

## Progression

WEST HOVE INFANT SCHOOL A family of friends



Spring 1 –

		ear R	V4	V2	V 2	V 4	V5	VC
		orld, Managing Self)  Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
By the end  Explore the na observations and  Know some simil natural work environments, dra has been dependent on the natural world and char Manage their ow including dres		By the end of Reception, children:  • Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG)  Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Manage their own basic hygiene and personal needs, including dressing and going to the toilet, and understand the importance of healthy food choices (ELG)		n should be taught to use the methods, processes and skills programme of study content ow:  and recognising that they can lin different ways using simple equipmenting simple tests and classifying and ideas to suggest answers juestions ag data to help in answering lestions	By the end of Year 4, children:  Plan: Ask relevant questions and use different types of scientific enquiries to answer them.  Do: Set up simple practical enquiries, comparative and fair tests.  Record: Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers  Review: report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  identify differences, similarities or changes related to simple scientific ideas and processes  use straightforward scientific evidence to answer questions or to support their findings		By the end of Year 6, children:  Plan: Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  Do: carry out fair tests, recognising and controlling variables: deciding what observations or measurements to make over time and for how long; looking for patterns and relationships  Record: Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs  Review: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of - and degree of trust in - results, in oral and written forms  Identifying scientific evidence that has been used to support or refute ideas or arguments	
Working Scientifically	Uses all his/her senses in hands-on exploration of natural materials  Talk about what they see, using a wide vocabulary.  Explore how things work	Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Describe what they see, hear and feel whilst outside.  Explores the natural world around him/her  Autumn 1 – Gummy Bears Experiment Light and Dark Experiment Outdoor learning – Leaf parcels Outdoor learning – Spider Hunt  Autumn 2 – Bears – similarities and differences Panda research Rotting apple experiment Porridge Making – Heat, senses.  Outdoor learning – Porridge, change of state.  More or less water. Outdoor learning – Herb tea, senses	To begin to ask simple questions and recognise that they can be answered in different ways -explore the world around them, leading them to ask some simple scientific questions about how and why things happen; . Termly Science Days Flip slide in every Science Session across the year	Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum -ask people questions and use simple secondary sources to find answers;  Half termly Science Day Flip slide in every Science Session across the year	PLAN: Ask relevant questions and use different types of scientific enquiries to answer them  -The children consider their prior knowledge when asking questionsThey independently use a range of question stems Where appropriate, they answer these questionsThe children answer questions posed by the teacherGiven a range of resources, the children decide for themselves how to gather evidence to answer the question.  Weekly science lessons	PLAN: Ask relevant questions and use different types of scientific enquiries to answer them  -The children consider their prior knowledge when asking questionsThey independently use a range of question stems. Where appropriate, they answer these questionsThe children answer questions posed by the teacherGiven a range of resources, the children decide for themselves how to gather evidence to answer the questionThey recognise when secondary sources can be used to answer questions that cannot be answered through practical workThey identify the type of enquiry that they have chosen to answer their question.  Weekly science lessons	PLAN: Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  -The children independently ask scientific questions Given a wide range of resources, the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work  - The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time. They look for patterns and relationships.  Weekly science lessons	PLAN: Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry. Given a wide range of resources, the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work. The children select from a range of practical resources to gather

evidence to answer their

Outdoor learning – Ice melting observations, playdough making – observing changing of state Pushes and pulls investigation Investigating mouldy bread – change of state Smelling observations – different scents  Spring 2 – Planting seeds observations Cooking gingerbread men – changes of state  Summer 2 – Water cycle observations – rain, condensations Uses of water Floating and sinking experiment Caring for the ocean, Oceans and plastic pollution, Climate change link	Use simple equipment to observe closely  -observe the natural and humanly constructed world around them; -use simple measurements and equipment; make careful observations, sometimes using equipment to help them observe carefully.  Termly Science Days Autumn 2 – Science Day – experiments Summer 1 – Planting beans, observation of daffodil, bean diary, observational leaf drawing	Use simple equipment to observe closely including changes over time  -use simple measurements and equipment to provide answers to questions make careful observations, sometimes using equipment to help them observe carefully, identify, classify, gather data and ask and answer questions  Half termly Science Day Autumn 1 – Science Day - Moon Craters experiment Autumn 2 – Science Day - Moon craters experiment Materials sorting, waterproof experiment, forces experiment Spring 2 –	DO: Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  The children make systematic and careful observations. They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.  Autumn 1: Comparing and grouping different types of rocks. Investigating the permeability of different soils.	DO: Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  The children make systematic and careful observations. They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.  Autumn 1: Melting times of different types of matter. What affects the rate of evaporation.  Autumn 2: Describe and explain sounds	DO: Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate  The children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale.  -During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further	questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.  Weekly science lessons  DO: Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate  The children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale.  -During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the
		·	Autumn 2: Reflective surfaces Making shadows Changing shadows	sounds Explore pitch Finding materials that absorb sound.		
	Perform simple tests  -carry out simple practical tests, using simple	Perform simple comparative tests -carry out simple practical	DO: Setting up simple practical enquiries, comparative and fair tests	DO: Setting up simple practical enquiries, comparative and fair tests	DO: Setting up different types of scientific enquiries to answer questions, including recognising and	DO: Planning different types of scientific enquiries to answer
	equipment; -experience different types of scientific enquiries, including practical	tests, using simple equipment; -experience different types of scientific enquiries,	-The children select from a range of practical resources to gather evidence to answer questions generated	-The children select from a range of practical resources to gather evidence to answer questions generated by	including recognising and controlling variables where necessary  -The children select from	questions, including recognising and controlling variables where necessary
	activities;  Termly Science Days	including practical activities; - talk about the aim of	by themselves or the teacher.  -They follow their plan to	questions generated by themselves or the teacher. -They follow their plan to carry out: observations and	-The children select from a range of practical resources to gather evidence to answer the	-The children select from a range of practical resources
	Autumn 2 – Science Day	scientific tests they are	carry out: observations and	tests to classify; comparative	questions they have	to gather evidence to

