

Science Progression

Early Years - FS1 & 2									
Understanding the World Children know about similar things. They talk about the might vary from one anothe things occur, and talk abou	(The World) rities and differences in relation to places, objects, materials and living e features of their own immediate environment and how environments er. They make observations of animals and plants and explain why some t changes.	Physical Development (Health and Self-Care) Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.							
F1 Working Scientifically	 Finding ways to solve problems Making predictions Testing their ideas Developing ideas around grouping. Developing ideas around sequencing. How to use grouping and sequencing. Planning and making decisions about how to approach a task. Checking how well an activity is developing. To think about what they want to change 	F2 Working Scientifically	 Finding ways to solve problems Making predictions Testing their ideas Developing ideas around grouping. Developing ideas around sequencing. How to use grouping and sequencing. Planning and making decisions about how to approach a task. Checking how well an activity is developing. To think about what they want to change. 						
Plants	• They verbally make observations of plants.	Plants	• They verbally make observations of plants and talk about what has happened and the changes that have occurred.						
Living things and their habitats	 Children know about similarities and differences in relation to objects and materials. They can talk about the features in their immediate environment. 	Living things and their habitats	 Children know about similarities and differences in relation to places, objects, materials and living things They can talk about the features of their immediate environment and how environments might vary to one another. 						
Animals including humans	 To observe the effects of physical activity on their bodies. To show care and concern for living things and the environment. To eat a healthy range of foodstuffs. 	Animals including humans	 To observe the effects of physical activity on their bodies. To show care and concern for living things and the environment how to collect them safely and return them safely. To eat a healthy range of foodstuffs and understand a need for variety in food. To show some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health. 						
Seasonal Changes	• Talk about similarities and differences to the four seasons.	Seasonal Changes	 Talk about similarities, differences, patterns and changes in relation to the four seasons. 						

Materials, States of Matter and Rocks	 Children know about similarities and differences in relation to, objects, materials and living things. They can make observations and identify when something is changing and make predictions of why it has changed. They can talk about how materials feel, smell, move, sound and look like. 	Materials, States of Matter and Rocks	 Children know about similarities and differences in relation to places, objects, materials and living things. They can make observations and explain why some things have changed and talk about those changes. (Bubbles etc) They know the properties of some materials and can suggest how it might be used. To develop an understanding of growth, decay and changes over time.
Forces, Earth and Space	 Develop ideas of grouping, sequencing and the causes in relation to movement i.e. toys, cars, rough surfaces etc. They know the properties of some materials and can suggest how it might be used. They are familiar with basic scientific concepts such as floating and sinking. 	Forces, Earth and Space	 Develop ideas of grouping, sequencing and the causes in relation to movement i.e. toys, cars, rough surfaces etc. They know the properties of some materials and can suggest how it might be used. They are familiar with basic scientific concepts such as floating and sinking.

Below are the strands and learning expectations for KS1 and KS2.

If you see red text in a strand it shows the learning links to other topics and other year groups that should support you when doing concept maps.

At the very bottom is the learning for KS3 which will help Year 6 with their concept maps.

Key Stage 1 and 2

Strands		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working	Asking	Asking simple questions	Asking simple questions	Asking relevant questions	Asking relevant	Children independently	Children independently
Scientifically	Questions	and recognising that	and recognising that	and using different types	questions and using	ask scientific questions.	ask scientific questions.
		they can be answered in	they can be answered in	of scientific enquiries to	different types of	This may be stimulated	This may be stimulated
		different ways.	different ways.	answer them.	scientific enquiries to	by a scientific	by a scientific
					answer them.	experience or involve	experience or involve
		While exploring the	While exploring the	The children consider		asking further questions	asking further questions
		world, the children	world, the children	their prior knowledge	The children consider	based on their developed	based on their developed
		develop their ability to	develop their ability to	when asking questions.	their prior knowledge	understanding following	understanding following
		ask questions (such as	ask questions (such as	They independently use a	when asking questions.	an enquiry.	an enquiry.
		what something is, how	what something is, how	range of question stems.	They independently use a		
		things are similar and	things are similar and	Where appropriate, they	range of question stems.	Given a wide range of	Given a wide range of
		different, the ways	different, the ways	answer these questions.	Where appropriate, they	resources the children	resources the children
		things work, which	things work, which		answer these questions.	decide for themselves	decide for themselves
		alternative is better, how	alternative is better, how	The children answer		how to gather evidence to	how to gather evidence to
		things change and how	things change and how	questions posed by the	The children answer	answer a scientific	answer a scientific
		they happen). Where	they happen). Where	teacher.	questions posed by the	question. They choose a	question. They choose a
		appropriate, they answer	appropriate, they answer		teacher.	type of enquiry to carry	type of enquiry to carry
		these questions.	these questions.	Given a range of		out and justify their	out and justify their
				resources, the children	Given a range of	choice. They recognise	choice. They recognise
		The children answer	The children answer	decide for themselves	resources, the children	how secondary sources	how secondary sources
		questions developed with	questions developed with	how to gather evidence to	decide for themselves	can be used to	can be used to
		the teacher often	the teacher often	answer the question. They	how to gather evidence to	answer questions that	answer questions that
		through a scenario.	through a scenario.	recognise when secondary	answer the question.	cannot be answered	cannot be answered
				sources can be used to	They recognise when	through practical work.	through practical work.
		The children are involved	The children are involved	answer questions that	secondary sources can be		
		in planning how to use	in planning how to use	cannot be answered	used to answer questions	The children select from	The children select from
		resources provided to	resources provided to	through practical work.	that cannot be answered	a range of practical	a range of practical
		answer the questions	answer the questions	They identify the type of	through practical work.	resources to gather	resources to gather
		using different types of	using different types of	enquiry that they have	They identify the type of	evidence to answer their	evidence to answer their
		enquiry helping them to	enquiry helping them to	chosen to answer their	enquiry that they have	questions. They carry out	questions. They carry out
		recognise that there are	recognise that there are	question.	chosen to answer their	fair tests, recognising	fair tests, recognising
		different ways in which	different ways in which		question.	and controlling variables.	and controlling variables.
		questions can be	auestions can be			They decide what	They decide what
		answered.	answered.			observations or	observations or
						measurements to make	measurements to make
						over time and for how	over time and for how
						long. They look for	long. They look for
						patterns and	patterns and
						relationships using a	relationships using a
						relationships using a suitable sample	relationships using a suitable sample

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Measuring	Observing closely using	Observing closely using	Setting up simple	Setting up simple	Taking measurements,	Taking measurements,
and	simple equipment.	simple equipment.	practical enquiries,	practical enquiries	using a range of	using a range of
Decending			comparative and fair	comparative and fair	scientific equipment.	scientific equipment.
Recording	Children explore the	Children explore the	tests	tests	with increasing accuracy	with increasing accuracy
	world around them. They	world around them. They			and precision taking	and precision taking
	make careful	make careful	The children select from	The children select from	repeat readings when	repeat readings when
	observations to support	observations to support	a range of practical	a range of practical	appropriate	appropriate
	identification comparison	identification comparison	resources to oather	resources to gather		appropriate.
	and noticing change. They	and noticing change. They	evidence to answer	evidence to answer	The children select	The children celect
	use appropriate senses	use appropriate senses	questions generated by	questions generated by	measuring equipment to	measuring equipment to
	aided by aquipment such	aided by equipment such	themselves on the	themselves on the	aive the most pracise	aive the most pracise
	and a magnifying plagage on	alded by equipment such	tasshan	tasshan	give the most precise	give the most precise
	disited mismageness to	disitel missesses to	reacher.	Teacher.	results e.g. ruler, tupe	results e.g. ruler, tape
	algital microscopes, to	algital microscopes, to	Entra tra		measure or trunale wheel,	measure or trunale wheel,
	make their observations.	make their observations.	Explanatory note	Explanatory note	force meter with a	force meter with a
			A comparative test is	A comparative test is	suitable scale.	suitable scale.
	They begin to take	They begin to take	performed by changing a	performed by changing a		
	measurements, initially by	measurements, initially by	variable that is qualitative	variable that is	During an enquiry, they	During an enquiry, they
	comparisons, then using	comparisons, then using	e.g. the type of material,	qualitative e.g. the type	make decisions e.g.	make decisions e.g.
	non-standard units.	non-standard units.	shape of the parachute.	of material, shape of the	whether they need to:	whether they need to:
			This leads to a ranked	parachute. This leads to a	take repeat readings (fair	take repeat readings (fair
	Performing simple tests	Performing simple tests	outcome.	ranked outcome.	testing); increase the	testing); increase the
					sample size (pattern	sample size (pattern
	The children use practical	The children use practical	A fair test is performed	A fair test is performed	seeking); adjust the	seeking); adjust the
	resources provided to	resources provided to	by changing a variable	by changing a variable	observation period and	observation period and
	gather evidence to	gather evidence to	that is quantitative e.g.	that is quantitative e.g.	frequency (observing over	frequency (observing over
	answer questions	answer questions	the thickness of the	the thickness of the	time); or check further	time); or check further
	generated by themselves	generated by themselves	material or the area of	material or the area of	secondary sources	secondary sources
	or the teacher. They	or the teacher. They	the canopy. This leads to	the canopy. This leads to	(researching); in order to	(researching); in order to
	carry out: tests to	carry out: tests to	establishing a causative	establishing a causative	get accurate data (closer	get accurate data (closer
	classify; comparative	classify; comparative	relationship.	relationship.	to the true value).	to the true value).
	tests; pattern seeking	tests; pattern seeking	·			
	enguiries; and make	enguiries; and make	They follow their plan to	They follow their plan to	Recording data and	Recording data and
	observations over time.	observations over time.	carry out: observations	carry out: observations	results of increasing	results of increasing
			and tests to classify:	and tests to classify:	complexity using	complexity using
			comparative and simple	comparative and simple	scientific diagrams and	scientific diagrams and
			fair tests: observations	fair tests: observations	labels classification	labels classification
			over time: and pattern	over time: and pattern	kevs tables scatter	kevs tables scatter
			seeking	seeking	aranhs bar and line	araphs bar and line
			eeeng.	eeen	araphs	araphs
			Gathering recording	Gathering recording	gi aprio.	gi aprio.
			classifying and presenting	classifying and presenting	The children select from	The children select from
	Identifying and	Identifying and	data in a variety of ways	data in a variety of ways	a range of practical	a range of practical
	Classifying	Classifying	to halp in anguaring	to halp in anguaring	nacounces to eather	necounces to eather
	Classifying	Clussifying	augationa	augationa	avidance to enguen	avidance to enguiner
			questions	questions	evidence to driswer	evidence to answer
			Deservatives finalized unit	Descending findings and	the machine and the	questions generated by
			Recording Tindings using	Recording Tindings using	triemseives or the	themselves or the
			simple scientific language,	simple scientific language,	teacher.	teacher.

