symbols when	of scientific enquiries	Electricity				
		representing a simple	to answer questions,	Misconceptions 1 Diffe	rent coloured wires affect	t how the circuit		
		circuit in a diagram	Including recognising	works.				
			and controlling	Misconceptions 2 Wire	is made of plastic.			
			variables where		ircuit is broken, energy g	oes off into the air.		
			necessary.		ricity comes out of both			
			,	and leads to both sides		,		
			Observing and	•	ent, voltage and electrici	ty are all the same		
			Measuring	thing.	and remaje and electric	t, are an energene		
			Children will use a		ent gets less as it passes t	hrough		
			range of scientific	components.	one gotto roos ao re passes r	5 2 6		
			equipment to make	· ·	tricity is an object that ca	n he seen		
			systematic and	Wilsconceptions o Elec	therey is all object that ca	in be seen.		
			careful observations					
			with increased					
			complexity.					
			complexity.					
			Recording					
			Children will record					
			data and results of					
			Increasing complexity					
			using scientific					
			diagrams and labels,					
			classification keys,					
			tables, scatter graphs,					
			bar and line graphs.					
			Take measurements,					
			using a range of					
			scientific equipment,					
			with increasing					
			accuracy and					
			precision, taking					
			repeat readings					
			when appropriate.					
			Interpreting Passilts					
			Interpreting Results Children will use					
			scientific evidence to					
			answer questions					

г		
		Identify scientific evidence that has been used to support or refute ideas or arguments.  Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.  Evaluating Children will use test results to make predictions to set up further comparative and fair tests.  Suggest investigation improvements including accuracy
		improvements including accuracy
		of results.  Provide some
		simple examples of
		how to extend the
	1	investigation.
Oracy	Ignite speech: cl	se a force, and tell the class how we come across that force in our daily life.
opportunities		
for spring Term		
ioi spinig i cilii		

Summer	Recognise that living things have	Recognise that living	Asking Questions	Who was Charles	All living things have a		50 things: Eat	Sex:	Outstanding science
	changed over time and that	things have changed	Children will ask	Darwin?	common ancestor – a	Adaptation Inherited	something you have	Ruth Ella Moore	Hamilton trust
Evolution and	fossils provide information about	over time and that	relevant scientific		bacterium that lived	traits Inheritance	grown (ready steady	(micro biologist)	Science folder
Inheritance	living things that inhabited the	fossils provide	questions and choose	How are fossils	billions of years ago.	Adaptive traits	cook)		resources
	Earth millions of years ago.	information about	which enquiry type	formed and how long	The elecations	Natural selection DNA	Dianting and arewing		
	December that living things	living things that	would be best suited	(on average) do they	The closest living	Genes	Planting and growing		
	Recognise that living things produce offspring of the same	inhabited the Earth millions of years ago	to answer them.	take to form?	relation of birds is the crocodile.	Variation	plants in classroom and outdoors.		
	kind, but normally offspring vary	Tillillolis of years ago	Making Predictions	Are inherited	crocoune.	Micro organism Taxonomy	and outdoors.		
	and are not identical to their	Recognise that living	Children will Children	characteristics always	Darwin said that	Taxonomy			
	parents.	things produce	will make predictions	physical?	monkeys, apes and		Nature Walk		
	parents.	offspring of the same	based on scientific	priysicar:	humans had a		Nature Walk		
	Identify how animals and plants	kind, but normally	knowledge.	What is the difference	common ancestor.		Gardening		
	are adapted to suit their	offspring vary and are	Knowiedge.	between inherited	common unecstor.		Gurucining		
	environment in different ways	not identical to their		and acquired	Humans, unlike other				
	and that adaptation may lead to	parents	Setting up tests	characteristics?	animals, have				
	evolution.	parents	Plan different types		opposable thumbs				
		Identify how animals	of scientific enquiries	How do animals and	making it easier for us				
		and plants are adapted	to answer questions,	plants adapt to their	to pick things up and				
		to suit their	Including recognising	environment?	hold things.				
		environment in	and controlling						
Living Things		different ways and that		How could adaptation	Up until 10,000 years				
and Their		adaptation may lead to	necessary.	lead to evolution?	ago, all humans had				
Habitats	describe how living things are	evolution			brown eyes.				
	classified into broad groups		Observing and	What is a fungus?					
	according to common		Measuring		Microorganisms are				
	observable characteristics and	Describe how living	Children will use a		found in almost every				
	based on similarities and	things are classified	range of scientific		habitat present in				
	differences, including micro-	into broad groups	equipment to make		nature.				
	organisms, plants and animals	according to common	systematic and						
		observable	careful observations	Possible Misconception	ns:				
	give reasons for classifying plants	characteristics and	with increased	Evolution					
	and animals based on specific	based on similarities	complexity.	1	ronmental change can b	· · · · · · · · · · · · · · · · · · ·			
	characteristics	and differences,	Describes		s lambs will be born wit				
		including micro-	Recording Children will record		nans used to be monkey	•			
		organisms, plants and animals	data and results of	Misconceptions 3 An i	ndividual can evolve du	iring its own lifespan			
		allillais	Increasing complexity	Misconceptions 4 Evol	lution produces living th	nings perfectly			
		Give reasons for	using scientific	adapted to their envi	ronment				
		classifying plants and	diagrams and labels,	Misconceptions 5. Nati	ural selection is an activ	e process, ie an			
		animals based on	classification keys,	individual or a specie	s can try to adapt				
		specific characteristics	tables, scatter graphs,	. Misconceptions 6 Nat	cural selection is always	good for the species			
			bar and line graphs.	Misconceptions 7 . Evo	lution and religion are i	incompatible			
			Take measurements,						
			using a range of						
			scientific equipment,						
			with increasing						
			accuracy and						
			precision, taking						
			repeat readings						
			when appropriate.						
			Interpreting Decults						
				i .			1	I	İ
			Interpreting Results						
			Children will use scientific evidence to						

		Identify scientific evidence that has been used to support or refute ideas or arguments.  Report and	
		present findings	
		from enquiries,	
		including	
		conclusions, causal	
		relationships and	
		explanations of	
		and a degree of	
		trust in results, in	
		oral and written	
		forms such as	
		displays and other	
		presentations.	
		Evaluating	
		Children will use test	
		results to make	
		predictions to set up further comparative	
		and fair tests.	
		Suggest investigation	
		improvements	
		including accuracy	
		of results.	
		Provide some	
		simple examples of	
		how to extend the	
		investigation.	
Oracy	Hot seating: asking	win questions about evolution and inheritance.	
opportunities			
for summer			
Term			