	ung riving a pr	tacts to algorify as an area time	and simple fair tests	ganarated Thousand	anguar the acceptions
- experiments Summer 1 - Planting beans, observation of daffodil, bean diary, observational leaf drawing	working on.  Half termly Science Day Autumn 1 – Science Day - Moon Craters experiment Autumn 2 – Science Day - Moon craters experiment Materials sorting, waterproof experiment, forces experiment Spring 2 – Plants, seeds experiment	tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.  Summer 1: Comparing how well plants grow in the dark, in sunlight, with water, without water Spring 1: Investigate which materials are magnetic and which are not	and simple fair tests; observations over time; and pattern seeking.  Summer 2: Components required for an electrical circuit – Devise an experiment to test the effect of varying components.	generated. They carry out fair tests, recognising and controlling variablesThey choose a type of enquiry to carry outThey decide what observations or measurements to make over time and for how longThey look for patterns and relationshipsThey recognise how secondary sources can be used to answer questions that cannot be answered through practical work.  CONTEXT:	answer the questions they have generated. They carry out fair tests, recognising and controlling variablesThey choose a type of enquiry to carry out and justify their choiceThey decide what observations or measurements to make over time and for how longThey look for patterns and relationships using a suitable sampleThey recognise how secondary sources can be used to answer questions that cannot be answered through practical work.
Identify and classify  -use simple features to compare objects, materials and living things; -decide how to sort and classify objects into simple groups with some help;  Termly Science Days Autumn 2 – Animal grouping, diet Autumn 2 – Science Day animal groups and feat Spring 1 – Material sort Spring 2 – Material properties  Summer 1 – Evergreen deciduous comparison, observational leaf draw Summer 2 – Animal group sorting	record, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables.  Half termly Science Day Autumn 1 – Science Day - Moon Craters experiment Autumn 2 – Science Day - Moon craters	RECORD:  Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers  -make systematic and careful observations, including using magnifying glasses, taking photographs, making comparisons  -use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.  -use more precise equipment, eg; decibel meters/ forcemeters  Autumn 1-2: Rocks, Fossils and Soils: amount of water absorbed by soils; relative hardness of rocks – Mohs Scale; Rock sorting by observable features and Natural vs Man-made	RECORD:  Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers  -make systematic and careful observations, including using magnifying glasses, taking photographs, making comparisons  -use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.  -use more precise equipment, eg; decibel meters/ forcemeters  Sound:	RECORD: -Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs  -select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scaleDuring an enquiry, make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value).  CONTEXT:	RECORD:  -Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs  -select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale.  -During an enquiry, make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in

			Spring 1: Forces: amount of			order to get accurate
			force required to overcome			data (closer to the
			friction -Newton meters			true value).
						,
						CONTEXT:
	Gather and record data	Gather and record data	RECORD:	RECORD:	RECORD:	RECORD:
	to help in answering	to help in answering	Gather, record, classify and	Gather, record, classify and	Record data and results	Record data and
	questions	questions including	present data in a variety of	present data in a variety of	of increasing complexity,	results of increasing
	•	from secondary sources	ways to help in answering	ways to help in answering	using scientific diagrams	complexity, using
	-use simple features to	of information	questions	questions	and labels, classification	scientific diagrams
		-3	·	•	keys, tables, scatter	and labels,
	compare objects,	-record and	Record findings using simple	Record findings using simple	graphs, bar and line	classification keys,
	materials and living		scientific language,	scientific language, drawings,	graphs	tables, scatter
	things;	communicate findings	drawings, labelled diagrams,	labelled diagrams, keys, bar	0 -1-	graphs, bar and line
	-decide how to sort and	in a range of ways	keys and tables	charts, and tables	The children decide how	graphs
	classify objects into simple	with support;	.,		to record and present	0 17 1
	groups with some help;	-sort, group, gather and	The children present	The children sometimes	evidence, sometimes	The children decide
		record data in a variety	evidence and their	decide how to record and	selecting from a bank of	how to record and
	Termly Science Days	of ways to help in	observations- using	present evidence and	suggested outcomes.	present evidence.
	Autumn 1 – Senses	answering questions	photographs, videos,	their observations- using	anggeorea ourconnes.	p. cocin condende.
	investigation	such as in simple sorting	pictures, labelled	photographs, videos,	They record observations	They record
	Autumn 2 – Animal	diagrams, pictograms,	diagrams or writing.	pictures, labelled	e.g. using annotated	observations e.g.
	grouping, diet	tally charts, block	alagianis of withing.	diagrams or writing.	photographs, videos,	using annotated
	Autumn 2 – Science Day –	diagrams and simple	Children record their	alagianis of whiting.	labelled diagrams,	photographs, videos,
	animal groups and features	tables.	measurements using	Children record their	observational drawings,	labelled diagrams,
	Spring 1 – Material sorting		different ways to record	measurements using	labelled scientific	observational
	Spring 2 – Material	Half termly Science Day	data-	different ways to record	diagrams or writing.	drawings, labelled
	properties	Autumn 1 – Science Day -	tables, tally charts and	data-	diagrams of writing.	scientific diagrams
	Summer 1 – Planting	Moon Craters experiment	bar charts (given	tables, tally charts and	They record	or writing.
	beans, observation of	Autumn 2 –	templates, if required,	bar charts (given	measurements e.g. using	or writing.
	daffodil, bean diary,	Science Day - Moon craters	to which they can add	templates, if required, to	tables, tally charts, bar	They record
	observational leaf	experiment	headings).	which they can add	charts, line graphs and	measurements e.g.
	drawing	Materials sorting,	Children use tables,	headings).	scatter graphs.	using tables, tally
	Summer 2 – Animal groups	waterproof experiment,	Venn diagrams, Carroll	Children use tables, Venn	scatter graphs.	charts, bar charts,
	sorting	forces experiment	diagrams, mind maps to	diagrams, Carroll	They record classifications	line graphs and
	Sorting	Spring 1 –	record classifications.	diagrams, mind maps to	e.g. using tables, Venn	scatter graphs.
		Habitats and Animals	record crassifications.	record classifications.	diagrams, Carroll	seatter graphs.
		Food chains, Living, Dead,	Children are supported		diagrams and	They record
		Never Lived	to present the same	Children are supported to	classification keys.	classifications e.g.
		Spring 2 –	data in different ways in	present the same data in	crassification keysi	using tables, Venn
		Plants, seeds experiment	order to help with	different ways in order to	-Children sometimes	diagrams, Carroll
		Summer 2 – Healthy living/	answering the question.	help with answering the	present the same data in	diagrams and
		diet diagrams	Autumn 1:	question.	different ways in order to	classification keys.
			Comparing and grouping	Spring 2:	help with answering a	
			different types of rocks; Soil	Grouping and classifying	question	-Children sometimes
			posters; rock hardness &	living things	*	present the same
			permeability tables; soil		Report and present findings	data in different
			permeability measurements		from enquiries, including	ways in order to help
			· · · · · · · · · · · · · · · · · · ·		conclusions, causal	with answering a
			Autumn 2/Spring 1:		relationships and degree of	question
			Photographing shadows,		trust in results, in oral and	•
			mapping path of light-		written forms such as displays	
			beams; diagram of light		and other presentations	Report and present
			travelling into eye with key			findings from
			parts of eye labelled		Grouping and classifying	enquiries, including
					materials by their	conclusions, causal
					properties;	relationships and
						explanations of and
						degree of trust in
						results, in oral and
						written forms such
						as displays and other
						presentations
						CONTEXT:

REVIEW: REVIEW: **REVIEW: REVIEW:** Use his/her Use his/her Report on findings from Report on findings from observations of the observations and ideas Report and present Report and present human/ naturally enquiries, including oral and enquiries, including oral and findings from enquiries, findings from to suggest answers to enquiries, including occurring world around questions noticing written explanations, written explanations, displays including conclusions, or presentations of results causal relationships and conclusions, causal them to share ideas and similarities, differences displays or presentations of results and conclusions and conclusions explanations of - and relationships and to suggest answers to and patterns degree of trust in explanations of - and questions Children communicate their Children communicate their results, in oral and degree of trust in -Communicate his/her ideas, what he/she does findings to an audience both findings to an audience both written forms results, in oral and -notice links between cause orally and in writing, using orally and in writing, using written forms and what he/she finds and effect with support; appropriate scientific appropriate scientific In their conclusions, out in a variety of ways -begin to notice patterns vocabulary. vocabulary. children: *In their conclusions,* and relationships with - identify causal children: notice links between cause support; Use results to draw Use results to draw relationships and - identify causal and effect -begin to draw simple simple conclusions, simple conclusions, make patterns in the natural relationships and -notice patterns and conclusions; make predictions for predictions for new world from their evidence patterns in the relationships new values, suggest values, suggest - identify results that do natural world from -use simple and scientific improvements and raise improvements and raise not fit the overall pattern their evidence language; -draw simple conclusions; further questions further questions - explain their findings - identify results that -read and spell scientific use simple and scientific do not fit the overall using their subject vocabulary at a level language; They draw conclusions They draw conclusions knowledge pattern consistent with their -read and spell scientific based on their evidence based on their evidence - explain their increasing word reading vocabulary at a level and current subject and current subject -They evaluate, for findings using their and spelling knowledge at consistent with their knowledge. knowledge. example, the choice of subject knowledge key stage 1; increasing word reading method used, the control -They identify ways in -They identify ways in and spelling knowledge at which they would do it which they adapted their of variables, the precision -They evaluate, for **Termly Science Days** key stage 1; differently if they method as they and accuracy of example, the choice Autumn 1 - Human body -talk about their repeated the enquiry. progressed or how they of method used, the measurements and Senses findings to a variety of -Children use their would do it differently if control of variables, Autumn 2 - Animal audiences in a variety evidence to suggest they repeated the -They identify limitations the precision and grouping, diet of ways. values for different that reduce the trust they accuracy of enquiry. Autumn 2 - Science Day items tested using the -Children use their have in their data. measurements and animal groups and features **Half termly Science Day** the credibility of same method e.g. the evidence to suggest Spring 1 – Material sorting Autumn 1 - Science Day distance travelled by a values for different items -They communicate their secondary sources Spring 2 - Material car on an additional tested using the same findings using relevant **Moon Craters experiment** used. properties Autumn 2 surface. method e.g. the distance scientific language and Summer 1 - Planting -Following a scientific travelled by a car on an illustrations. -They identify any Science Day - Moon craters beans, observation of experience, the children additional surface. limitations that experiment -Following a scientific reduce the trust they daffodil, bean diary, begin to recognise Materials sorting, observational leaf further questions which experience, the children Identifying scientific have in their data. waterproof experiment, drawing can be answered by ask further questions evidence that has been forces experiment Summer 2 - Animal groups extending the same which can be answered used to support or refute -They communicate Spring 1 enquiry. by extending the same ideas or arguments their findings to an sorting **Habitats and Animals** enquiry. audience using Food chains, Living, Dead, relevant scientific -Children answer their **Never Lived** own and others' language and Spring 2 questions based on illustrations. Plants, seeds experiment observations they have Summer 2 - Healthy living/ Identifying scientific made, measurements diet diagrams they have taken or evidence that has information they have been used to gained from secondary support or refute sources. ideas or arguments When doing this, they discuss whether other -Children answer evidence e.g. from other their own and groups, secondary others' questions sources and their based on scientific understanding, observations they supports or refutes their have made, answer. measurements they have taken or -They talk about how information they their scientific ideas have gained from