•	Children use their	Children use their	drawings, labelled	drawings, labelled		
	observations and testing	observations and testing	diagrams, keys, bar	diagrams, keys, bar	Children present the	Children present the
	to compare objects,	to compare objects,	charts, and tables.	charts, and tables.	same data in different	same data in different
	materials and living	materials and living			ways in order to help with	ways in order to help with
	things. They sort and	things. They sort and	The children sometimes	The children sometimes	answering the question.	answering the question.
	group these things,	group these things,	decide how to record and	decide how to record and		
	identifying their own	identifying their own	present evidence. They	present evidence. They		
	criteria for sorting.	criteria for sorting.	record their observation	record their observation		
			e.g. using photographs,	e.g. using photographs,		
	They use simple	They use simple	videos, pictures, labelled	videos, pictures, labelled		
	secondary sources (such	secondary sources (such	diagrams or writing. They	diagrams or writing. They		
	as identification sheets)	as identification sheets)	record their	record their		
	to name living things.	to name living things.	measurements e.g. using	measurements e.g. using		
	They describe the	They describe the	tables, tally charts and	tables, tally charts and		
	characteristics they used	characteristics they used	bar charts (given	bar charts (given		
	to identify a living thing.	to identify a living thing.	templates, if required, to	templates, if required, to		
			which they can add	which they can add		
			headings). They record	headings). They record		
			classifications e.g. using	classifications e.g. using		
			tables, Venn diagrams,	tables, Venn diagrams,		
			Carroll diagrams.	Carroll diagrams.		
			Children are supported to	Children are supported to		
			present the same data in	present the same data in		
			halp with answaring the	to halp with answaring		
			neip with answering the	the question		
Concluding	Gathering and recording	Gathering and recording	Using straightforward	Using straightforward	Tdentifying scientific	Tdentifying scientific
concluding	data to help answering	data to help answering	scientific evidence to	scientific evidence to	evidence that has been	evidence that has been
	auestions	auestions	answer questions or to	answer questions or to	used to support or	used to support or
	42	4	support their findings	support their findings	refute ideas or	refute ideas or
	The children record their	The children record their	capper i men finanige.	sepport men finange.	arouments.	arouments.
	observations e.g. using	observations e.g. using	Children answer their own	Children answer their own		
	photographs, videos,	photographs, videos,	and others' questions	and others' questions	Children answer their own	Children answer their own
	drawings, labelled	drawings, labelled	based on observations	based on observations	and others' questions	and others' questions
	diagrams or in writing.	diagrams or in writing.	they have made;	they have made;	based on observations	based on observations
			measurements they have	measurements they have	they have made;	they have made;
	They record their	They record their	taken or information they	taken or information they	measurements they have	measurements they have
	measurements e.g. using	measurements e.g. using	have gained from	have gained from	taken or information they	taken or information they
	prepared tables,	prepared tables,	secondary sources. The	secondary sources. The	have gained from	have gained from
	pictograms, tally charts	pictograms, tally charts	answers are consistent	answers are consistent	secondary sources. When	secondary sources. When
	and bar charts.	and bar charts.	with the evidence.	with the evidence.	doing this, they discuss	doing this, they discuss
					whether other evidence	whether other evidence
	They classify using simple	They classify using simple	Identifying differences,	Identifying differences,	e.g. from other groups,	e.g. from other groups,
	prepared tables and	prepared tables and	similarities or changes	similarities or changes	secondary sources and	secondary sources and
	sorting rings.	sorting rings.	related to simple	related to simple	their scientific	their scientific

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			scientific ideas and	scientific ideas and	understanding, supports	understanding, supports
	Using observations and	Using observations and	processes	processes	or refutes their answer.	or refutes their answer.
	ideas to suggest answers	ideas to suggest answers				
	to questions.	to questions.	Children interpret their	Children interpret their	They talk about how their	They talk about how their
			data to generate simple	data to generate simple	scientific ideas change	scientific ideas change
	Children use their	Children use their	comparative statements	comparative statements	due to new evidence that	due to new evidence that
	experiences of the world	experiences of the world	based on their evidence.	based on their evidence.	they have gathered.	they have gathered.
	around them to suggest	around them to suggest	They begin to identify	They begin to identify	, ,	, ,
	appropriate answers to	appropriate answers to	naturally occurring	naturally occurring	They talk about how new	They talk about how new
	questions They are	questions They are	natterns and causal	patterns and causal	discoveries change	discoveries change
	supported to relate these	supported to relate these	relationships	relationships	scientific understanding	scientific understanding
	to their evidence e o	to their evidence e o	reidnonships.	relationships.	scientific understanding.	scientific under stunding.
	abzonuctions they have	abzervations they have			Departing and procenting	Departing and presenting
	observations they have	observations they have			finding from an arising	finding from an article
	made, measurements they	made, measurements they			Tindings from enquiries,	Tindings from enquiries,
	have taken or information	have taken or information			including conclusions,	including conclusions,
	they have gained from	they have gained from			causal relationships and	causal relationships and
	secondary sources.	secondary sources.			explanations of and	explanations of and
					degree of trust in	degree of trust in
	The children recognise	The children recognise			results, in oral and	results, in oral and
	'biggest and smallest',	'biggest and smallest',			written forms such as	written forms such as
	'best and worst' etc. from	'best and worst' etc. from			displays and other	displays and other
	their data.	their data.			presentations.	presentations.
					Children answer their own and others' questions based on observations they have made; measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence.	Children answer their own and others' questions based on observations they have made; measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence.
Evaluation			Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the	They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the

Inte Anocation	2 nours per v	VEEK - STLIVI WEEK HOITIN				
			Draw conclusions based on	Draw conclusions based	credibility of secondary	credibility of secondary
			their evidence and	on their evidence and	sources used.	sources used.
			current subject	current subject		
			knowledge.	knowledge.	They communicate their	They communicate their
					findings to an audience	findings to an audience
			Identify ways in which	Identify ways in which	using relevant scientific	using relevant scientific
			they adapted their	they adapted their	language and illustrations.	language and illustrations.
			method as they	method as they		
			progressed or how they	progressed or how they	Using test results to	Using test results to
			would do it differently if	would do it differently if	make predictions to set	make predictions to set
			they repeated the	They repeated the	up turtner comparative	up turtner comparative
			enquiry.	enquiry.	and tair tests.	ana tair tests.
			Use their evidence to	Use their evidence to	Children use the	Children use the
			suggest values for	suggest values for	scientific knowledge	scientific knowledge
			different items tested	different items tested	agined from enquiry work	agined from enquiry work
			using the same method	using the same method	to make predictions they	to make predictions they
			e.g. the distance travelled	e.g. the distance	can investigate using	can investigate using
			by a car on an additional	travelled by a car on an	comparative and fair	comparative and fair
			, surface.	additional surface.	tests.	tests.
			Following a scientific	Following a scientific		
			experience, the children	experience, the children		
			ask further questions	ask further questions		
			which can be answered by	which can be answered by		
			extending the same	extending the same		
			enquiry.	enquiry.		
			Reporting on findings	Reporting on findings		
			trom enquiries, including	trom enquiries, including		
			oral and written	oral and written		
			explanations, displays or	explanations, displays or		
			presentations of results	presentations of results		
			una conclusions.	and conclusions.		
			They communicate their	They communicate their		
			findings to an audience	findings to an audience		
			both orally and in writing,	both orally and in writing,		
			using appropriate	using appropriate		
			scientific vocabulary.	scientific vocabulary.		

Time Anocation 2 hours per				S interfere	N 11 11 117	N 11 1 11 11 11 11
Plants	Identity and name a	Observe and describe	Identity and describe	Recognise that living	Describe the life process	Describe how living things
Biology	variety of common wild	how seeds and builds grow	The functions of	Things can be grouped in a	of reproduction in some	are classified into broad
	and garden plants,	into mature plants.	different parts of	variety of ways	plants and animals	groups according to
	including deciduous and		flowering plants: roots,	(Living things and their	(Living things and their	common observable
	evergreen trees.	Find out and describe	stem/trunk, leaves and	habitats)	habitats)	characteristics and based
		how plants need water,	flowers. See Vocabulary			on similarities and
	Identify and describe	light and a suitable	to list a full plant.	Explore and use		differences, including
	the basic structure of a	temperature to grow and		classification keys to help		micro-organisms, plants
	variety of common	stay healthy.	Explore the requirements	group, identify and name		and animals.
	flowering plants,		of plants for life and	a variety of living things		(Y6 Living things and
	including trees.	Pupils should: Use their	growth (air, light,	in their local and wider		their habitats)
		local environment	water, nutrients from	environment		
	Pupils should: use the	throughout the year to	soil, and room to grow)	(Living things and their		
	local environment	observe how different	and how they vary from	habitats)		
	throughout the year to	plants grow.	plant to plant.			
	explore and answer			Recognise that		
	questions about plants	Be introduced to the	Investigate the way in	environments can change		
	growing in their habitat.	requirements of	which water is	and that this can		
	Where possible, they	germination, growth and	transported within plants	sometimes pose a danger		
	should observe the	survival, as well as		to living things		
	growth of flowers and	reproduction and growth	Explore the part that	(Living things and their		
	vegetables they have	in plants.	flowers play in the life	habitats)		
	planted.		cycle of flowering plants,			
		Working Scientifically	including pollination, seed			
	Working Scientifically	by:	formation and seed			
	by:	Observing and recording,	dispersal.			
	Observing closely.	with some accuracy, the				
	Comparing and	growth of a variety of	Pupils should: Be			
	Contrasting	plants as they change	introduced to the			
	Identify and group.	over time from seed or	relationship between			
	Drawing diagrams.	bulb.	structure and function;			
	Keep records of changes		the idea that every part			
	over time.	Observing similar plants	has a job to do.			
		during different stages				
		of growth.	They should explore			
		Set up comparative	questions that focus on			
		tests – plants need	the role of the roots and			
		light, water to stay	stem in nutrition and			
		healthy.	support, leaves for			
			nutrition and flowers for			
			reproduction.			
			Working Scientifically			
			by:			
			Comparing the effect of			
			different factors on			

