Topics	EYFS Nursery	EYFS Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning and length of unit.	Development Matters - UoTW: The Natural World	Development Matters - UoTW: The Natural World	The Education People Scheme / NC	The Education People Scheme / NC	The Education People Scheme / NC	The Education People Scheme / NC	The Education People Scheme / NC	The Education People Scheme / NC
Living things and their habitats/ <u>seasonal</u> change (y1) and evolution and inheritance (y6) Substantive Knowledge	 Understand the key features of the 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. 	 Recognise some environments that are different from the one in which they live. Understand the effect of changing seasons on the natural world around them. Early Learning Goals - Explore the natural world around them, making observations and drawing pictures of animals and plants. 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. 	 Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. 	 Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. 		 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 environment. Recognise that environments can change and that this can sometimes pose dangers to living things. 	 Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals. 	 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organism s, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.

- Understand			 Identify how
some			animals and
important			plants are
processes and			adapted to suit
changes in the			their
natural world			environment in
around them,			different ways
including the			and that
seasons and			adaptation may
changing			lead to
states of			evolution.
matter.			

Disciplinary	• Explore and	• Explore the	Asking simple	Asking simple	Gathering
Knowlodgo	respond to	natural world	questions and	questions and	recording,
Knowledge	different	around them.	recognising	recognising that	classifying and
(working	natural	Describe what	that they can	they can be	presenting da
scientifically)	phenomena in	they see, hear	be answered	answered in	in a variety of
	and on trins		ways	 Observing 	answering
	 Talk about 	outside.	 Observing 	closely, using	questions.
	what they see,		closely, using	simple	Reporting on
	using a wide		simple	equipment.	findings from
	vocabulary.		equipment.	Using their	enquiries,
			Performing simple tests	observations and	including oral
			 Identifying 	answers to	explanations.
			and	questions	displays or
			classifying.	gathering and	presentations
			 Using their 	recording data to	of results and
			observations	help in	conclusions.
			and ideas to	answering	
			answers to	questions.	
			questions		
			gathering and		
			recording data		
			to help in		
			answering		
			questions.		

•	Planning	•	Recording data
	different types		and results of
	of scientific		increasing
	enquiries to		complexity
	answer		using scientific
	auestions.		diagrams and
	including		labels.
	recognising and		classification
	controlling		kevs tables
	variables where		scattor graphs
			bar and line
-	Necessary.		graphs
•	Recording data		graphs.
		•	identifying
	increasing		scientific
	complexity		evidence that
	using scientific		has been used
	diagrams and		to support or
	labels,		refute ideas or
	classification		arguments.
	keys, tables,	•	Planning
	scatter graphs,		different types
	bar and line		of scientific
	graphs.		enquiries to
			answer
Non st	atutory -		questions,
•	To be able to		including
	recognise which		recognising and
	secondary		controlling
	sources will be		variables where
	the most useful		necessary.
	for their	•	Taking
	research.		measurements,
			using a range of
			scientific
			equipment,
			with increasing
			accuracy and
			precision.
			taking repeat
			readings when
			annronriate
		•	Recording data
			and results of
			increasing
			complexity
			using scientific
			diagrams and
			ulagrams and
			labels,
			classification
			keys, tables,

Key Vocabulary	Autumn Winter Spring Summer Life cycle Weather	Autumn Winter Spring Summer Life Cycle Weather	Tier 2: season, changes, autumn, winter, spring, summer, weather, sunrise, sunset Tier 3: temperature Disciplinary: answer, classify, communicate, compare, data, enquiry, equipment, gather, group,	Tier 2: living, features, move, feed, grow, senses, shelter, depend/survive, suitability, transfer, environment Tier 3: reproduce, habitat, microhabitat, source, nutrients, energy, food chain, producer, prey, predator Disciplinary: answer, classify, communicate.	Tier 2: group, category, key, flowering, non-flowering, environment, surroundings, conditions, natural, human-made, endangered, extinct, positive, negative, indifferent, protect, manage, impact Tier 3: classification, vertebrate,

	scatter graphs,
	bar and li -ne
	graphs.
	 Reporting and
	presenting
	findings from
	enquiries,
	including
	conclusions
	causal
	relationships
	and
	and degree of
	trust in results,
	in oral and
	written forms
	such as displays
	and other
	presentations.
	 Identifying
	scientific
	evidence that
	has been used
	to support or
	refute ideas or
	arguments
	• To be able to
	recognise which
	secondary
	sources will be
	sources will be
	most useful to
	research ideas
	(non-statutory).
Tier 2:	Tier 2:
lifecycle, natural world,	insects, algae, moss,
expertise, observe,	tern,
document, study	conifer, bacteria
Tier 3:	Tier 3:
stages of development,	vertebrate/non-vertebr
sexual,	ate,
asexual, reproduction,	taxonomy, arachnids,
larvae, embryo,	crustaceans,
metamorphosis,	millipedes, annelids,
naturalist, sexual/	echinoderms, molluscs,
asexual reproduction,	coelenterates,
pistal/carpel,	dichotomous key,
stigma, style, ovary,	ginkgoes, angiosperms,
stamen, anther,	microorganism,
	microbes, fungi,