						change due to new evidence that they have gathered.  -They talk about how new discoveries change scientific understanding	secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer.  -They talk about how their scientific ideas change due to new evidence that they have gathered.  -They talk about how new discoveries change scientific understanding
Vocabulary	Questions, investigation, same, changes, different, light, dark, guess, predictions, experiment,  See, sight, smell, touch, feel, senses  Reaction, bubble, explode, explore	Investigate, questions, predict, observe, look, senses, practical, experiment, real life, gather, record, answer, world, science, test, equipment, test, answer, observing, equipment, identify, classify, sort, group, record, diagram, map, compare, contrast, describe,	Investigate, questions, predict, observe, look, senses, practical, experiment, real life, gather, record, answer, world, science, test, equipment, test, answer, observing, equipment, identify, classify, sort, group, record, diagram, chart, map, data, compare, contrast, describe, biology, chemistry, physics	practical work, fair testing, relationships, accurate, thermometer, timer, force meter, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, findings, properties, characteristics, conclusion, explanation, reason, evaluate, improve biology, chemistry, physics	practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, force meter, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve biology, chemistry, physics	practical work, fair testing, variables, independent variable, dependent variable, control variable, relationships, accurate, thermometer, data logger, force meter, stopwatch, timer, accuracy, precision, estimate, data, diagram, identification key, chart, bar chart, scatter graphs, bar graphs, line graphs, prediction, similarity, difference, evidence, information, findings, justify, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve  biology, chemistry, physics	practical work, fair testing, variables, independent variable, dependent variable, control variable, relationships, accurate, thermometer, data logger, force meter, stopwatch, timer, accuracy, precision, estimate, data, diagram, identification key, chart, bar chart, scatter graphs, bar graphs, line graphs, prediction, similarity, difference, evidence, information, findings, justify, causal relationship. argument (science,) criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve
Animals, Including Humans	By the end of Reception, children:     Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)     Manage their own basic hygiene and personal needs, including dressing and going to the toilet, and	By the end of Year 2:  notice that animals, including humans, have offspring which grow into adults  find out about and describe the basic needs of animals, including humans, for survival (water, food and air)  describe the importance for humans of		By the end of Year 4, children:  Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food – they get nutrition from what they eat.		By the end of Year 6, children:  Describe the changes as humans develop to old age. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and	

understand the importance of healthy food choices (ELG)  exercise, eating the right amounts of different types of food, and hygiene	<ul> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> <li>Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>Identify the different types of teeth in humans and their simple functions.</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul> <li>Iifestyle on the way their bodies function.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>
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Understands the key features of the life cycle of a plant and an animal  Is beginning to understand the need to respect and care for the natural environment and all living things  Use all their senses in handson exploration of natural materials.  Begin to make sense of their own life-story and family's history.	Explores the natural world around him/her  Talk about members of their immediate family and community.  Name and describe people who are familiar to them.  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Autumn 1 — Families  Outdoor learning — Spider Hunt  Autumn 2 — Bears — similarities and differences Panda research  Spring 1 — Caring for animals — looking after pets.  Summer 1 — Dinosaurs, types, similarities, differences, fossils  Summer 2 — Sketches of fish	Identify and no variety of come animals include amphibians, robirds and mark.  Autumn 2 – Son Day Summer 2

name a mmon iding fish, reptiles, ammals

Science

Understand that animals, including humans, have offspring which grow into adults

Spring 2

Children can name the nutrients found in food.

Children understand that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients.

Children can name some bones that make up their skeleton, giving examples that support, help them move or provide protection

Children can describe how muscles and joints help them to move.

Summer 2: Children read and compare nutritional information on food packaging and compare nutritional values between foods.

Create a healthy eating plan for a client.

Investigate the sugar and fat contents in different foods and drinks using a bar chart to present findings.

Use of x ray apps for children to predict and see for themselves what different bones look like.

Create a model of a working joint.

Children can sequence the main parts of the digestive system

Can draw the main parts of the digestive system onto a human outline

Can describe what happens in each part of the digestive system

Spring 1 Research the function of the digestive system.

Use collage materials to build 3D pictures of the digestive system

Digestion re-enactment, using tights, plastic bag, bananas & crackers, orange juice, paper plate

Use 'Virtuali-Tee' with ipads, to see the digestive system.

Children can discuss how when babies are young, they grow rapidly. They are very dependent on their parents. Record data using line graphs or bar charts in the context of a baby's growth in weight and height in their first year.

As they develop, they learn many skills.

Map a timeline that indicates stages in the growth and development of humans.

Identify the changes that take place in old age.

Children can describe the changes that take place at puberty. A child's body changes and develops primary and secondary sexual characteristics. This enables the adult to reproduce.

Analyse the similarities and differences between how boys and girls experience puberty.

N.B. This topic is taught alongside PSHE under the new statutory requirements for relationships and health education.

Use secondary sources to explore gestation periods and life expectancies of different animals.

Children can state that the heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the body.

Can draw (or label) a diagram of the circulatory system and label the parts and annotate it to show what the parts do.

Children can describe the important jobs of the blood vessels and blood.

Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products.

Children can use the role play model to explain the main parts of the circulatory system and their role.