		 plant growth (the amount of light/fertiliser). Observing the plant life cycle. Look at patterns in the structure of fruit and how they then disperse. How water is transported in plants. 		
petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area. Names of garden and wild flowering plants in the local area. Growing locally there will be a vast array of plants which all have specific names. These can be identified by looking at the key characteristics	petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud As well as Year 1 vocabulary: light, shade, sun, warm, cool, water, grow, healthy Plants may grow from either seeds or bulbs. These then germinate and grow into seedlings which then continue to grow into mature plants. These mature plants may have flowers which then	Photosynthesis, pollen, stamen, stigma, insect/wind pollination, seed formation, seed dispersal - wind dispersal, animal dispersal, water dispersal Many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom. The roots absorb water and nutrients from the soil and anchor the plant in place.		
of the plant. Plants have common parts but they vary between the different types of plants. Deciduous and Evergreen Some trees keep their leaves all year whilst other trees drop their leaves during autumn and grow them again during spring.	develop into seeds, berries, fruits etc. Seeds and bulbs need to be planted outside at particular times of the year and they will germinate and grow at different rates. Some plants/bulbs are better suited to growing in full sun and some grow	The stem transports water and nutrients/minerals around the plant and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. The leaves use sunlight and water to produce the plant's food.		

Animals including Humans biologyAnimels including fifth, and biolis red and builts are able of the structure of write adultsSome plants produce the structure the structure of and biolis media the structure of and structure of the structure of and structure of the structure of and structure of the structure of the structure of the structure of the structure of the structure of the structure of the structure of exercise the structure of exercise.Describe the simple the structure of exercise the structure of exercise.Describe the simple the structure of exercise.Describe the simple the structure of exercise.Describe the simplices, perifers, 			· · · · · · · · · · · · · · · · · · ·				
Animals including Humans BiologyAnimals and builts from animals including fish, and builts from the other and space to grave animals including fish, and builts from the other animals, including Humans, exercise the importance of the structure of warely of common animals including fish, and structure of the other of animals, including humans, for survival and structure of the other of animals, including humans, for survival and structure of the other of animals, including humans, for survival animals including human			better in partial or full	Some plants produce			
Animals including Humans BiologyAnimals including frammer and india including frammer <th></th> <th></th> <th>shade. Plants also need</th> <th>flowers which enable the</th> <th></th> <th></th> <th></th>			shade. Plants also need	flowers which enable the			
Asimals including Human BiologyAnimals Zdentify and none a units of anomals, including file 			different amounts of	plant to reproduce.			
Pollen, which is produced by the mate produced by the mate produced or the flower (Stramen), is transferred to the fendee pert (singen) of other flowers (Stramens), is transferred to the fendee opert (singen) of other flowers (Stramens), is transferred to the fendee transferred to the single displexed in different more develop to di set of the lost the dight were to animals including humans, here displexed in different transferred to the single displexed in different the dight were to erist of the dights the dight humans, here displexed in different the dight humans, here displexed in displexed in different the dight humans, here displexed in displexed in different the humans detained the displexed in different the humans detained the displexed in different the humans detained the humans detained humans, fore			water and space to grow				
by the make part of the forwer (Stanward, Ne stands including Human, her this stands including Human, her the stands including Human, her 			well and stay healthy.	Pollen, which is produced			
Note support to any support to any support				by the male part of the			
Section of the fourth or the			Note	flower (Stamen), is			
water to grow but meet forced inside them, and bulks have a store of food inside them, and bulks have a store of germination and growth.Just the store is food in them and the store is the store is the store is bulks and threes is hardstard three is the store is independent of the the store is the store is the store is independent of the store is the store is the store is the store is the store is independent of the is the store is the store is independent of th			Seeds and bulbs need	transferred to the female			
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including pets) Pupils should: be pupils should: continue to introduced to the basic needs of animals for survival. As well as the importance of exercise importance of exercise with the skeleton. Pupils should be introduced to the survival with the skeleton. Pupils should be introduced to the survival with the skeleton. Pupils should be introduced to the survival with the skeleton. Pupils should be introduced to the survival with the skeleton. Pupils should be introduced to the survival with the skeleton. Pupils should be introduced to the main body parts associated with the skeleton. Pupils should: build on learning from Year 3 and 4 about the main body parts associated with the skeleton. Pupils should: build on learning from Year 3 and 4 about the main body parts associated with the skeleton. Pupils should: build on learning from Year 3 and 4 about the main body parts associated with the skeleton. Pupils should: build on learning from Year 3 and 4 about the main body parts associated functions. Pupils should: build on learning from Year 3 and 4 about the main body parts associated functions. Pupils should: build on learning from Year 3 and 4 about the main body parts associated functions. Pupils should: build on learning from Year 3 and 4 about the main body parts associated functions. Pupils should the skeleton pupils associated pu		birds and mammals,			body parts associated	by: researching the	-
Pupils should: use the local environment throughout the year to explore and answer. Introduced to the basic importance of exercise with the skeleton. Introduced to the basic introduced to the basic introduced to the main body parts associated with the skeleton. Introduced to the basic introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton. Introduced to the main body parts associated with the skeleton the main body parts associated with the skeleton the main body parts associated to the main bod		including pets)	Pupils should: be	Pupils should: continue to	with the digestive	gestation periods of	Pupils should: build on
Pupils should: use the needs of animals for survival. As well as the introduced to the main body parts associated with the skeleton with the skeleton. Pupils should: use the needs of animals for survival. As well as the introduced to the main body parts associated with the skeleton. Pupils should: use the needs of animals for survival. As well as the introduced to the main body parts associated with the skeleton. Pupils should: use the needs of animals for survival. As well as the introduced to the main body parts associated with the skeleton. Pupils should: use the needs of animals for survival. As well as the introduced to the main body parts associated with the skeleton. Pupils should be and 4 about the main body parts and internal organs. Pupils associated with the skeleton body parts associated with the skeleton. Pupils associated by the main body parts associated by p		5	introduced to the basic	learn the importance of	system. Explore	other animals and	learning from Year 3
local environment survival. As well as the introduced to the main body parts associated body parts associated with the skeleton with the skeleton.		Pupils should: use the	needs of animals for	nutrition and should be	questions that help them	comparing them with	and 4 about the main
throughout the year to importance of exercise body parts associated functions. organs.		local environment	survival. As well as the	introduced to the main	understand their special	humans.	body parts and internal
explore and answer with the skeleton		throughout the year to	importance of exercise	body parts associated	functions.		organs.
		explore and answer		with the skeleton.			

	Veek Stelvi Week norm					
	questions about animals	and nutrition for	muscles, finding out	Working Scientifically		Skeletal, Muscular and
	in their habitat.	humans.	different parts of the	by : Comparing teeth of		Digestive system).
			body have special	carnivores and herbivores		
	Understand how to take	Introduced to the	functions.	and suggesting why they		Explore questions that
	care of animals taken	processes of		are different.		they might have about
	from the local area and	reproduction and growth	Working Scientifically			the circulatory system.
	how to return them	in animals.	by: Identifying and	Finding out what		
	safely.		grouping animals with and	damages teeth and how		Working Scientifically
		Ask questions about to	without skeletons	to look after them.		by: Exploring the work of
	Humans	recognise growth but not	(invertebrates) and			scientists and scientific
	Identify, name, draw and	expected to understand	observing and comparing	They might draw and		research about the
	label the basic parts of	how reproduction occurs.	their movement.	discuss their ideas		relationship between diet,
	the human body and say		Exploring what would	about the digestive		exercise, drugs, lifestyle
	which part of the body is	Working Scientifically	happen if humans didn't	system and compare		and health.
	associated with each	by: Observing through	have skeletons.	these with models and		
	sense	video or first-hand		images.		
		observation or	Compare and contrast			
		measurement how	diets of different			
	Pupils should:	different animals	animals and group them			
	Have plenty of	including humans grow.	depending on what they			
	opportunities to learn the		eat.			
	names of the main body	Ask questions about what				
	parts.	things animals need for	They might research			
		survival.	different food groups			
	Working Scientifically		and why they are			
	by : Observations to	Ask questions about what	healthy or unhealthy.			
	compare and contrast	humans need to be	Creating a healthy meal.			
	animals at first hand or	healthy and suggest ways				
	through videos and	to find out the answers to				
	photographs.	their questions.				
	Describing how they					
	identify and group them.					
	Using senses to compare					
	different textures,					
	sounds and smells.					
Subject Knowledge	Key Vocabulary Animals	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary
	& Humans	Offspring, reproduction,	Nutrition, nutrients,	Digestive system,	Puberty: the vocabulary	Heart, pulse, rate, pumps,
	Head, body, eyes, ears,	growth, child, young/old	carbohydrates, sugars,	digestion, mouth, teeth,	to describe sexual	blood, blood vessels,
	mouth, teeth, leg, tail,	stages (examples -	protein, vitamins,	saliva, oesophagus,	characteristics	transported, lungs,
	wing, claw, fin, scales,	chick/hen,	minerals, fibre, fat,	stomach, small intestine,		oxygen, carbon dioxide,
	feathers, fur, beak, paws,	baby/child/adult,	water, skeleton, bones,	nutrients, large intestine,	When babies are young	nutrients, water, muscles,
	hooves	caterpillar/butterfly),	muscles, support, protect,	rectum, anus, teeth,	they grow rapidly. They	cycle, circulatory system,
				incisor, canine, molar,	are very dependent on	