		identify, measure, observe, pattern, practical activity, question, record, relationship, secondary source, sort, test	compare, data, enquiry, equipment, gather, group, identify, measure, observe, pattern, practical activity, question, record, relationship, secondary source, sort, test	invertebrate, spores, dichotomous key, urbanisation, deforestation, pollution, climate change, population, fossil fuels, natural disaster, human impact, Venn diagram, conservation Disciplinary: analyse, bar change, chart, classify, comparative test, conclusion, data, data logger, diagram, display, enquiry, equipment, evidence, explain, fair test, findings, gather, group, identify, key, measurement, note, observe, pattern, predict, present, process, question, record, relationship, results, secondary source, similarity, sort, standard unit, systematic, table, thermometer, value	nectar, pollen, pollination, fertilisation, dispersal, tuber, bulb, runner, clone, vegetative propagation, sperm, egg, external/internal fertilisation Disciplinary: causal relationship, classification key, comparative test, conclusion, control, diagram, enquiry, equipment, evidence to support/refute, fair test, graph (scatter/bar/line), informationrecord, measurement, observation, pattern, prediction, repeat reading, research, results, secondary source, table, variable	protists Disciplinary: causal relationship, classification key, comparative test, conclusion, control, diagram, enquiry, equipment, evidence to support/refute, fair test, graph (scatter/bar/line), information record, measurement, observation, pattern, prediction, repeat reading, research, results, secondary source, table, variable Tier 2: diversity, siblings, characteristics, traits, habitats, climate, extinction, crossbreed Tier 3: evolution, mould/body/trace/ cast fossil, fossil record, species, variation, inheritance, inherited/environment al variation, selective-breeding, natural selection, adaptation, organism, pollinators
STEM Sentences		I have noticed that	I have noticed that I know this because	is the same as	I predict	In my investigation I found out
		is the same		This is because	I think this because	I know this because
		as is it	is the same as	is it different		my results show that
		different to		to	To make my test fair I	
			This is because	This is because	will	I halloug that the
		I predict that	is it different	In my investigation I	·····	scientific explanation

			I have found out	to This is because I have found out This tells me that		found out I know this because my results show that I would now like to know	The variables I will change/keep the same are By doing this I expect 	for this is
Animals inc humans Substantive Knowledge	 Understand the key features of the 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. 	 Early Learning Goal - Explore the natural world around them, making observations and drawing pictures of animals and plants. 	 Identify and name a variety of common animals that are birds, fish, amphibians, reptiles 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 (birds, fish, amphibians, reptiles and mammals, and including pets). Identify, name, draw and label the basic parts of the human body and say which parts of the body is associated with each sense. 	 Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	 Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some animals have skeletons and muscles for support, protection and movement. 	 Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey. 	 Describe the changes as humans develop from birth to old age. 	 Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.
Disciplinary Knowledge	 Talk about what they see, using 	• Describe what they see, hear	 Observing closely, using 	 Observing closely, using 	 Asking relevant questions and using different 	 Asking relevant questions and using different 	 To be able to raise different types of 	 Planning different types of scientific

	a	end for the bill	e incertes	a:	b	h
(working scientifically)	a wide vocabulary.	and reel whilst outside.	 simple equipment. Identifying and classifying. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions. Using secondary sources to find out information (non statutory). Able to sort and group animals. 	simple equipment. Performing simple tests. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	 types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using straightforward scientific evidence to answer questions or to 	 types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using straightforward scientific evidence to answer questions. or to

	questions
	(non-statutory).
•	Planning
	different types
	of scientific
	enquiries to
	answer
	questions,
	including
	recognising and
	controlling
	variables where
	necessary -
•	Recording data
	and results of
	Increasing
	complexity
	diagrams and
	labola
	dauers,
	kovs tables
	scatter granhs
	har and line
	granhs
•	Reporting and
•	presenting
	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.
•	Identifying
	scientific
	evidence that
	has been used
	to support or
	arguments
	arguments.

enquiries to answer questions, including recognising and controlling variables where necessary.

- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Reporting and presenting 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.

					support their	support their		
					findings.	findings		
Key Vocabulary	Life cycle	Life cycle	Tier 2:	Tier 2:	Tier 2:	Tier 2:	Tier 2:	Tier 2:
		Hibernate	head, neck, arms,	growth, human, child,	growth, carbohydrate,	teeth, digestive system,	toddler, stages,	pump, heart, lifestyle,
		Cocoon	elbows, legs, knees,	toddler, teenager, adult,	fat, protein, dairy,	mouth, tongue,	lifecycle, puberty,	drugs, medicine, illegal,
			face, ears, eyes, hair,	survive, shelter,	domestic, pet,	stomach, adaptation,	pubic hair, breasts,	vitamins
			mouth, teeth, tongue,	exercise, muscles, heart,	environment, diet,	energy, prey, predator	periods, womb,	Tier 3:
			feet, hands, torso,	lungs, brain, meat, fruit,	behaviour,	Tier 3:	chemical, mass	circulatory system,
			skin, senses,	vegetables, dairy, fat,	company, health and	incisor, canine, molar,	Tier 3:	organ, blood, vessels,
			ears/hearing,	sugar, healthy, portion	welfare, skeleton, skull,	premolar, carnivore,	embryo, foetus,	arteries, veins,
			hands/touch,	Tier 3:	ribcage, spine,	omnivore, herbivore,	adolescent, hormones,	capillaries, living
			nose/smell,	offspring, lifecycle,	muscle, relax, contract,	oesophagus, small and	genes,DNA, oestrogen,	cells, oxygen, carbon
			eyes/signt,	limbs, reproduce,	Tier 3:	large intestine, food	testosterone,	dioxide, deoxygenated,
			tongue/taste, birds,	energy, air (oxygen),	nutrition, energy,	chain, producer,	pitultary gland,	oxygenated, platelets,
			heathe law young	temperature, nygiene,	calcium, joints, organs,	primary/secondary/	reproduction,	plasma, red/white
			diet	Dissiplingry	Disciplinary	Disciplinary	menstruation,	single/deuble
			Tior 3:	answor classify	analysa har change	analyso	vivinarous zvroto	single/double
			characteristic cold_/	communicate compare	chart classify	har change chart	Disciplinary:	system nicotine
			warm-blooded	data enquiny	comparative test	classify comparative	causal relationshin	coffeine proteins
			mammal	equinment gather	conclusion data data	test conclusion data	classification	stimulant
			rentile amphihian	group identify	logger diagram	data logger	key comparative test	hallucinogen
			carnivore.	measure, observe.	display, enquiry,	diagram, display,	conclusion.	depressant, nicotine.
			omnivore, herbivore	pattern, practical	equipment.	enquiry, equipment.	control, diagram.	ethanol
			Disciplinary:	activity, question.	evidence, explain, fair	evidence, explain, fair	enquiry.	Disciplinary:
			question/answer.	record, relationship.	test. findings.	test, findings.	equipment, evidence	causal relationship.
			observe,	secondary	gather, group, identify,	gather, group, identify,	to support/refute, fair	classification key,
			identify, classify, test	source, sort, test	key, measurement,	key, measurement,	test, graph	comparative
					note, observe, pattern,	note, observe, pattern,	(scatter/bar/line),	test, conclusion,
					predict, present,	predict, present,	informationrecord,	control, diagram,
					process, question,	process, question,	measurement,	enquiry,
					record, relationship,	record, relationship,	observation,	equipment, evidence
					results, secondary	results, secondary	pattern, prediction,	to support/refute, fair
					source, similarity, sort,	source, similarity, sort,	repeat reading,	test, graph
					standard unit,	standard unit,	research, results,	(scatter/bar/line),
					systematic, table,	systematic, table,	secondary	informationrecord,
					thermometer, value	thermometer, value	source, table, variable	measurement,
								observation, pattern,
								prediction, repeat
								reading, research,
								results, secondary
								source, table, variable
STEM Sentences			I have noticed that	I have noticed that	I predict	I predict	I predict	I predict
				I know this because	I think this because			
			is the same			I think this because	I think this because	I think this because
			as					
			is it	is the same as	To make my test fair I			