They can use 'Virtuali-Tee' with iPad to see the position of the heart.

Create life-size models of the heart.

Dissect a pig's heart -Links with secondary school visit for this activity.

Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system.

Produce a piece of writing that demonstrates the key

				knowledge e.g. information text.

	 Describe and compare		Children can name	Children understand that	 Children can understand
	the structure of a		some bones that make	humans have four types	that regular exercise is
	variety of common		up their skeleton, giving	of teeth: incisors for	important for a healthy
	animals (fish,		examples that support,	cutting; canines for	body.
	amphibians, reptiles,		help them move or	tearing; and molars and	
	birds and mammals,		provide protection	premolars for grinding	Children can discuss
	including pets)			(chewing).	how diet and
			Children can describe		exercise have an
	Autumn 2 – Science		how muscles and joints	Children can identify the	impact on the way
	Day		help them to move.	three different types of	our bodies function.
	Summer 2		1	teeth in their mouth and	Carry out a range of
			Use of x ray apps for	talk about their shape	pulse rate investigations:
	Describe the lifecycle of		children to predict and see	and what they are used	
	a butterfly – real		for themselves what	for.	fair test – effect of
	caterpillar link –		different bones look like.		different activities on my
	Summer 2			Spring 1:	pulse rate
			Create a model of a working	Observe human teeth –	pattern seeking –
			joint.	shapes related to different	exploring which groups
				functions.	of people may have
					higher or lower resting
			Investigate patterns	Explore eating different	pulse rates
			asking questions such	types of food to identify	observation over time -
			as:	which teeth are being used	
			Can people with longer	for cutting, tearing and	how long does it take my pulse rate to return to
			legs run faster?	grinding (chewing).	my resting pulse rate
			Can people with bigger	gg (eeg).	(recovery rate)
			hands catch a ball	Identify teeth of different	(recovery rate)
			better?	_	pattern seeking –
				animals.	exploring recovery rate
			Compare, contrast and	Classify animals as	for different groups of
			classify skeletons of	herbivores, carnivores or	people.
			different animals.	omnivores according to the	people.
				type of teeth they have.	To be able to record
				type of teeth they have.	To be able to record,
				type of teeth they have.	report and present
				type of teeth they have.	_
				type of teeth they have.	report and present
				type of teeth they have.	report and present
				type of teeth they have.	report and present
				type of teeth they have.	report and present
				type of teeth they have.	report and present
					report and present results appropriately
	Identify and name a	Describe the basic needs of		Children understand that	report and present results appropriately  Children can discuss the
	variety of common	animals, including humans,		Children understand that living things can be	report and present results appropriately  Children can discuss the impact of drugs and
	variety of common animals that are	animals, including humans, for survival (water, food and		Children understand that living things can be classified as producers,	report and present results appropriately  Children can discuss the impact of drugs and lifestyle on the way
	variety of common animals that are carnivores, herbivores	animals, including humans,		Children understand that living things can be classified as producers, predators and prey	report and present results appropriately  Children can discuss the impact of drugs and
	variety of common animals that are	animals, including humans, for survival (water, food and		Children understand that living things can be classified as producers, predators and prey according to their place	Children can discuss the impact of drugs and lifestyle on the way bodies function.
	variety of common animals that are carnivores, herbivores and omnivores	animals, including humans, for survival (water, food and		Children understand that living things can be classified as producers, predators and prey	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative
	variety of common animals that are carnivores, herbivores and omnivores  Group animals	animals, including humans, for survival (water, food and air)		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g.,
	variety of common animals that are carnivores, herbivores and omnivores	animals, including humans, for survival (water, food and air)  Spring 1		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1:	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g.,
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify producers, predators	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g., in a health leaflet
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify producers, predators and prey in a food chain	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g., in a health leaflet describing impact of
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify producers, predators	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g., in a health leaflet describing impact of drugs and lifestyle on the
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify producers, predators and prey in a food chain	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g., in a health leaflet describing impact of
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify producers, predators and prey in a food chain	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g., in a health leaflet describing impact of drugs and lifestyle on the
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify producers, predators and prey in a food chain	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g., in a health leaflet describing impact of drugs and lifestyle on the
	variety of common animals that are carnivores, herbivores and omnivores  Group animals according to what they eat	animals, including humans, for survival (water, food and air)  Spring 1 Spring 2		Children understand that living things can be classified as producers, predators and prey according to their place in the food chain.  Spring 1: Research using secondary sources to identify animals in a habitat and find out what they eat.  Use arrows to identify producers, predators and prey in a food chain	Children can discuss the impact of drugs and lifestyle on the way bodies function.  Research the negative effects of drugs (e.g., tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.  Present information e.g., in a health leaflet describing impact of drugs and lifestyle on the body.