ne Allocation 2 hours per v	veek – STEIVI week norm	ally in Block 4.				
	Animals vary in many ways	Exercise, heartbeat,	move, skull, ribs, spine,	premolars, herbivore,	their parents. As they	diet, exercise, drugs and
	having different	breathing, hygiene,	muscles, joints.	carnivore, omnivore,	develop they learn many	lifestyle.
	structures e.g. wings,	germs, disease, food		producer, predator, prey,	skills. At puberty, a	
	tails, ears etc. They also	types (examples – meat,	Animals, unlike plants	food chain.	child's body changes and	The heart pumps blood in
	have different skin	fish, vegetables, bread,	which can make their own		develops primary and	the blood vessels around
	coverings e.g. scales,	rice, pasta)	food, need to eat in order	Food enters the body	secondary sexual	to the lungs.
	feathers, hair. These key		to get the nutrients they	through the mouth.	characteristics. This	
	features can be used to	Animals including humans	need.	Digestion starts when the	enables the adult to	Oxygen goes into the
	identify them.	have offspring which		teeth start to break the	reproduce.	blood and carbon dioxide
	Animals eat certain things	grow into adults. In	Food contains a range of	food down. Saliva is		is removed. The blood
	- some eat other animals,	humans and some animals	different nutrients that	added and the tongue		goes back to the heart
	some eat plants, some eat	these offspring will be	are needed by the body to	rolls the food into a ball.		and is then pumped
	both plants and animals.	young, such as babies or	stay healthy -			around the body.
		kittens, that grow into	carbohydrates including	The food is swallowed and		
	Note	adults.	sugars, protein, vitamins,	passes down the		Nutrients, water and
	The children also do not		minerals, fibre, fat,	oesophagus to the		oxygen are transported ir
	need to use the words	In other animals, such as	sugars, water. A piece of	stomach. Here the food		the blood to the muscles
	carnivore, herbivore and	chickens or insects, there	food will often provide a	is broken down further		and other parts of the
	omnivore. If they do,	may be eggs laid that	range of nutrients.	by being churned around		body where they are
	ensure that they	hatch to young or other		and other chemicals are		needed.
	understand that	stages which then grow to	Humans and some other	added.		
	carnivores eat other	adults.	animals have skeletons and			As they are used they
	animals not just meat.		muscles which help them	The food passes into the		produce carbon dioxide
		The young of some	move and provide	small intestine. Here		and other waste products
	Key Vocabulary Humans	animals do not look like	protection and support.	nutrients are removed		Carbon dioxide is carried
	Senses, touch, see, smell,	their parents e.g.		from the food and leave		by the blood back to the
	taste, hear, fingers	tadpoles.		the digestive system to		heart and then the cycle
	(skin), eyes, nose, ear and			be used elsewhere in the		starts again as it is
	tongue.	All animals including		body.		transported back to the
		humans have basic needs				lungs to be removed from
	NB. Although we often	of feeding, drinking and		The rest of the food		the body. This is the
	use our fingers and hands	breathing that must be		then passes into the large		human circulatory system
	to feel objects the	satisfied in order to		intestine. Here the water		
	children should	survive, and to grow into		is removed for use		Diet, exercise, drugs and
	understand that we can	healthy adults they also		elsewhere in the body.		lifestyle have an impact
	feel with many parts of	need the right amounts				on the way our bodies
	our body.	and types of food and		What is left is then		function. They can affect
		exercise.		stored in the rectum until		how well out heart and
	Humans have keys parts			it leaves the body		lungs work, how likely we
	in common, but these vary	Good hygiene is also		through the anus when		are to suffer from
	from person to person.	important in preventing		you go to the toilet.		conditions such as
	Humans (and other	infections and illnesses.				diabetes, how clearly we
	animals) find out about			Humans have four types		think, and generally how
	the world using their			of teeth - incisors for		fit and well we feel.
	senses.			cutting, canines for		
				tearing, molars and		Some conditions are

caused by deficiencies in

	Humans have five senses sight, touch, taste, hearing and smelling. These senses are linked to particular parts of the body.			premolars for grinding (chewing). Living things can be classified as producers, predators and prey according to their place in the food chain.		our diet e.g. lack of vitamins.
Year 1 Everyday materials	Materials Properties	Materials Properties	Magnetic		Substance & Reactions Properties and changes	
Year 2 Uses of everyday materials	Properties Distinguish between an object and the material from which it is made	Identify and compare the suitability of a variety of everyday	Compare and group together different kinds of rocks on the basis of their appearance and		of materials Compare and group together everyday	
Year 5 Properties and	Identify and name a	wood, metal, plastic,	simple physical properties.		of their properties,	
changes of materials	variety of everyday	glass, brick, rock, paper	(Rock)		including their hardness,	
	materials, including	and cardboard for			solubility, transparency,	
	wood, plastic, glass,	particular uses.	Describe in simple terms		conductivity (electrical	
	metal, water, and rock	Find out how the shapes	now tossiis are tormed		and thermal), and response to magnets	
DFE Priority	Describe the simple	of solid objects made	lived are trapped within		response to magnets.	
Materials - Substance	physical properties of a	from some materials can	rock. (Rock)		To know that some	
	variety of everyday	be changed by			materials will dissolve in	
DFE Priority	materials.	squashing, bending,	Notice that some forces		liquid to form a solution,	
Properties and changes of		twisting and stretching.	need contact between two		and describe how to	
materials	Compare and group		objects, but magnetic		recover a substance	
	together a variety of	Pupils should: Identify	forces can act at a		from a solution	
	the basis of their simple	different everyday	Moonets)		Use knowledge of solids	
	physical properties.	materials.	Magnersy		liquids and gases to	
					decide how mixtures	
	Pupils should: Explore,	Know that materials can			might be separated,	
	name, discuss, raise and	be more than one thing.			including through	
	answer questions about	Metal – coins, cars,			filtering, sieving and	
	everyday materials and	cans.			evaporating.	
	Their properties.	To know that objects			Give reasons based on	
	Working Scientifically	can be made from the			evidence from	
	by: Performing simple	same materials. i.e.			comparative and fair	
	tests to explore	spoon- plastic, wood,			tests, for the particular	
	questions. Which is the	metal.			uses of everyday	
	best material for an	-			materials, including	
	umbrella? For the lining	to think about materials			metals, wood and	
	of a dog busker? ETC.				plustic.	

1			
unsuitable for everyd	y l	Demonstrate that	
use.		dissolving, mixing and	
		changes of state are	
To find out about peop	e	reversible changes.	
who developed differe	<mark>it -</mark>	5	
materials i.e. John Dur	op.	Explain that some	
Charles Macintosh		changes result in the	
		formation of new	
Working Scientifically		materials and that this	
by: Comparing the use	s	kind of change is not	
of everyday materials	in	usually reversible	
and around the school	····	including changes	
home journeys visits	· · · · · · · · · · · · · · · · · · ·	associated with burning	
nome, journeys, visit		and the action of acid	
Obcanving clocaly		and the action of acid	
identifying and electrify	ina	on bicarbonate of soda.	
the used of different	ing	Pupila abould: Explana a	
metaniale and recording		rupiis should. Explore a	
their observations	9	systematic understanding of	
Their observations.		understanding of	
		materials by exploring a	
		broad range of materials	
		including those explored	
		in magnetism in year 3	
		and electricity in Year	
		4.	
		Explore reversible	
		change and non-	
		reversible changes.	
		Reversible – evaporating,	
		sieving, melting and	
		dissolving.	
		Non-reversible - burning	
		rusting etc.	
		Find out about how	
		chemists create new	
		materials.	
		Working Scientifically	
		by: carrying out tests	
		to answer questions:	
		Which materials would	
		be the most effective	
		for a winter coat.	

				You might use materials to make a switch. They could observe and compare the changes that take place, for example when burning different materials or baking bread or cakes. They might research and discuss how chemical changes have an impact on our lives i.e. cooking. They could discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.	
Subject Knowledge	Key vocabulary Object, material, wood,	Key vocabulary Names of materials -		Key Vocabulary Thermal/electrical	
	water, rock, brick, baber	metal, water, rock, brick		insulator/conductor,	
	fabric, elastic, foil,	paper, fabric, elastic, foil,		change of state,	
	card/cardboard, rubber,	card/cardboard, rubber,		mixture, dissolve,	
	wool, clay, hard, soft,	wool, clay.		solution, soluble,	
	stretchy, stiff, bendy,			insoluble, filter, sieve	
	floppy, waterproof,	Properties of materials -		reversible/non-	
	absorbent, breaks/tears,	as for year 1 plus opaque,		reversible change,	
	see through not see	translucent reflective		burning, rusting, new	
	through	non-reflective flexible		material	
		rigid Shape,			
	All objects are made of	push/pushing, pull/pulling,		Materials have	
	one or more materials.	twist/twisting,		different uses	
	Some objects can be	squash/squashing.		depending on their	
	made from different	Bend/bending,		properties and state	
	materials e.g. plastic,	stretch/stretching.		(liquid, solid, gas).	
	metal or wooden spoons.				
	Materials can be	All objects are made of		Properties include	
	properties e a shiny	that are chosen		hardness,	
	stretchy rough etc	specifically because they		transparency,	
	stretter, rough ere.	specifically because mey		electrical and thermal	