		-			-			•
			different to		will	To make my test fair I	To make my test fair I	To make my test fair I
				This is because		will	will	will
					I have found out			
			I have found out	is it different		In my investigation I	I will do this because	I will do this because
				to	Therefore my	found out		
				This is because	prediction was			
						I know this because	The variables I will	The variables I will
				I predict that	In my investigation I	my results show that	change/keep the same	change/keep the same
				I think this because	found out		are	are
				I have found out	I know this because	I would now like to	By doing this I expect	By doing this I expect
				This tells me that	my results show that	know		
						I have found out	I have found out	I have found out
					I would now like to	The surface serves	The surface state	The surface server
					know	Ineretore my	Ineretore my	Therefore my
						prediction was	prediction was	prediction was
							My prodiction was	My prodiction was
							sorrest because	orrect because
								correct because
							In my investigation I	
							found out	
							I know this because	
							my results show that	
							I believe that the	
							scientific explanation	
							for this is	
Matorials and	Talk about the	Early Learning Goals -	 Distinguish 	 Identify and 	Compare and	Compare and	Compare and	
	differences	- Explore the	between and	compare the	group together	group materials	group together	
states of matter	between	natural world	object and the	suitability of a	different kinds	together.	everyday	
and <u>rocks</u>	materials and	around them,	material from	variety of	of rocks on the	according to	materials on	
	changes they	making	which it is	everyday	basis of their	whether they	the basis of	
	notice.	observations	made.	materials,	appearance and	are solids,	their	
		and drawing	 Identify and 	including wood,	simple physical	liquids or gases.	properties,	
		pictures of	name a variety	metal, plastic,	properties.	Observe that	including their	
		animals and	of everyday	glass, brick, rock,	Describe in	some materials	hardness,	
Substantivo		plants.	materials,	paper and	simple terms	change state	solubility,	
Substantive		- Know some	including	cardboard for	how fossils are	when they are	transparency,	
Knowledge		similarities	wood, plastic,	particular uses.	formed when	heated or	conductivity	
		and	glass, water	Find out how the	things that have	cooled, and	(electrical and	
		differences	and rock.	shapes of solid	lived are	measure or	thermal), and	
		between the	Describe the	objects made	trapped within	research the	response to	
		natural world	simple	from some	rock.	temperature at	magnets.	
		around them	physical	materials can be	 Recognise that 	which this	 Understand 	
		and	properties of a	changed by	soils are made	happens in	that some	
		contrasting	variety of	squashing,			materials will	

	 environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. 	 everyday materials. Compare and group together a variety of everyday materials on the basis of their physical properties. 	bending, twisting and stretching.	from rocks and organic matter.	degrees Celsius (°C). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

	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	
	mixtures might	
	be separated,	
	including	
	through	
	filtering, sieving	
	and	
	evaporating.	
٠	Give reasons,	
	based on	
	evidence from	
	comparative	
	and fair tests,	
	for the	
	particular uses	
	of everyday	
	materials,	
	including	
	metals, wood	
	and plastic.	
٠	Demonstrate	
	that dissolving,	
	mixing and	
	changes of	
	state are	
	reversible	
	changes.	
٠	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.	
Disciplinary Knowledge (working scientifically)	 Explore materials with different properties. Explore natural materials, indoors and outside. Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. 	 Explore the natural world around them. Describe what they see, hear and feel whilst outside. 	 Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions. Make simple measurement s with equipment (non-statutory). 	 Asking simple questions and recognising that they can be answered in different ways. Performing simple tests. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions. Use simple secondary sources to find answers (non-statutory) To be able to talk about what they have found out and how they have found it out (non-statutory). To be able to, with help, notice relationships (non-statutory). 	 Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 	 Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. 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 for new values, suggest improvements and raise further questions. Using straightforward scientific evidence to answer 	 Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal 	