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	Knows and can talk about the different factors that support his/her overall health and wellbeing; regular physical activity  Knows and can talk about the different factors that support his/her overall health and wellbeing; healthy eating  Manage their own basic hygiene and personal needs, including dressing and going to the toilet, and understand the importance of healthy food choices (ELG)  Spring 1 — People that help us topic PSE sessions		Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene  Summer 2				
	Summer 1 – Body awareness - Naming parts of the body – protective behaviours						
Vocabulary	Diet, healthy, food, similar, different, carnivore, omnivore, herbivore, dinosaurs, fossils, homes  Healthy, happy, exercise, water, love, food groups  Families, love, parents, carers, mummies, daddies, brothers, sisters, home, house, flat, garden, stairs, neighbours, family, pets, grandparents, cousins  Head, shoulders, arms, hands, fingers, legs, feet, toes, stomach, elbow, knee  penis, testicles, vulva, vagina, anus (PSHE lessons)	Fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores, skeleton, skull, skin, head, neck, arms, elbows, arms, fingers, chest, legs, knees, feet and toes. Head, shoulders, arms, hands, fingers, legs, feet, toes, stomach, knee, legs, penis, testicles, vulva, vagina, anus, (within PSHE)  Sight, touch, taste, smell, and hearing.  Common, animals, dinosaurs, elbows, fish, herbivores – legs, amphibians plants, cow, hamster, guinea pig, tortoise, knees, reptiles, triceratops, face, birds, mammals, meat and plants, eyes, pets, badger, human, bear, chickens, hair, carnivores - head mouth, meat, cat, dog, lion, tiger, fox, shark, neck, teeth, killer, whale, eagle, hawk, snake,	Offspring, humans, needs, water, oxygen, survival, exercise, food groups, carbohydrates, protein, fat. Exercise, hygiene, weather, climate change, pollution, global warming, greenhouse gases, emissions,  Head, shoulders, arms, hands, fingers, legs, feet, toes, stomach, penis, testicles, vulva, vagina, anus, (within PSHE) elbow, knee  survival - spawn-tadpole-frog, grow, water, food, air lamb-sheep, adults, exercise, hygiene, baby-toddler-child-teenager-adult nutrition, egg-chick-chicken, reproduce, egg-caterpillar-pupa-butterfly	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, teeth, muscles, joints, support, protect, move, skull, ribs, spine	Digestive system, digestion, mouth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	puberty, the vocabulary to describe sexual characteristics in line with the school's RSE policy, life cycle, foetus, baby, child, adolescent, adult, reproduce, sexual, sperm, fertilises, egg, live young (Y5 -Living things and their habitats)	heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, cycle, circulatory system, diet, drugs, lifestyle

By the end of Reception, children:  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG)		<ul> <li>explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> <li>identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li> </ul>		By the end of Year 4, children:  Recognise that living things can be grouped in a variety of ways.  Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.  Recognise that environments can change and that this can sometimes pose dangers to living things.		By the end of Year 6, children:     Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.     Describe the life process of reproduction in some plants and animals.      Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.      Give reasons for classifying plants and animals based on specific characteristics.	
Use all their senses in hands- on exploration of natural materials.  Explore collections of (natural) materials with similar and/or different properties.  Begin to understand the need to respect and care for the natural environment and all living things.  Understand the key features of the life cycle of a plant and an animal.	Explore the natural world around them.  Describe what they see, hear and feel whilst outside.  Recognise some environments that are different to the one in which they live  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG)  Autumn 1 – Light and Dark Experiment Outdoor learning – Spider Hunt  Autumn 2 –  Bears – similarities and differences Panda research Posting letters observations of environment on walk  Summer 1 – Dinosaurs, habitats and eating habits  Summer 2 – Ocean pollution, animals, habitats	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Autumn 2 – Science Day	explore and compare the differences between things that are living, dead, and things that have never been alive  Spring 1  identify and name a variety of plants and animals in their habitats, including microhabitats  identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other — food chains  Spring 1  Spring 2		Children can name living things living in a range of habitats, giving the key features that helped them to identify them.  Children can give examples of how an environment may change both naturally and due to human impact.  Spring 2 Park trip or exploration of school grounds with pooters and magnifying glasses to observe and classify minibeasts and other species found.  Compare and contrast the living things observed.  Exploration of the school grounds and local environment to gauge human impact e.g., litter, tree planting	Children learn that as part of their life cycle, plants and animals reproduce.  Most animals reproduce sexually. This involves two parents where the sperm from the male fertilises the female egg.  Compare the gestation times for mammals and look for patterns e.g., in relation to size of animal or length of dependency after birth.  Can draw the life cycle of a range of animals identifying similarities and differences between the life cycles	Know that living things can be formally grouped according to characteristics.  Plants and animals are two main groups but there are other livings things that do not fit into these groups e.g., microorganisms such as bacteria and yeast, and toadstools and mushrooms.  Plants can make their own food whereas animals cannot.  Use secondary sources to learn about the formal classification system devised by Carl Linnaeus and why it is important.  Classify plants and animals, presenting this in a range of ways e.g., Venn diagrams, Carroll diagrams and keys.
		the structure of a variety of common animals (fish,			classification keys to identify unknown plants and animals.	humans, have offspring which grow into adults. In humans and some	can be divided into two main groups: those that have

amphibians, reptiles, birds and mammals, including pets) Autumn 2 – Science Day Summer 2  Describe the lifecycle of a butterfly – real caterpillar link – Summer 2		Classify living things found in different habitats based on their features.  Create a simple identification key based on observable features of liquorish allsorts.  Use secondary sources to find out about how environments may naturally change.  Use secondary sources to find out about human impact, both positive and negative, on environments.	animals, these offspring will be born live, such as babies or kittens, and then grow into adults.  In other animals, such as chickens or snakes, there may be eggs laid that hatch to young which then grow to adults.  Some young undergo a further change before becoming adults e.g., caterpillars to butterflies. This is called a metamorphosis.  Use secondary sources and, where possible, first-hand observations (butterflies) to find out about the life cycle of a range of animals.	backbones (vertebrates); and those that do not (invertebrates).  Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics.  Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms.  Can give examples of animals in the five vertebrate groups and some of the invertebrate groups.
variety of common animals that are carnivores, herbivores and omnivores	describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food Spring 1	Can present their learning about changes to the environment in different ways e.g., campaign video, persuasive letter.  Spring 2 Create a fact file on PowerPoint.	Plants reproduce both sexually and asexually and bulbs, tubers, runners and plantlets are examples of asexual plant reproduction which involves only one parent.  Gardeners may force plants to reproduce asexually by taking cuttings.  Sexual reproduction occurs through pollination, usually involving wind or insects.  Can explain the difference between sexual and asexual reproduction and give examples of how plants reproduce in both ways.  Grow and observe plants that reproduce asexually e.g., strawberries, spider plants, potatoes.  Take cuttings from a range of plants e.g., African violet, mint	Describe how plants can be divided broadly into two main groups: flowering plants; and non-flowering plants.  Use information about the characteristics of an unknown animal or plant to assign it to a group.  Can give examples of flowering and non-flowering plants.  Look at observable characteristics of a common plant (e.g., daffodil) and suggest words to describe its appearance in detail- They could try and translate their descriptions into Latin using a translation website.