Time Allocation 2 hours per week – STEIVI week normally in Block
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· · · · ·				1	
		have suitable properties		conductivity and	
	Some materials e.g.	for the task. For		attraction to magnets.	
	plastic can be in different	example, a water bottle is			
	forms with very different	made of plastic because it		Some materials will	
	properties.	is transparent allowing		diagolyo in a liquid and	
		you to see the drink			
		inside and waterproof so		form a solution while	
		that it holds the water.		others are insoluble	
				and form sediment.	
		When choosing what to		Mixtures can be	
		make an object from, the		separated by filtering	
		properties needed are		cieving and	
		compared with the		sieving und	
		properties of the possible		evaporation.	
		materials identified			
		through simple tests and		Some changes to	
		classifying activities		materials such as	
				dissolving mixing and	
		A material can be suitable		changes of state are	
		for different purposes		novengible but some	
		and an object can be		reversible, but some	
		made of different		changes such as	
		materials		burning wood, rusting	
				and mixing vinegar	
		Objects made of some		with bicarbonate of	
		matanials can be changed		soda result in the	
		in shane by bonding		formation of new	
		in shape by bending,		normation of new	
		stretching, squashing and		materials and these	
		Twisting. For example,		are not reversible.	
		ciay can be shaped by			
		squasning, stretching,			
		rolling, pressing etc.			
		This can be a manager of			
		the meterial			
		The material or depend on			
		now the material has been			
		processed e.g. thickness.			
Seasonal Changes	Observe changes across		Recognise that light from	Use the idea of Earth's	
	the tour seasons		the sun can be dangerous	rotation to explain day	
			and that there are ways	and night and the	
	Observe and describe		to protect their eyes.	apparent movement of	
	weather associated with		(Light)	the Sun across the sky.	
	the seasons and how day			(Earth and space)	
	length varies				
1					

	Pupils should: Observe			
	and talk about changes			
	in the weather and			
	seasons.			
	working Scientifically			
	by: Making Tables, charts			
	about the weather, and			
	happens in the world			
	around them including			
	day length as the seasons			
	change.			
	5			
	Note			
	Pupils should be warned			
	that it is not safe to look			
	directly at the sun, even			
	when wearing dark			
	glasses.			
Subject Knowledge	Key Vocabulary			
	Weather (sunny, rainy,			
	windy, snowy etc.),			
	seasons (Winter,			
	Summer, Spring, Autumn),			
	length			
	length.			
	In the UK, the day length			
	is longest at mid-summer			
	(about 16 hours) and gets			
	shorter each day until			
	mid-winter (about 8			
1				
	hours) before getting			
	hours) before getting longer again.			
	hours) before getting longer again.			
	hours) before getting longer again. The weather also changes			
	hours) before getting longer again. The weather also changes with the seasons. In the			
	hours) before getting longer again. The weather also changes with the seasons. In the UK, it is usually colder			
	hours) before getting longer again. The weather also changes with the seasons. In the UK, it is usually colder and rainier in Winter and better and dryon in the			
	hours) before getting longer again. The weather also changes with the seasons. In the UK, it is usually colder and rainier in Winter and hotter and dryer in the Summer			
	hours) before getting longer again. The weather also changes with the seasons. In the UK, it is usually colder and rainier in Winter and hotter and dryer in the Summer.			

The change in weather causes many other changes: some examples are numbers of minibeasts found outside, seed and plant growth, leaves on trees and type of clothes worn by people.	
Living things and their Observe changes across Eco-Systems Explore the part that Eco-Systems	Eco-Systems Describe how living
habitats the four seasons. Explore and compare the flowers play in the life Recognise that living out of flowering plants this can be approximately as the flowering plants.	g Describe the things are classified into
Biology (Cousting on anges) and performed by the second of	cycles of a mammal, an to common observable
Identify and name a dead, and things that formation and seed	amphibian, an insect and characteristics and
DFE Priorties. Variety of common wild have never been alive dispersal. (Plants) Explore and use	a bird. Dased on similarities and differences including
Eco-Systems including deciduous and Identify that most living around identify and r	mme Describe the life micro-organisms, plants
evergreen trees. (Plants) things live in habitats to a variety of living th	ings process of reproduction and animals.
which they are suited in their local and wid	ler in some plants and
Identify and describe the and describe how environment	animals. Give reasons for
variety of common provide for the basic	Rupile should: Study and animals based on specific
flowering plants, including needs of different kinds environments can ch	nange raise questions about characteristics.
trees. (Plants) of animals and plants, and that this can	their local environment
and how they depend on sometimes pose dan	gers throughout the year. Pupils should: Build on
Identify and name a each other to living things	Their learning about
animals including fish Tdentify and name a	the cycle changes in a variety Year 4 by looking at
amphibians, reptiles, variety of plants and local environment	of things, for example classification systems in
birds and mammals. animals in their throughout the year	r to plants in the vegetable more detail.
(Animals including habitats, including raise and answer	garden or flower border,
humans) micro-habitats. questions that help	them and animals in the local Introduce broad
Identify and name a Describe how animals I allocations and animals I	micro-organisms plants
variety of common obtain their food from their habitats.	Find out about the work and animals can be
animals that are plants and other	of naturalists and animal subdivided.
carnivores, herbivores animals, using the idea They should identify	y behaviourists e.g. Sir
and omnivores. (Animals of a simple food chain, how habitats change	e David Attenborough and Through direct
including numans) and identify and name throughout the year	r. Jane Goodall. observations where possible, they should

nine / libeation 2 nouis per w	CCR STEIN WEEK HOTHIN	any in block i.			
	Describe and compare the	different sources of	Explore possible use of	Find out about different	classify animals into
	structure of a variety of	food.	grouping a wide selection	types of reproduction,	commonly found
	common animals (fish,		of living things that	including sexual and	invertebrates (insects,
	amphibians, reptiles,	Pupils should:	include animals,	asexual reproduction in	spiders, snails, worms)
	birds and mammals,	Be introduced to the	flowering and non-	plants, and sexual	and vertebrates
	including pets) (Animals	idea that all living things	flowering plants.	reproduction in animals.	(reptiles, fish,
	including humans).	have certain			amphibians, birds and
	- · ·	characteristics that are	Pupils could start to put	Working Scientifically	mammals).
		essential for keeping	vertebrate and	by: Observing and	•
		them alive and healthy.	invertebrate animals into	comparing the lifecycles	They should discuss
			groups, birds, reptiles,	of plants and animals in	reasons why living things
		Be introduced to the	fish, mammals and	their local environments	are placed in one group
		terms habitat and	amphibians.	with other plants and	and not another.
		micro-habitat.	•	animals in their local	
			Note	environments with other	Might find out about the
		They should raise and	Plants can be arouped	plants and animals	significance of the work
		answer questions about	into categories such as	around the world	scientists such as Carl
		the local environment	flowering plants	(include prehistoric	Linnaeus, a pioneer of
		that help them to	(including grasses) and	times).	classification.
		identify a variety of	non-flowering plants.		
		plants and animals.	such as ferns and	Asking pertinent	Working Scientifically
		•	mosses.	guestions and suggesting	by: Using classification
		Observe how different		ideas for similarities and	systems and keys to
		living things depend on	Explore examples of	differences. They might	identify some animals
		each other by being a	human impact (both	try to grow new plants	and plants in the
		food source or shelter.	positive and negative) on	from different parts of	immediate environment.
			environments, such as	the parent plant (seed,	
		Compare animals from a	nature reserves	stem, root cutting,	They could research
		familiar habitat to those	ecologically planned	tubers, bulbs).	unfamiliar animals and
		from a non-familiar	parks, effects of		plants from a broad range
		habitat (seashore,	population, development,	They might observe	of other habitats and
		woodland, in the ocean,	litter or deforestation.	changes in an animal	decide if they fit the
		in the rainforest).		over time (hatching and	classification system.
			Working Scientifically	rearing chicks) and	,
		Working Scientifically	by: Using and making	comparing how different	
		by: Sorting and	simple guides or keys to	animals reproduce and	
		classifying according to	explore and identify	grow.	
		whether they are living,	local plants and animals;	-	
		dead or were never alive	making a guide to local		
		and record these in	living things.		
		charts.			
			Raising and answering		
		Explore questions such	questions based on their		
		as 'Is a flame alive?'	observations of animals		
		'Is a deciduous tree	and what they have		
		dead in winter?' and talk	found out about other		

	about how to answer	animals that they have		
	these questions.	researched.		
	Simple food chains that			
	include humans (grass,			
	cow, human).			
	Describe conditions in			
	different habitats and			
	micro habitats.			
Subject Knowledge	Key Vocabulary:	Key Vocabulary:	Key Vocabulary:	Key Vocabulary:
ů s	Living, dead, never been	Classification,	Life cycle, reproduce,	Vertebrates, fish,
	alive, suited, suitable,	classification keys,	sexual, sperm, fertilises,	amphibians, reptiles,
	basic needs, food, food	environment, habitat,	egg, live young,	birds, mammals,
	chain, shelter, move,	human impact, positive,	metamorphosis, asexual,	invertebrates, insects,
	feed, names of local	negative, migrate,	plantlets, runners, bulbs,	spiders, snails, worms,
	habitats e.g. pond,	hibernate.	cuttings.	flowering and non-
	woodland etc., names of		2	flowering.
	micro-habitats e.g. under	Living things can be	As part of their life cycle	
	logs, in bushes etc.	grouped (classified) in	plants and animals	Living things can be
		different ways according	reproduce.	formally grouped
	All objects are either	to their features.	•	according to
	living, dead or have never	Classification keys can be	Most animals reproduce	characteristics.
	been glive.	used to identify and name	sexually. This involves two	
		living things.	parents where the sperm	Plants and animals are two
	Living things are plants		from the male fertilises	main groups but there are
	(including seeds) and	Living things live in a	the female egg.	other livings things that
	animals.	habitat which provides an		do not fit into these
		environment to which	Animals including humans	groups e.g. micro-
	Dead things include dead	they are suited (year 2	have offspring which	organisms such as
	animals and plants and	learning).	arow into adults.	bacteria and veast, and
	parts of plants and		-	toadstools and
	animals that are no longer	These environments may	In humans and some	mushrooms.
	attached e.g. leaves and	change naturally e.g.	animals these offspring	
	twigs, shells, fur, hair and	through flooding, fire,	will be born live, such as	Plants can make their own
	feathers (this is a	earthquakes etc. Humans	babies or kittens, and	food whereas animals
	simplification but	also cause the	then grow into adults.	cannot.
	appropriate for year 2	environment to change.	-	
	children).	This can be in a good way	In other animals, such as	Animals can be divided
		i.e. positive human impact,	chickens or snakes, there	into two main groups -
	An object made of wood	such as setting up nature	may be eggs laid that	those that have
	is classed as dead.	reserves or in a bad way	hatch to young which	backbones (vertebrates)
	Objects made of rock,	i.e. negative human	then grow to adults.	and those that do not
	metal and plastic have	impact, such as littering.		(invertebrates).
	never been alive (again	These environments also		