						questions or to	relationships	
						support their	and	
						findings.	explanations of	
							and degree of	
							trust in results,	
							in oral and	
							written forms	
							such as displays	
							and other	
							presentations.	
Key Vocabulary	plastic	plastic	Tier 2:	Tier 2:	Tier 2:	Tier 2:	Tier 2:	
	wood	wood	object, wood, plastic,	wood, metal, plastic,	rock, material, Earth,	melt, temperature,	material, mixture,	
	glass	glass	metal, rock, water;	glass,	remains, heat,	freeze,melt	burning, rust	
	bricks	bricks	hard/soft;	brick, rock, paper,	pressure, durable,	Tier 3:	Tier 3:	
	metal	metal	stretchy/stiff;	cardboard, strong,	preserve,	states of matter, solid,	thermal, conductor,	
	leather	leather	shiny/dull;	waterproof, bounce, grip	decay, earthworm,	liquid, gas, matter,	insulator, transference,	
		melting	rough/smooth;	(sole), squash, bend,	leaves, soil	mass, volume,	independent/depende	
		floating	bendy/not bendy;	twist, stretch,	Tier 3:	particles, properties,	nt/controlled variable,	
		hot	waterproof/not	stretchy/not stretchy,	mineral, crust,	water vapour,	dissolve, solid,liquid,	
		cold	waterproof.	fabric,	formation,	melting point, freezing	gas, states of matter,	
		freezing	Tier 3:	Tier 3:	physical properties,	point, condensation,	solution, filtration,	
			properties, material,	property, material,	metamorphic,	evaporation, water	sieving, evaporation, per	
			opaque/transparent	object,	sedimentary, igneous,	cycle, precipitation,	meable, vapour,	
			absorbent/not	suitability, purpose,	grains, molten,	water vapour	particles, irreversible,	
			absorbent	solid, fair test	magma, lava, crystals,	Disciplinary:	chemical changes, acid	
			Disciplinary:	Disciplinary:	permeable,impermeab	analyse, bar change,	Disciplinary:	
			answer, classify,	answer, classify,	le, sediment, fossil,	chart, classify,	causal relationship,	
			communicate,	communicate, compare,	palaeontologist,	comparative test,	classification key,	
			compare, data,	data, enquiry,	fossilisation, organic	conclusion, data,	comparative test,	
			enquiry, equipment,	equipment, gather,	matter, erode	data logger, diagram,	conclusion, control,	
			gather, group,	group, identify,	Disciplinary:	display, enquiry,	diagram, enquiry,	
			identify, measure,	measure, observe,	analyse, bar	equipment, evidence,	equipment, evidence	
			observe, pattern,	pattern, practical	change, chart, classify,	explain, fair test,	to support/refute, fair	
			practical activity,	activity, question,	comparative test,	findings, gather, group,	test, graph	
			question,	record, relationship,	conclusion, data, data	identify,	(scatter/bar/line),	
			record, relationship,	secondary source, sort,	logger, diagram, display,	key, measurement,	information record,	
			secondary source,	test	enquiry, equipment,	note, observe,	measurement,	
			sort,		evidence, explain, fair	pattern,predict,	observation, pattern,	
			test		test, findings, gather,	present, process,	prediction, repeat	
					group, identify, key,	question, record,	reading, research,	
					measurement, note,	relationship, results,	results, secondary	
					observe,pattern,	secondary source,	source, table, variable	
					predict, present,	similarity, sort,		
					process,	standard unit,		
					question, record,	systematic, table,		
					relationship, results,	thermometer, value		
					secondary source,			
					similarity, sort,			
					standard unit,			1

					systematic, table,			
					thermometer, value			
STEM Sentences			I have noticed that	I have noticed that	is the same as	I predict	I predict	
				I know this because				
			is the same		This is because	I think this because	I think this because	
			as					
				is the same as	is it different			
			is it		to	To make my test fair I	To make my test fair I	
			different to	This is because	This is because	will	will	
				is it different	I predict	In my investigation I	I will do this because	
			I have found out	to	I think this because	found out		
				This is because			The variables I will	
						I know this because	change/keep the same	
				I predict that	To make my test fair I	my results show that	are	
				I think this because	will			
							By doing this I expect	
				I have found out	I have found out	I would now like to		
				This tells me that		know	_	
					Therefore my		The equipment I have	
					prediction was	have found out	chosen to use is	
					In my investigation I	Therefore my	I have chosen this	
					found out	prediction was	because	
					I know this because		I expect to find	
					my results show that			
							is the same as	
					I would now like to			
					know		This is because	
							is it different	
							to	
Plants	Plant seeds and care	 Understand the 	 Identify and 	Observe and	 Identify and 			
	for growing plants.	effect of changing	name a variety	describe how	describe the			
	Understand the key	seasons on the	of common	seeds and bulbs	functions of			
	features of the life	natural world	plants,	grow into mature	different parts			
Substantive	cycle of a plant and	around them.	including	plants.	of plants; roots,			
Knowledge	an animal.	Ford the sector for the	garden plants,	Find out and	stem, leaves			
Ŭ	Begin to	Early Learning Goals -	wild plants	describe now	and flowers.			
	to respect and care	- Explore the	those	piants need	Explore the requirements of			
	for the natural	around thom	classified as	suitable	plants for life			
	environment and all	around them,	deciduous and	temperature to	and growth (air			
	living things	observations		grow and stay	light water			
	inving trilles.	and drawing	 Identify and 	healthy	nutrients from			
		nictures of	describe the	incarcity.	soil and room			
		pietares or	basic structure		to grow) and			

		 animals and plants. 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter 	of a variety of common plants including roots, stem/trunk, leaves and flowers.		 how they vary from plant to plant. Investigate the ways in which water is transported within plants. Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	
Disciplinary Knowledge (working scientifically)	Talk about what they see, using a wide vocabulary.	 Describe what they see, hear and feel whilst outside. Explore the natural world around them. 	 Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Identifying and classifying. To be able to sort and group (non-statutory). 	 Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Using their observations and ideas to suggest answers to questions gathering and recording data to help in 	 Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers 	