Vocabulary	Diet, habitat, animals, dinosaurs, cat, dog, mouse, panda, bear, fish, shark, environment, birds, bird feeder, good, homes, senses, fossils, hatch, chick,	Fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores, skeleton, skull, skin, head, neck, arms, elbows, arms, fingers, chest, legs, knees, feet and toes. Sight, touch, taste, smell, and hearing.	Predator, species, related producers, consumers, energy, sun, plant, animal, prey, habitat, desert, jungle, rainforest, polar regions, artic  living dead never alive habitats micro-habitats food food chain sun-grass-cow-human  alive healthy logs leaf litter stony path under bushes shelter seashore woodland  ocean rainforest conditions hot/warm/cold dry/damp/wet bright/shade/dark	photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (e.g. wind dispersal, animal dispersal),air, nutrients, minerals, soil, absorb, transport	Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	life cycle, reproduce, sexual, fertilise, asexual, plantlets, runners, tubers, cuttings, egg, live young, metamorphosis,	flowering, non- flowering, mosses, ferns, conifers, vertebrates, fish, amphibians, reptiles, birds, mammals, warm-blooded, cold- blooded, invertebrates, insects, spiders, snails, worms
						time and that fossils living things that inha ye  Recognise that living the same kind, but nor not identical to the  Identify how animals suit their environmen	things have changed over provide information about bited the Earth millions of ars ago.  things produce offspring of mally offspring vary and are
Evolution and Inheritance							Children recognise that 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.  Identify inherited and adaptive traits.  Understand that adaptations are random
							mutations.  Explain how human evolution has occurred and compare modern

			humans with those of the same genus and family.
			Children understand that plants and animals have characteristics that make them suited to their environment.
			If the environment changes rapidly, some species may not suit the environment and will die.
			If the environment changes slowly, animals and plants with variations that are best suited to this, survive in greater number to reproduce and pass their characteristics onto their young.
			Overtime, these inherited characteristics become dominant in a population.
			Children recognise that over a long period of time, these characteristics may be so different to how they were originally that a new species is created and that this is evolution.
			Explain the process of evolution.
			Give examples of how plants and animals are suited to an environment.
			Use models to demonstrate evolution e.g. 'Darwin's finches' bird beak activity.
			Give an example of how an animal has evolved over time e.g. penguin, peppered moth.
			Use secondary sources to find out about how the population of peppered moths changed during the industrial revolution.
			Children know that fossils give us evidence of what lived on Earth millions of years ago and provide

				evidence for the theory of evolution.  Compare the ideas of Charles Darwin and Alfred Wallace on evolution.  Examine fossil evidence of things that lived millions of years ago.  Explain and give examples of fossil evidence that can be used to support evolution.  Research the work of Mary Anning and how this provided evidence of evolution. (check not overlapping with year 3)
Vocabulary				Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils
Materials	By the end of Reception, children:  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG)  Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)	By the end of Year 2:  • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses  • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	<ul> <li>By the end of Year 4, children:</li> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> <li>Recognise that soils are made from rocks and organic matter.</li> <li>Compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</li> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	By the end of Year 6, children:  Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.  Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.  Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.  Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.  Demonstrate that dissolving, mixing and changes of state are reversible changes.  Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda
	Uses all his/her senses in hands-on exploration of natural materials  Use all their senses in hands-on exploration of natural materials.  Explore collections of materials with similar and/or different properties.  Recognises some environments that are different to the one in which he/she lives  Describe what they see, hea and feel whilst outside.  Explore the natural world around them, making observations and drawing	Distinguish between an object and the material from which it is made  Spring 1  Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses  Autumn 2	Children can name some types of rock and give physical features of each.  Autumn 1 Classify rocks in a range of ways, based on their appearance.  Devise a test to investigate the  Children can name properties of solids, liquids and gases  Autumn 1 Identify the behavior of particles in a solid, liquid and gas – create a live model to demonstrate this.  Classify materials	Children understand that materials have different uses depending on their properties and state (liquid, solid, gas).  Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets.  Investigate the properties of different materials in order to