		ignoring that plastics are		change with the seasons;	Some young undergo a	Vertebrates can be
		made of fossil fuels).		different living things can	further change before	divided into five small
				be found in a habitat at	becoming adults e.g.	groups - fish, amphibians,
		Animals and plants live in		different times of the	caterpillars to	reptiles, birds and
		a habitat to which they		year	butterflies. This is called	mammals.
		are suited which means			a metamorphosis.	Each group has common
		that animals have suitable			Plants reproduce both	characteristics.
		features that help them			sexually and asexually.	
		move and find food and			Bulbs, tubers, runners	Invertebrates can be
		plants have suitable			and plantlets are	divided into a number of
		features that help them			examples of asexual plant	aroups including insects
		to arow well.			reproduction which	spiders, snails and worms.
					involves only one parent	
		The habitat provides the			Gardeners may force	Plants can be divided
		basic needs of the			plants to reproduce	broadly into two main
		animals and plants -			asexually by taking	aroups - flowering plants
		shelter food and water			cuttings Sexual	and non-flowering plants
					reproduction occurs	and non fromering plants.
		Within a habitat there			through pollingtion	
		are different micro-			usually involving wind or	
		habitats e a in a woodland			insects	
		- in the leaf litter on the			indeerd.	
		bark of trees on the				
		leaves These micro-				
		habitats have different				
		conditions e a light or				
		dark damp or dry These				
		conditions affect what				
		plants and animals live				
		there. The plants and				
		animals in a habitat				
		depend on each other for				
		food and shelter etc. The				
		way that animals obtain				
		their food from plants				
		and other animals can be				
		shown in a food chain				
Vear 3 Pocks	Distinguish between on	Identify and compare the	Compare and aroup			Recognise that living
	object and the material	suitability of a variety of	together different kinds			things have changed over
	from which it is made	everyday materials	of rocks on the basis of			time and that fossils
cnemistry	(Everyday Materials)	including wood metal	their appearance and			provide information about
		plastic glass brick rock	simple physical			living things that
	Tdentify and name a	paper and cardboard for	properties			inhabited the Farth
	variety of everyday	particular uses (Everyday	F Po			millions of years ago
	materials including wood	Materials)				initions of years ago.

plastic, glass, metal,	Describe in simple terms		(Evolution and
water and rock	how fossils are formed		Inheritance)
(Even deventerials)	when things that have		Inner Hance)
(Everyddy materiais)	when mings that have		
	lived are trapped within		
Describe the simple	rock.		
physical properties of a			
variety of everyday	Recognise that soils are		
matanials (Evanudou	made from necks and		
	made from rocks and		
materials)	organic matter.		
Compare and group	Link to geography		
together a variety of			
everyday materials on the	Pupils should: Explore		
bagia of their simple	different kinds of nock		
Dasis of mein simple	different kinds of rock		
physical properties.	and soils, including those		
(Everyday materials)	form the local		
	environment.		
	Working Scientifically		
	here Observing useda		
	by: Observing rocks		
	including those in		
	buildings, gravestones		
	and how they change		
	over time		
	••••		
	To show if a marker based		
	To classify rocks based		
	on if they have grains or		
	crystals. (Hand		
	lens/microscope).		
	To explore how fossils		
	To explore now tossis		
	are made and which		
	types of animals would		
	be found in sedimentary		
	rock.		
	Explore different soils		
	conditional similarities and		
	and ting similarities and		
	differences.		
	Investigate what happens		
	to rocks when they have		
	been rubbed together or		
	been rubbed rogerner of		
	change when in water.		

		To raise and answer		
		questions about the way		
		soils are formed.		
Subject Knowledge		Key Vocabulary:		
		Rock, stone, pebble,		
		boulder, grain, crystals,		
		layers, hard, soft,		
		texture, absorb water,		
		soil, fossil, marble, chalk,		
		granite, sandstone, slate,		
		soil, peat,		
		sandy/chalk/clay soil.		
		Rock is a naturally		
		occurring material.		
		There are different types		
		of rock e.g. sandstone,		
		limestone, slate etc. which		
		have different properties.		
		Rocks can be hard or soft.		
		They have different direct		
		They have different sizes		
		of grain or crystal.		
		They may absorb water.		
		Backs can be different		
		change and sizes (stones		
		nebbles boulders)		
		perpies, bounder 3).		
		Soils are made up of		
		pieces of around down		
		rock which may be mixed		
		with plant and animal		
		material (organic matter).		
		······································		
		The type of rock, size of		
		rock piece and the amount		
		of organic matter affect		
		the property of the soil.		
		Some rocks contain		
		fossils.		
		Fossils were formed		
		millions of years ago.		
		When plants and animals		

		,			
			alea, they tell to the		
			seabed. They became		
			other material Over time		
			the dissolving animal and		
			plant matter is replaced		
			by minerals from the		
			water		
			waron.		
Light	Identity, name, draw and		Recognise that they need		Recognise that light
	label the basic parts of		light in order to see		appears to travel in
Physics	the human body and say		things and that dark is		straight lines.
	which part of the body is		the absence of light.		
	associated with each		Nation that lists in		Use the idea that light
	sense. (Animais including		notice that light is		travels in straight lines
	numans)		reflected from surfaces.		one seen because their
			Personice that light from		aive out on neflect light
			the sun can be dangerous		into the eve
			and that there are wave		into the eye.
			to protect their eves		Explain that we see
			is proteer men eyes.		things because light
			Recognise that shadows		travels from light
			are formed when the light		sources to our eves or
			from a light source is		from light sources to
			blocked by an opaque		objects and then to our
			object.		eyes.
			U U		

		Find nattang in the		
		that the size of the l		Use the idea that light
		that the size of shadows		travels in straight lines
		change		to explain why shadows
				have the same shape as
		Pupils should: Explore		the objects that cast
		what happens when light		them.
		reflects off a mirror or		
		other reflective surfaces.		Pupils should:
		Playing mirror games to		Build on light in Year 3,
		help them answer		exploring the way that
		questions about how light		light behaves, including
		behaves.		light sources, reflection
				and shadows. They
		They should think about		should talk about what
		why they should protect		happens and make a
		their eyes against bright		prediction.
		light.		
		-		Working Scientifically
		They should look for and		by: Deciding where to
		measure shadows, finding		place a rear view mirror
		out how they change and		on cars; designing and
		how they are formed.		making a periscope and
				explaining how it works.
		Note		, , , , , , , , , , , , , , , , , , ,
		Pupils should be warned		They might investigate
		that it is not safe to stare		the relationship between
		directly at the sun even		light sources objects
		when wearing sunclasses		and shadows using
		when wearing sunglasses.		shadow puppets They
		Working Scientifically		could extend this by
		by: Looking at pattarns in		Locking of phonomona
		what happens to shadows		including an printing
		what happens to shadows		including, rainbows,
		moved on the distance		colours on soap bubbles,
		hoves or the distance		objects looking bent in
		between the light source		filtered (These den't meet
		and the object changes.		Tilters. (They don't need
				to explain why these
				occur)
		We do not have any		
		bolded leaps in this		
		topic		
Subject Knowledge		Key Vocabulary:		Key Vocabulary:

	- ,			
		Light, light source, dark,		As for year 3 plus
		absence of light,		straight lines, light rays.
		transparent, translucent,		, , ,
		opaque, shiny, matt.		Light appears to travel in
		surface, shadow, reflect.		straight lines and we see
		mirror sunlight		objects when light from
		danaerous		them goes into our eves
		danger eas.		meningees inte eur eyes.
		We see objects because		The light may come
		our eves can sense light		directly from light
		our eyes can sense right.		sources but for other
		Dark is the absence of		objects some light must
		light Wa cannot can		be reflected from the
		anything in complete		object into our over for
		darking in complete		the chiest to be seen
		darkness.		The object to be seen.
		Some objects for		Objects that black light
		avample the cup light		(and not fully
		bulbs and condias and		transponent) will source
		builds and canales are		shadowa Dagowa light
		Sources of light.		shadows. Because light
		if there is more light		the share of the shadow
		IT There is more light.		The shape of the shadow
				will be the same as the
		Some surfaces reflect		outline shape of the
		light. Objects are easier		object.
		to see when there is less		
		light if they are		
		reflective.		
		The light from the sun can		
		aamage our eyes and		
		therefore we should not		
		look directly at the Sun		
		and can protect our eyes		
		by wearing sunglasses or		
		sunhats in bright light.		
		Snadows are formed on a		
		surface when an opaque or		
		translucent object is		
		between a light source		
		and the surface and		
		blocks some of the light.		
		The size of the shadow		
		depends on the position of		
		the source, object and		
		surface.		