			-				
					answering	and data	
					questions.	loggers.	
					 To sort objects 	 Gathering, 	
					using observable	recording,	
					features	classifying and	
					(non-statutory).	presenting data	
						in a variety of	
						ways to help in	
						answering	
						questions.	
						 Using results to 	
						draw simple	
						conclusions.	
						make	
						predictions for	
						new values.	
						suggest	
						improvements	
						and raise	
						further	
						questions	
						straightforward	
						scientific	
						evidence to	
						answer	
						auestions or to	
						support their	
						findings	
		netal	netal	Tier 2.	Tier 2:	Tier 2.	
	Key vocabulary	root	root	nlants wild plants	seed bulb plant	seed narent nlant	
		flower	flower	garden nlants weeds	protect mature roots	roots stem leaves	
		soil	soil	trees seeds root	shoot food supply	trunk/hranches	
		grow	grow	shoot soil magnifying	temperature	flowers transport	
		nature	nature	glass flower netal	Tior 3.	absorb tubes	
		hatare		stem leaf/leaves	coat food store seed	flower pollen nectar	
				tree trunk hark	leaves germination	attract	
				hranch blossom	nutrients absorb	Tier 3.	
				acorn	energy lifecycle	dispersal germination	
				Tier 3.	reproduce	root hair function	
				local plant names	Disciplinary:	nutrients carbon	
				hand lens common	answer classify	diovide growth rate	
ļ				tree names	communicate compare	nutrient drought	
				deciduous evergroop	data enquiry	climate pollination	
ļ				Disciplinary	equipment gathor	reproduce	
				answer classify	group identify	Disciplinary	
				communicato	measure obsorve	analyse har change	
				compare data	nattorn practical	chart classify	
ļ				enquiry equipment	activity question record	comparativo toct	
				gathor group identify	activity, question, record,	comparative test,	
				gather, group, identify,		Conclusion, data,	

	measure, observe, pattern,practical activity, question, record,relationship, secondary source, sort, test	relationship,secondary source, sort, test	data logger, diagram, display, enquiry, equipment, evidence, explain, fair test, findings, gather, group, identify, key, measurement, note, observe, pattern, predict, present, process, question, record, relationship, results, secondary source, similarity, sort, standard unit, systematic, table, thermometer, value	
STEM Sentences	I have noticed that is the same as is it different to 	I have noticed that I know this because is the same as This is because This is because This is because I predict that I predict that I think this because I have found out This tells me that	 is the same as This is because This is because is it different to I predict I predict I predict I predict To make my test fair I will I have found out Therefore my prediction was In my investigation I found out I know this because my results show that 	
Light			 Recognise that they need light in order to see things and that 	

Recognise that
light appears to
travel in
straight lines.

Substantive Knowledge				 dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and 	
				 that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the sizes of shadows change. 	
Disciplinary Knowledge (working scientifically)	 Repeat actions that have an effect. Explore materials with different properties. Explore natural materials, indoors and outside. Explore and respond to different natural phenomena in their setting and on trips. Use all their senses in hands-on exploration of natural materials. Explore collections of materials with 	 Explore the natural world around them. Describe what they see, hear and feel whilst outside. Early Learning Goal - Explore the natural world around them. 		 Asking relevant questions and using different types of scientific enquiries to answer them. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Using results to draw simple conclusions, make 	

•	Use the idea
	that light
	travels in
	straight lines to
	explain that
	objects are
	seen because
	they give out or
	reflect light into
	the eve.
•	, Explain that we
	see things
	because light
	travels from
	light sources to
	our eves or
	from light
	sources to
	objects and
	then to our
	eves
•	Use the idea
	that light
	travels in
	straight lines to
	explain why
	shadows have
	the same shane
	as the objects
	that cast them
•	Planning
	different types
	of scientific
	enquiries to
	answer
	auestions
	including
	recognising and
	controlling
	variables where
	necessary
	Using test
	results to make
	predictions to
	set up further
	comparative
	and fair tests
	Reporting and
	presenting
	findings from

	similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Explore how things work. • Talk about the differences between materials and changes they notice.			predictions for new values, suggest improvements and raise further questions.	
Key Vocabulary	Light Dark	Light Dark Shadow		Tier 2: light, reflect, visible, visibility, dark, shiny, bright, dull, matt, mirror, angle, shadows, position, direction, damage, protection, sunrise, sunset, rotation, compass direction Tier 3: light source, opaque, translucent,transparent , filters, UV rays,retina, pupil Disciplinary: analyse, bar change, chart, classify, comparative test, conclusion, data, data logger, diagram, display, enquiry, equipment, evidence, explain, fair test, findings, gather, group, identify, key, measurement, note, observe, pattern,	

enquiries
including
conclusions
causal
relationshins
and
explanations of
and degree of
trust in results
in oral and
written forms
such as displays
and other
nresentations
 Identifying
scientific
evidence that
has been used
to support or
refute ideas or
arguments.
Tier 2:
beam, ray, shadow,
cast, object, reflect,
light source,
Tier 3:
energy, distortion,
factor, incident ray,
reflected ray, angle
of incidence, angle of
reflection,normal line,
phenomenon,
refraction, spectrum,
prism
Disciplinary:
causal relationship,
classification key,
comparative test,
conclusion, control,
diagram, enquiry,
equipment, evidence
to support/refute, fair
test, graph
(scatter/bar/line),
mormation record,
measurement,
observation, pattern,
prediction, repeat
reading, research,
results, secondary

				predict, present, process, question, record, relationship, results, secondary source, similarity, sort, standard unit, systematic, table, thermometer, value	
STEM Sentences				Therefore my prediction was In my investigation I found out I know this because my results show that 	
Forces and Magnets	• Explore and talk about different forces they can feel.	Early Learning Goals - - Understand some important processes and		 Compare how things move on different surfaces. 	

	source, table, variable
	I predict
	I think this because
	To make my test fair I will
	I will do this because
	The variables I will change/keep the same are
	I have found out
	Therefore my prediction was
	My prediction was correct becausein doing this I expect
	In my investigation I found out
	I know this because my results show that
	I believe that the
	for this is
Explain that	
unsupported	
objects fall	
Earth because	

Subschriftee Knowledge Repeat actions that have an effect. Repeat actions that there is repeat actions that have an effect. Setting up Setting up	Cubatantina		changes in the			Notice that	
Knowledge around them. around them. around them. around them. around them. around them. around them. around them. between two around them. around them. between two compacts attract	Substantive		natural world			some forces	
Disciplinary Knowledge (working scientifically) • Repeat actions that there are first. Early Learning Goals - • Explore and actions that there are a first. • Repeat actions that there are a first. Image: Line are a first. Scientifically) • Repeat actions that there are a first. • Repeat actions that there are a first. • Early Learning Goals - • Explore and around them.	Knowledge		around thom			nond contact	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore the magnetion in their setting and on trips. • Appendix function in the setting and on trips. • Early Learning Goals - • Explore the magnetic and explore the explore the	-					hetwoon two	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect: • Repeat actions that have an effect: • Splore rate • Repeat actions that have an effect: • Splore rate • Repeat actions that have an effect: • Splore rate • Splor						objects but	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an decimal strate or comparents with different actual phenomena in their seting and on trips. • Interpretation comparents compar						magnatic forces	
Disciplinary • Repeat actions that have an effect. Now angets situation of the points so that have an effect. Source and source an						inagrietic iorces	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore materials • Explore materials • Explore the first thing and on trips. • Repeat actions that have an effect. • Explore the first thing and on trips. • Repeat actions that have an effect. • Explore the first thing and on trips. • Repeat actions that have an effect. • Explore the first thing and on trips. • Repeat actions that have an effect. • Explore the first thing and on trips. • Isoty of the first thing and on trips. • Setting up source and group together a suntative of everyday materials and other. • Compare and group together a suntative everyday materials and not others. • Compare and group together a suntative everyday materials on the first thing and on trips.						can act at a	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore materials • Report to the profile • Repeat actions that have an effect. • Explore materials • Explore materia						distance.	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore the naturals of the basis • Repeat actions that have an effect. • Explore the naturals world around them. • Setting up simple for the source of the soure of the source of the source of the source					•	Observe how	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore materials with different prostress. Early Learning Goals - • Explore materials with different prostress. • Repeat actions that have an effect. • Explore materials with different prostress. Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore materials with different prostress. Early Learning Goals - • Explore materials with different prostress. • Setting up simple practical enquiries, comparative around them.						magnets attract	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore and report to the seting and on trips. • Early Learning Goals - • Explore and report to the seting and on trips. • Repeat actions that have an effect. • Explore and report to the seting and on trips. • Repeat actions that have an effect. • Explore and report to the seting and on trips. • Repeat actions that have an effect. • Seting up • Setting up						or repel each	
Disciplinary • Repeat actions that have an effect. • Explore materials there are the setting and on trips. • Explore materials and not others. • Compare and group together a vorlety of everyday materials on the basis of whether they are attracted to a magnet. And identify some magnetic materials. Disciplinary • Repeat actions that have an effect. • Explore materials with different natural world around them. • Setting up schematical equivalence and group together a vorlety of everyday materials on the basis of whether they are attracted to a magnets. Disciplinary • Repeat actions that have an effect. • Explore the natural world around them. • Setting up schematical equivalence and group together a vorlet world around them. properties. • Explore and respond to different natural world around them. • Setting up schematic and careful observations and fair tests making making systematic and careful observations and trips.						other and	
Disciplinary Knowledge (working scientifically) • Repeat actions that there and effect. • Explore and respond to different natural phenomena in their seting and on trips. • Repeat actions that • Repeat actions that have an effect. • Explore and respond to different natural and identify some magnetic • Predict whether two magnets • Repeat actions that have an effect. • Explore the natural world around them. • Repeat actions that • Repeat actions that have an effect. • Explore the natural world around them. • Repeat actions that • Setting up simple practical enquiries, • Setting up systematic and careful observations and, where anonomize						attract some	
Disciplinary Knowledge (working scientifically) • Repeat actions that the sating and on trips. • Repeat actions that the seting acting and on trips. • Repeat actions that t						materials and	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials • explore materials<						not others.	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips. • Early Learning Goals - • Explore the natural world around them. • Setting up systematic and careful other.					•	Compare and	
Disciplinary Knowledge (working scientifically) • Repeat actions that Properties. Farly Learning Goals - 						group together	
Disciplinary Knowledge (working scientifically) • Repeat actions that have an effect. Early Learning Goals - • Explore and respond to different natural phenomena in their setting and on trips. • Bepeat actions that have an effect. • Bepeat actions that have an effect. • Setting up around them.						a variety of	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect.Early Learning Goals - natural world around them.• Setting up simple practical erspond to different properties.Early Learning Goals - natural world around them.• Setting up simple practical erspond to different properties.Disciplinary knowledge (working scientifically)• Repeat actions that have an effect. • Explore and respond to different properties. • Explore and respond to different around them. > and where around them.It is a setting and on trips.It is a setting and on trips.It is a setting and on trips.						everyday	
Disciplinary • Repeat actions that have an effect. Early Learning Goals - Explore and respond to different natural phenomena in their setting and on trips. • Setting up systematic and careful around them.						materials on	
Disciplinary Knowledge (working scientifically)• Repeat actions that • Explore and respond to different natural phenomena in their setting and on trips.• Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and where and, where						the basis of	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up systematic and careful observations around them.						whether they	
Disciplinary Knowledge (working scientifically)• Repeat actions that • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative around them.Disciplinary Knowledge (working scientifically)• Repeat actions that there setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where and run and where and run and						are attracted to	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, around them.Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore the natural world around them.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, and fair tests making systematic and careful observations and, where and rips.						a magnet, and	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials • Explore materials • Explore the natural world around them.• Repeat actions that have an effect. • Explore the natural world around them.• Setting up simple practical enquiries, • Captor the natural world around them.Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.						identify some	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials • Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials • Explore the natural world around them.• Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where anor, and, where anor, and, where						magnetic	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore maderials with different properties. • Explore maderials with different properties. • Explore maderials with different properties. • Explore the natural world around them.Early Learning Goals - • Explore the natural world around them.Image: Comparison of the properties						materials.	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and dair tests making systematic and careful observations and, where any observations and, where any observations and where any observations and where any observations and where any observations any observations and on trips.					•	Describe	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural world around them.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and different natural world around them.						magnets as	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where and, where testing and on trips.• Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where and, where testing and on trips.						having two	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, and fair tests making systematic and careful observations and, where and, where and, where and on trips.						poles.	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, making systematic and careful observations and, where and, where and careful and, where and, where and, where and provide and and where and provide and and provide and <br< th=""><th></th><th></th><th></th><th></th><th>•</th><th>Predict whether</th><th></th></br<>					•	Predict whether	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where and, where						two magnets	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where andromizate						will attract or	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where anpropriate						repel each	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.• Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where androm where and on trips.						other,	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where annd, where annorriate						depending on	
Image: second						which poles are	
Disciplinary Knowledge (working scientifically)• Repeat actions that have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.Early Learning Goals - • Explore the natural world around them.• Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where anoronriate						facing.	
Knowledge (working scientifically)have an effect. • Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips Explore the natural world around them.simple practical enquiries, comparative and fair tests making systematic and careful observations and, where anpropriate	Disciplinary	Repeat actions that	Early Learning Goals -		•	Setting up	
Knowledge (working scientifically)• Explore materials with different properties. • Explore and respond to different natural phenomena in their setting and on trips.natural world around them.• Explore materials with different respond to different natural phenomena in their setting and on trips.natural world around them.		have an effect.	- Explore the			simple practical	
(working scientifically)with different properties. • Explore and respond to different natural phenomena in their setting and on trips.around them.comparative and fair tests making systematic and observations and, where anpropriate	Knowledge	Explore materials	natural world			enquiries.	
scientifically) properties. and fair tests • Explore and making respond to different systematic and natural phenomena in careful their setting and on observations and, where anpropriate	(working	with different	around them.			comparative	
	scientifically	properties.				and fair tests	
respond to different natural phenomena in their setting and on trips.	scientifically	• Explore and				making	
natural phenomena in their setting and on trips.		respond to different				systematic and	
their setting and on trips.		natural phenomena in				careful	
trips.		their setting and on				observations	
and, where		trips.				and, where	
						appropriate.	