Year 3 Forces and	Find out how the shapes	Compare how things move	Explain that unsupported	
Magnets	of solid objects made	on different surfaces	objects fall towards the	
	from some materials can		Earth because of the	
Veen 5 Ferrer	be changed by squashing,	Notice that some forces	force of gravity acting	
year 5 Forces	bending, twisting and	need contact between	between the Earth and	
	stretching. (Uses of	two objects, but	the falling object	
Physics	everyday materials).	magnetic forces can act		
		at a distance.	Identify the effects of	
DFE priority			air resistance, water	
Forces and Magnetism		Observe how magnets	resistance and friction,	
		attract or repel each	that act between moving	
		other and attract some	surfaces	
		materials and not		
		others.	Recognise that some	
			mechanisms, including	
		Compare and aroup	levers, pulleys and	
		together a variety of	gears, allow a smaller	
		everyday materials on	force to have a areater	
		the basis of whether	effect.	
		they are attracted to a		
		magnet, and identify	Pupils should: Explore	
		some magnetic materials	falling objects and raise	
		j	auestions about the	
		Describe magnets as	effects of air	
		havina two poles	resistance	
		Predict whether two	They should explore the	
		magnets will attract or	effects of air resistance	
		repel each other,	by observing how	
		depending on which poles	different objects such	
		are facing.	as parachutes and	
		-	sycamore seeds fall.	
		Pupils should: Pupils		
		should observe that	They should experience	
		magnetic forces can act	forces that make things	
		without direct contact.	begin to move, get	
		unlike most forces,	faster or slow down.	
		where direct contact is		
		necessary (opening a	Explore the effects of	
		door, pushing a swing).	friction on movement	
		They should explore the	and find out how it	
		behaviour and everyday	slows or stops moving	
		uses of different	objects for example a	
		magnets (for example,	brake on a bicycle	
			wheel.	

	,			
		bar, ring, button and		
		horseshoe).	Explore the effects of	
			levers pulleys and	
		Working Scientifically	simple machines on	
		by: Comparing how	movement	
		different things move		
		and anoun them	Pupils might find out how	
		and group ment.	ccientists such as Galilao	
		Deigo quastions and commu	Galiai and Tasas Nowton	
		Raise questions and carry	balled develop the	
		thing mays on different	the area of an avitation	
		mings move on different	Theory of gravitation.	
		surfaces and garnering	Working Colontifically	
		and recording data to find	working Scientifically	
		answers to their	by: Exploring failing	
		questions.	paper cones or cupcake	
			cases, and designing and	
		Explore the strength of	making a variety of	
		magnets and finding a	parachutes and carrying	
		fair way to test them.	out fair tests to	
			determine which designs	
		Sorting materials into	are the most effective.	
		those that are magnetic		
		and those that are not.	They might explore	
			resistance in water by	
		Looking for patterns in	making and testing boats	
		the way magnets behave		
		in relation to each other		
		and what might effect		
		this, such as strength of		
		the magnet or which pole		
		faces another.		
		Identifying how these		
		properties make magnets		
		useful in everyday items		
		and suggesting creative		
		uses for different		
		magnets.		
Subject Knowledge		Key Vocabulary:	Key Vocabulary:	
ç j		Force, push, pull, twist,	Force, gravity, Earth, air	
		contact force, non-	resistance, water	
		contact force, magnetic	resistance, friction,	
		force, magnet, strength,	mechanisms, simple	
		bar magnet, ring magnet	machines, levers, pullevs	
		button magnet horseshoe	aears	

	1			
		magnet, attract, repel,		
		magnetic material, metal,	A force causes an object	
		iron, steel, poles, north	to start moving, stop	
		pole, south pole	moving, speed up, slow	
			down or change direction.	
		A force is a push or a pull.	Gravity is a force that	
		When an object moves on	acts at a distance.	
		a surface, the texture of		
		the surface and the	Everything is pulled to	
		object affect how it	the Earth by gravity. This	
		moves. It may help the	causes unsupported	
		object to move better or	objects to fall.	
		it may hinder its		
		, movement e.g. ice skater	Air resistance, water	
		compared to walking on ice	resistance and friction	
		in normal shoes.	are contact forces that	
			act between moving	
		A magnet attracts	surfaces. The object may	
		magnetic material. Iron	be moving through the air	
		and nickel and other	or water or the air and	
		materials containing these	water may be moving over	
		e.g. stainless steel, are	a stationary object.	
		magnetic. The strongest	, 3	
		parts of a magnet are the	A mechanism is a device	
		poles. Magnets have two	that allows a small force	
		poles - a north pole and a	to be increased to a	
		south pole. If two like	larger force. The pay	
		poles e.g. two north poles,	back is that it requires a	
		are brought together they	greater movement. The	
		will push away from each	small force moves a long	
		other - repel. If two	distance and the resulting	
		unlike poles e.g. a north	large force moves a small	
		and south, are brought	distance, e.g. a crowbar	
		together they will pull	or bottle top remover.	
		together - attract.	Pulleys, levers and gears	
			are all mechanisms, also	
		For some forces to act	known as simple machines.	
		there must be contact e.g.		
		a hand opening a door, the		
		wind pushing the trees.		
		Some forces can act at a		
		distance e.g. magnetism.		
		The magnet does not need		
		to touch the object that		
		it attracts.		

States of Matter		Compare and group	
		materials together,	
Chemistry		according to whether	
		they are solids, liquids	
DEE Priority		or gases	
Properties and changes of			
metericle		Observe that some	
materials		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.	
		Pupils should: Explore a	
		variety of everyday	
		materials and develop	
		simple descriptions of	
		the state of matter	
		(solids hold their shape,	
		liquids form a pool not a	
		pile, gases escape from	
		an unsealed container).	
		Investigate water as a	
		solid, liquid and gas and	
		note the changes to	
		water when heated or	
		cooled.	
		Nature Trank	
		Note: leachers should	
		avoid using materials	
		where heating is	
		associated with chemical	
		change like burning,	
		baking etc,	

		Working Scientifically by: Grouping and classifying a variety of different materials. Exploring the effect of heat on butter, chocolate. They might observe and record evaporation over a period of time, such as a puddle in the playground or washing drying or snowmen melting.	
Subject Knowledge		 Key Vocabulary: Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle. A solid keeps its shape and has a fixed volume. A liquid has a fixed volume but changes in shape to fit the container. A liquid can be poured and keeps a level, horizontal surface. A gas fills all available space; it has no fixed shape or volume. Granular and powdery solids like sand can be confused with liquids because they can be poured, but when poured 	

		they form a heap and	
		they do not keep a level	
		surface when tipped.	
		Each individual grain	
		demonstrates the	
		properties of a solid.	
		Melting is a state change	
		from solid to liquid.	
		Freezing is a state	
		change from liquid to	
		solid. The freezing point	
		of water is 0°C. Boiling is	
		a change of state from	
		liguid to gas that happens	
		when a liquid is heated to	
		a specific temperature	
		and bubbles of the gas	
		can be seen in the liquid.	
		Water boils when it is	
		heated to 100°C.	
		Evaporation is the same	
		state change as boiling	
		(liguid to gas) but it	
		happens slowly at lower	
		temperatures and only at	
		the surface of the liquid.	
		Evaporation happens more	
		quickly if the	
		temperature is higher	
		the liquid is spread out or	
		it is windy.	
		,	
		Condensation is the	
		change back from a gas	
		to a liquid caused by	
		cooling	
		Water at the surface of	
		seas, rivers etc.	
		evaporates into water	
		vapour (a gas). This rises	
		cools and condenses back	

			into a liquid forming clouds. When too much water has condensed the water droplets in the cloud get too heavy and fall back down as rain, snow, sleet etc. and drain back into rivers etc. This is known as precipitation. This is the water cycle.	
Sound	Identify, name, draw and label the basic parts of		Identify how sounds are made, associating some	
Physics	the human body and say which part of the body is associated with each sense. (Animals including humans)		of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases. Pupils should: Explore and identify the way sound is made through vibration in a variety of different musical instruments from around the world.	

		How pitch, volume can be altered in a variety of ways. Working Scientifically by: Finding patterns in the sounds that are made by different objects like saucepan lids, different size elastic bands. They might make earmuffs to block out sound using different materials. They could make and play their own instruments.	
Subject Knowledge		Key Vocabulary: Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation A sound source produces vibrations which travel through a medium from the source to our ears. Different mediums such as solids, liquids and gases can carry sound but sound cannot travel through a vacuum (an area empty of matter). The vibrations cause parts of our body inside our ears to vibrate, allowing us to hear (sense) the sound.	

		The loudness (volume) of	
		the sound depends on the	
		strength (size) of	
		vibrations which	
		decreases as they travel	
		through the medium.	
		Therefore, sounds	
		decrease in volume as you	
		move away from the	
		source.	
		A sound insulator is a	
		material which blocks	
		sound effectively.	
		Pitch is the highness or	
		lowness of a sound and is	
		affected by features of	
		objects producing the	
		sounds. For example,	
		smaller objects usually	
		produce higher pitched	
		sounds.	
Electricity		Identify common	Associate the brightness
		appliances that run on	of a lamp or the volume
DEE Priority - Electricity		electricity.	of a buzzer with the
			number and voltage of
		Construct a simple	cells used in the circuit.
		series electrical circuit,	
		identifying and naming	Compare and give
		its basic parts, including	reasons for variations in
		cells, wires, bulbs,	how components
		switches and buzzers.	function, including the
			brightness of bulbs, the
		Identify whether or not	loudness of buzzers and
		a lamp will light in a	the on/off position of
		simple series circuit,	switches.
		based on whether or not	
		the lamp is part of a	Use recognised symbols
		complete loop with a	when representing a
		battery.	simple circuit in a
			diagram.
		Recognise that a switch	
		opens and closes a	Pupils should: build on
		circuit and associate	their work from Year 4.

		this with whether or not	
		a lamp lights in a simple	Pupils should construct
		series circuit.	simple series circuits, to
			help them answer
		Recognise some common	questions about what
		conductors and	happens when they try
		insulators, and associate	different components,
		metals with being good	switches, bulbs, buzzers
		conductors.	and motors. They should
			learn how to represent a
		Pupils should:	simple circuit in a
		Construct simple series	diagram using recognised
		circuits, trying	symbols.
		different components,	
		such as bulbs, buzzers,	Note: Pupils are
		motors, including	expected to learn about
		switches and use these	series circuits, not
		circuits to create a	parallel circuits. Pupils
		simple device.	should be taught to take
			the necessary
		To draw their circuit as	precautions to work
		a pictorial	safely with electricity.
		representation, not	
		necessarily using	Working Scientifically
		conventional circuit	by: Systematically
		symbols at this stage	identifying the effect of
		these will be introduced	changing one component
		in Year 6.	at a time in a circuit.
		Note	Designing and making a
		Pupils should be taught	set of traffic lights.
		about taking precautions	-
		for working safely with	A burglar alarm or some
		electricity.	other useful circuits.
		-	
		Voltage not to be	
		formally defined at this	
		point.	
		Working Scientifically	
		by: Observing patterns,	
		for example that bulbs	
		get brighter if more	
		cells are added.	
		Metals tend to conduct	
		electricity.	