of the force of	
gravity acting	
between the	
Earth and the	
falling object.	
 Identify the 	
effects of air	
resistance	
water	
resistance and	
friction that act	
hotwoon	
moving	
nioving	
Surfaces.	
 Recognise that 	
some	
including lovers	
niciuuing levers,	
pulleys and	
gears, allow a	
smaller force to	
nave a greater	
effect.	
 Recording data 	
and results of	
increasing	
complexity	
using scientific	
diagrams and	
labels,	
classification	
keys, tables,	
scatter graphs,	

	• Use all their senses			taking accurate	
	in hands-on			measurements	
	exploration of natural			using standard	
	materials.			units, using a	
	• Explore collections			range of	
	of materials with			equinment	
	similar and/or			including	
				the survey a set of the set	
	different properties.			thermometers	
	• Talk about what			and data	
	they see, using a wide			loggers.	
	vocabulary.			 Recording 	
	• Explore how things			findings using	
	work.			simple scientific	
	• Talk about the			language,	
	differences between			drawings.	
	materials and changes			labelled	
	they notice			diagrams keys	
				har charts and	
				tables	
				laules.	
				• Reporting on	
				findings from	
				enquiries,	
				including oral	
				and written	
				explanations,	
				displays or	
				presentations	
				of results and	
				conclusions.	
				 Identifying 	
				differences	
				similarities or	
				shanges related	
				to simple	
				scientific ideas	
				and processes.	
Key Vocabulary	Push	Iviagnetic		Tier 2:	
	Pull	Non-magnetic		push, pull, surface,	
				movement, magnet,	
				attract, repel,	
				north/south pole,	
				metal, iron, steel, nickel	
				Tier 3:	
				contact/non-contact	
				force, friction,	
				resistance, gravity,	
				magnetic field,	
				magnetism,	
				horseshoe/bar/ring	
				magnet	

har and line	
graphs.	
Tier 2:	
simple machine effort	
ioad, noat, sink,	
streamlined,	
Tier 3:	
friction resistance	
r	
forcemeter,	
contact force, gravity,	
gravitational null	
mass, matter, air	
resistance, water	
resistance, drag.	
unthrust displace	
uptillust, displace,	
lever, pulley, gear,	

			Dissipling	
			Disciplinary:	
			analyse, bar change,	
			chart, classify,	
			comparative test,	
			conclusion, data,	
			data logger, diagram,	
			display, enquiry,	
			equipment, evidence,	
			explain, fair	
			test, findings, gather,	
			group, identify,	
			key, measurement.	
			note, observe.	
			nattern predict	
			present process	
			question record	
			relationship results	
			socondary source	
			secondary source,	
			similarity, sort,	
			standard unit,	
			systematic, table,	
			thermometer, value	
STEM Sentences			is the same as	
STEW Sentences				
			This is because	
			is it different	
			to	
			This is because	
			I predict	
			I think this because	
			To make my test fair I	
			will	
			I have found out	
			Therefore my	
			prediction was	
			In my investigation I	
			found out	
			I know this because	
			my results show that	
			,	

transmission mesh	
avle fulcrum	
nivot mechanisms	
redirecting force	
Discinlinary:	
causal relationshin	
classification key	
comparative test	
conclusion control	
diagram enquiry	
equinment evidence	
to support/refute fair	
test granh	
(scatter/bar/line)	
information-record	
measurement	
observation, pattern.	
prediction, repeat	
reading, research.	
results, secondary	
source, table, variable	
,,	

Flectricity				•	Identify
Liectricity					common
					appliances that
Substantive					run on
Knowledge					electricity.
Kilowieuge				•	, Construct a
					simple series
					electrical
					circuit
					identifying and
					naming its hasic
					narts including
					colls wires
					bulbs switches
					and huzzors
					Identify
					whather or not
					a lamp will light
					in a simple
					series circuit,
					Dased on
					the lamp is part
					the lamp is part
					of a complete
					loop with a
					battery.
				•	Recognise that
					a switch opens
					and closes a
					circuit and
					associate this
					with whether
					or not a lamp
					lights in a
					simple series
					circuit.
				•	Recognise some
					common
					conductors and
					insulators, and
					associate
					metals with
					being good
					conductors.
Disciplinary				•	Setting up
Knowledge					simple practical
Inorthing					enquiries,
WORKING					comparative
scientifically)					and fair tests
		1	1		making