		Some materials cannot be used to connect across a gap in a circuit.	
Subject Knowledge		Key Vocabulary: Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non- metal, symbol	Key Vocabulary: Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage NB Children do not need to understand what voltage is but will use volts and voltage to describe different batteries. The words cells and batteries are now used interchangeably.
		Note Children in year 4 do not ned to use standard symbols as this is taught in year 6.	Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound.
		Many household devices and appliances run on electricity. Some plug in to the mains and others run on batteries.	If you use a battery with a higher voltage, the same thing happens. Adding more bulbs to a circuit will make each bulb less bright. Using
		An electrical circuit consists of a cell or battery connected to a component using wires. If there is a break in the circuit a loose connection	more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. Turning a switch off (open) breaks a singuit co
		or a short circuit the component will not work. A switch can be added to the circuit to turn the component on and off.	the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well.

			Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Water, if not completely pure, also conducts electricity.		You can use recognised circuit symbols to draw simple circuit diagrams.
Earth and Space	Observe changes across the four seasons.			Describe the movement of the Earth, and other	
Physics	(Seasonal changes)			planets, relative to the Sun in the solar system.	
	Observe and describe weather associated with			Describe the movement	
	the seasons and now day length varies. (Seasonal chances)			the Earth.	
	changes)			Describe the Sun, Earth and Moon and approximately spherical bodies.	
				Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	
				Pupils should: Be introduced to a model of the Sun and Earth to help them explain day and night.	
				Learn that the Sun is a star at the centre of the solar system and has eight planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn,	

	1			
			Uranus and Neptune)	
			Plute real easified as a	
			Pluto reclassified as a	
			dwarf planet in 2006.	
			Know that the mean is a	
			know that the moon is a	
			celestial body that	
			orbits a planet.	
			Note:	
			Warn children not to	
			look dinactly at the cum	
			look directly at the sun	
			even with sunglasses as	
			it can damage their	
			eves	
			eyes.	
			Find out about the way	
			ideas about the solar	
			system nave developed,	
			understanding how	
			aeocentric model aave	
			way to believentrie	
			way to henocentric	
			model. Scientists	
			Ptolemy, Alhazan and	
			Conomicus	
			copernicus.	
			Working Scientifically	
			by: comparing time of	
			by: comparing time of	
			day in different places	
			by using internet links	
			or direct communication	
			Creating simple models	
			of the solar system.	
			constructing simple	
			shadow clocks and	
			sundials calibrated to	
			snow miaday and the	
			start and end of the	
			school day.	
			Why they think	
			Stonehenge might have	
			been used as	
			been used us	
			astronomical clocks.	
Subject Knowledge			Key Vocabulary:	
J · · · · · · · · · · · · · ·				

	-			
			Earth, Sun, Moon,	
			(Mercury, Jupiter,	
			Saturn, Venus, Mars,	
			Uranus, Neptune)	
			spherical, solar system,	
			rotates, star, orbit,	
			planets	
			The Sun is a star. It is at	
			the centre of our solar	
			system.	
			There are 8 planets (can	
			choose to name them, but	
			not essential). These	
			travel around the Sun in	
			fixed orbits.	
			Earth takes 365‡ days to	
			complete its orbit around	
			the Sun. The Earth	
			rotates (spins) on its axis	
			every 24 hours. As Earth	
			rotates half faces the	
			Sun (here it is day) and	
			half is facing away from	
			the Sun (night).	
			As the Easth potetos the	
			As the Earth Polates the	
			across the clay. The Moon	
			arbite the Earth It takes	
			about 28 days to	
			complete its orbit. The	
			Sun Earth and Moon are	
			approximately spherical	
			approximately spherical.	

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Evolution and Inheritance	Ecosystem	Describe in simple terms	Ecosystem	Ecosystem	
	Identify that most living	how fossils are formed	Recognise that	Recognise that	t living
Biology	things live in habitats to	when things that have	environments can change	things have ch	anged over
Blology	which they are suited and	lived are trapped within	and that this can	time and that	fossils
	describe how different	rock. (Rocks)	sometimes pose a danger	provide inform	nation about
DFE Priority	habitate provide for the		to living things (Living	living things th	
Evolution and Inheritance	hadrans provide for the		thing and their hebitets)	inhobited the	Eanth
	basic needs of all feren		Things and Their habitats)	innabiled the	Earin
Feasystem	kinds of animals, plants,			millions of yea	rs ago.
Cosystem	and now they depend on				
	each other. (Y2 Living			Recognise that	r living
	things and their habitats)			things produce	2 offspring
				of the same ki	nd, but
				normally offsp	ring vary
				and are not ide	entical to
				their parents	
				Identify how	animals
				and plants are	e adapted
				to suit their o	environment
				in different w	avs and
				that adaptati	on may
					ion may
				lead to evolut	ion.
				Pupils should:	Build on
				their knowledg	ge from
				Year 3 rocks.	
				Pupils should t	find out
				about how livi	ng things
				on Earth have	changed.
					•
				They should b	e
				introduced the	at
				characteristic	s are
				passed down	to the
				offenning (dec	hreeds)
					, breeds).
				Annualista	
				Appreciate th	
				variation in of	Tspring
				over time can	make
				animals more	or less
				able to surviv	e (Giraffes
				necks getting	longer)
				They could fi	nd out
				about the wor	k of Many

			Anning, Charles Darwin or Alfred Wallace. Note: You don't need to know about genes or chromosomes. Working Scientifically by: Observing and raising questions about local animals and how they have adapted to their environment. How some animals have adapted to survive extreme conditions. They could investigate and analyse the adaptions of beak, gills, tendrils or brightly coloured and scented flowers.
Subject Knowledge			Key Vocabulary: Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils. All living things have offspring of the same kind, as features in the offspring are inherited from the parents. Due to sexual reproduction, the offspring are not identical to their parents and vary from each other. Plants and animals have characteristics that make

			them suited (adapted) to
			their environment. If the
			environment changes
			rapidly some variations of
			a species may not suit the
			new environment and will
			die. If the environment
			changes slowly, animals
			and plants with variations
			that are best suited
			survive in greater
			numbers to reproduce and
			pass their characteristics
			on to their young. Over
			time these inherited
			characteristics become
			more dominant within the
			population. Over a very
			long period of time these
			characteristics may be so
			different to how they
			were originally that a new
			species is created. This is
			evolution.
			Fossils give us evidence
			of what lived on the
			Earth millions of year ago
			and provide evidence to
			support the theory of
			evolution.
			More recently scientists
			such as Darwin and
			Wallace observed how
			living things adapt to
			ditterent environments
			to become distinct
			varieties with their own
			characteristics.

	KS3
Plants	Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.
Living things and their habitats	 Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms. Differences between species
Animals including humans	 Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. The structure and functions of the gas exchange system in humans, including adaptations to function. The mechanism of breathing to move air in and out of the lungs. The impact of exercise, asthma and smoking on the human gas exchange system.
Evolution and Inheritance	 Heredity as the process by which genetic information is transmitted from one generation to the next. A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model. The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection. Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction.
Seasonal Changes	The seasons and the Earth's tilt, day length at different times of year, in different hemispheres
Materials	 Chemical reactions as the rearrangement of atoms. Representing chemical reactions using formulae and using equations. Combustion, thermal decomposition, oxidation and displacement reactions. Defining acids and alkalis in terms of neutralisation reactions. The pH scale for measuring acidity/alkalinity; and indicators.
Rocks	 The composition of the Earth. The structure of the Earth. The rock cycle and the formation of igneous, sedimentary and metamorphic rocks.
Light	 The similarities and differences between light waves and waves in matter. Light waves travelling through a vacuum; speed of light. The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface. Use of ray model to explain. imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye. Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras. Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection.
Forces	 Magnetic fields by plotting with compass, representation by field lines. Earth's magnetism, compass and navigation. Forces as pushes or pulls, arising from the interaction between two objects. Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces.

Time Allocation 2 ho	urs per week – STEM	week normally	y in Block 4.
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Moment as the turning effect of a force.
• Forces: associated with deforming objects; stretching and squashing - springs; with rubbing and friction between surfaces, with pushing things out of the
ωαγ;
 resistance to motion of air and water.
 Forces measured in Newtons, measurements of stretch or compression as force is changed.
Waves on water as undulations which travel through water with transverse motion; these waves can be reflected, and add or cancel -
• superposition.
 Frequencies of sound waves, measured in Hertz (Hz); echoes, reflection and absorption of sound.
 Sound needs a medium to travel, the speed of sound in air, in water, in solids.
• Sound produced by vibrations of objects, in loud speakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are
longitudinal.
Auditory range of humans and animals.
Pressure waves transferring energy; use for cleaning and physiotherapy by ultra-sound. • Waves transferring information for conversion
 to electrical signals by microphone.
• Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of
charge.
 Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential
• difference (p.d.) to current.
Differences in resistance between conducting and insulating components (quantitative).
Static electricity.
Gravity force, weight = mass x gravitational field strength (g), on Earth g=10 N/kg, different on other planets and stars; gravity forces
• between Earth and Moon, and between Earth and Sun (qualitative only).
Our Sun as a star, other stars in our galaxy, other galaxies.
• The seasons and the Earth's tilt, day length at different times of year, in different hemispheres.
The light year as a unit of astronomical distance.