•	Associate the
	brightness of a
	lamp or the
	volume of a
	buzzer with the
	number and
	voltage of cells
	used in the
	circuit.
•	Compare and
	give reasons for
	variations in
	how
	components
	function,
	including the
	brightness of
	bulbs, the
	loudness of
	buzzers and the
	on/off position
	of switches
•	Use recognised
	symbols when
	representing a
	simple circuit in
	a diagram.
	Planning
•	different types
	of scientific
	onguirios to
	answor
	answel
	questions,

			 systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. 	 including recognising and controlling variables where necessary. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms
			4	written forms such as displays and other presentations.
Key Vocabulary			Tier 2: appliance, mains electricity, battery, generated, power station, electrical energy, pylon, plug, socket Tier 3: convert, series circuit, component, bulb	Tier 2: symbol, device Tier 3: series circuit, cell, battery, component, voltage Disciplinary: causal relationship, classification key, comparative test, consolucion control

			holder, buzzer, cell, battery, wire, crocodile clip, electrical conductor, electrical insulator Disciplinary: analyse, bar change, chart, classify, comparative test, conclusion, data, data logger, diagram, display, enquiry, equipment, evidence, explain, fair test, findings, gather, group, identify, key, measurement, note, observe, pattern, predict, present, process, question, record, relationship, results, secondary source, similarity, sort, standard unit, systematic, table, thermometer, value
STEM Sentences			I predict I think this because To make my test fair I will In my investigation I found out I know this because my results show that I would now like to know

diagram, enquiry, equipment, evidence to support/refute, fair test, graph (scatter/bar/line), information record, measurement, observation, pattern, prediction, repeat reading, research, results, secondary source, table, variable
I predict I think this because
To make my test fair I will
I will do this because
The variables I will change/keep the same are
By doing this I expect
The equipment I have chosen to use is
I have chosen this

					because
					I expect to find
					is the same as
					This is because
					is it different
					to
					This is because
					I have found out
					Therefore my
					prediction was
					My prediction was
					correct because
Earth and Space			 Identify how 	 Describe the 	
and Sound			sounds are	movement of	
and <u>Sound</u>			made,	the Earth, and	
			associating	other planets,	
Substantive			some of them	relative to the	
Knowledge			with something	Sun in the solar	
Kilowieuge			vibrating.	system.	
			 Recognise that 	 Describe the 	
			vibrations from	movement of	
			a sound travel	the Moon	
			through a	relative to the	
			medium to the	Earth.	
			ear.	Describe the	
			Find patterns	Sun, Earth and	
			between the	Moon as	
			pitch of a sound	approximately	
			and features of	spherical	
			the object that	DOGIES.	
			produced it.	 Use the Idea of 	
			 Find patterns 	the Earth's	
			between the	rotation to	
			volume of a	explain day and	
			sound and the	apparent	
			vibrations that	apparent movement of	
			produced it	the Supperces	
			Becognise that	the chy	
			• Necognise that	ule sky.	
			fainter as the		
			distance from		
			the cound		
		1	the sound		

					source
					increases.
Disciplinary	Repeat actions that	• Explore the natural			 Asking relevant
Knowledge	have an effect.	world around them.			questions and
Knowledge	Explore materials	Describe what they			using different
(working	with different	see, hear and feel			types of
scientifically)	properties.	whilst outside.			scientific
	Explore natural				enquiries to
	materials, indoors and				answer them.
	outside.				Setting up
	• Use all their senses				simple practica
	in hands-on				enquiries,
	exploration of natural				comparative
	materials.				and fair tests
	Explore collections				making
	of materials with				systematic and
	similar and/or				careful
	different properties.				observations
	• Explore how things				and, where
	work.				appropriate,
	• Talk about the				taking accurate
	differences between				measurements
	materials and changes				using standard
	they notice.				units, using a
					range of
					equipment,
					including
					thermometers
					and data
					loggers.
					Reporting on
					findings from
					enquiries,
					including oral
					and written
					explanations,
					displays or
					presentations
					of results and
					conclusions.
					 Identifying
					differences,
					similarities or
					changes related
					to simple
					scientific ideas
					and processes.
Key Vocabulary	Loud	Loud			Tier 2:
	Quiet	Quiet			sound, vibrate/
		Instrument			

 Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Reporting and presenting 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. 	
Earth, sun, moon,	

			vibrations, medium, volume, distance, decrease, insulation Tier 3: energy, sound wave, sound source, insulator, pitch Disciplinary: analyse, bar change, chart, classify, comparative test, conclusion, data, data logger, diagram, display, enquiry, equipment, evidence, explain, fair test, findings, gather, group, identify, key, measurement, note, observe, pattern, predict, present, process, question, record, relationship, results, secondary source, similarity, sort, standard unit, systematic, table, thermometer, value
STEM Sentences			I predict I think this because To make my test fair I will In my investigation I found out I know this because my results show that I would now like to know is the same as

planet, star, solar	
system, rotate, seasons,	
shadows, position, 24	
hours, daytime,	
night-time	
Tier3:	
orbit, atmosphere,	
scale, heliocentric,	
geocentric,	
planetary movement,	
axis	
Disciplinary:	
causal relationship,	
classification key,	
comparative test,	
conclusion, control,	
diagram,enquiry,	
equipment, evidence	
to support/refute, fair	
test, graph	
(scatter/bar/line),	
Information record,	
observation nattern	
prediction reneat	
reading research.	
results, secondary	
source, table, variable	
I predict	
I think this because	
To make my test fair l	
wiii	
I will do this because	
The variables I will	
change/keep the same	
are	
By doing this Lownost	
By doing this respect	
Py doing this Lownost	
I have found out	

			This is because	Therefore my	
				prediction was	
			is it different		
			to	My prediction was	
				correct because	
			This is because		