	pictures (ELG)			hardness of a range of	according to whether	recommend materials for	
Talk about what they see, using a wide vocabulary  Talks about the differences between materials and changes he/she notices	Understand some important processes and changes in the natural world around them (ELG)  Autumn 1 – Gummy Bears Experiment Outdoor learning – Leaf parcels  Autumn 2 – Leaf bread – predicting and			rocks.  Devise a test to investigate how much water different rocks absorb.	they are solids, liquids and gases.  Explore making gases visible.  Experiment to show that gas is matter and has a weight (fizzy drinks).	particular functions depending on these properties e.g., test waterproofness and thermal insulation to identify a suitable fabric for a coat.  Can create a chart or table grouping/comparing everyday materials by different properties	
	describing textures Outdoor learning – Porridge, change of state. More or less water. Porridge Making – Heat, senses.  Spring 1 – Outdoor learning – Ice melting observations, playdough making – observing changing of state Investigating mouldy bread – change of states Cooking gingerbread men – changes of state  Summer 2 – Water cycle observations – rain, condensations	Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Spring 1 Science Day – Summer 2		Children can explain how a fossil is formed  Autumn 1 Use secondary sources to research how fossils are formed.  Create mold fossils using plasticine.  Create a sedimentary sandwich to represent how sedimentary rocks are formed.  Research the work of Mary Anning	Children understand that melting is a state change from solid to liquid. Freezing is a state change from liquid to solid.  Autumn 1 Investigate the melting point of different materials of ice, butter and chocolate.	Children learn that some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment.  Investigate rates of dissolving by carrying out comparative and fair tests.  Can explain what dissolving means, giving examples.  Can group solids based on their observations when mixing them with water.	
	Uses of water	Describe the simple physical properties of a variety of everyday materials – simple experiment to test suitability of materials Spring 2 Science Day – Summer 2	Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching  Autumn 2	Can explain that soils are made from rocks and also contain living/dead matter  Autumn 1 Observe soils closely using magnifying glasses.  Classify soils in a range of ways based on their appearance.  Devise a test to investigate the water retention of soilswhich soil would be best for 'Ug' to build a house on?  Observe how soil can be separated through sedimentation	Children understand that some materials change state when they are heated or cooled.  Autumn 1 Set up investigations to explore changing the rate of evaporation e.g., washing, puddles, handprints on paper towels, liquids in containers.	Describe how mixtures can be separated by filtering, sieving and evaporation.  Can use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving.  Separate mixtures by sieving, filtering and evaporation, choosing the most suitable method and equipment for each mixture.	
		Compare and group together a variety of everyday materials on the basis of their simple		Scamenation	Children can identify and describe the different stages of the water cycle.	Understand that some changes to materials such as dissolving, mixing and	

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Glass, metal, plastic, wood, brick, rock, paper, fabrics, bendy, squashy, shmy, smooth, rough  Vocabulary  Weather and soft, bendy, squashy, shmy, smooth, rough  Wocabulary  Glass, metal, plastic, wood, brick, rock, paper, fabrics, else, froit, folk, pare, fabrics, else, froit, folk, pare, fabrics, else, froit, folk, paper, fabrics, else, froit, froi	Glass, metal, plastic, wood, brick, rock, paper, fabrics, elasis, finity, cote, paper, fabrics, elasis, finity, ards, paper, fabrics, elasis, finity, ards, first, rock, paper, fabrics, elasis, finity, ards, first, fi							Benerito (wrinkle free	
Glass, metal, plastic, wood, brick, rock, paper, fabrics, brick, rock, paper, fabrics, elastic, full, hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy/not absorbent; opaque/transparent.  Vocabulary  Wocabulary  By the end of Reception, children:  Understand some important processes and changes in the hards world around hem, including the seasons and changing states of matter (ELG)  By the end of Reception, children:  Understand some important processes and changes in the hards world around them, including the seasons and changing states of matter (ELG)  By the end of Reception, children:  Understand some important processes and changes in the hards world around them, including the seasons and changing states of matter (ELG)  Forces  Glass, metal, plastic, wood, brick, rock, paper, fabrics, plastic, gist, lock, plast, plastic, sund the price plant, plastic, wood, price, plastic, p	Glass, metal, plastic, wood, brick, rock, paper, fabrics, Hard, soft, bendy, squashy, shiny, smooth, rough  Glass, metal, plastic, wood, match, cock, paper, fabrics, edistic, foli, hard/soft; stretchy/stiff, shiny/dull; rough/smooth; bendy/not bendy/not waterproof, absorbent/not absorbent, paper, cardboarr, ock, fall, soft, exture, permeable, soil, fiscal, marble, chalk, granite, sandstone, state, soil, peat, sandsylve, soil may be condensation, precipitation, granite, sandstone, state, soil, peat, sandy/chalk/day soil  By the end of Reception, children:  **Porces**  **By the end of Reception, children:  **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  **Porces**  **Forces**  Glass, metal, plastic, wood, matched, plastic, paber, crachboarr, once, fall-state, plastic, wood, matched, plastic, soil, peat, sands//chalk/day soil  **Soild, liquid, gas, sate, change, melting, point, soiliding point, exporation, condensation, precipitation, granite, sandstone, slate, soil, peat, sandstone, slate, soil, peat, sandstone, slate, soil, peat, sandsy/chalk/day soil  **Soil peable, condensation, precipitation, granite, sandstone, slate, soil, peat, sandsy/chalk/day soil  **By the end of Reception, children:  **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  **Porce State of the sast of wetter structured to a stream of the sast of wetter structed to a structure of granity and attract some materials and not other.  **Compare and group together a variety of everyday materials on the basis of whether they are attracted to a structured to a structured to a structure of granity and attract some materials and not other.  **Compare and group together a variety of everyday materials on the basis of whether they are attracted to a str	ļ,							<u>                                       </u>
brick, rock, paper, fabrics, elasts, brick, rock, paper, fabrics, elastic, foil, hard/soft, bendy, squashy, shiny, smooth, rough  Hard, soft, bendy, squashy, shiny, smooth, rough  Wocabulary  Wocabulary  By the end of Reception, children:  Understand some important processes and changes in the neartant word around them, including the seasons and changing states of matter (ELS)  By the end of Reception, children:  Understand word around them, including the seasons and changing states of matter (ELS)  Forces  By the end of Reception, children:  Once the season of the seas	brick, rock, paper, fabrics, sords, foll, sords, paper, fabrics, sords, fabrics, sords, fabrics, sords, fabrics, permable, gond, fossil, marble, chalk, granite, sandstone, slate, soil, part, sandstone, slate, soil, part		Glass, metal, plastic, wood, brick, rock, paper, fabrics,	Glass, metal, plastic, wood,	Materials, wood, metal,	Rock, stone, pebble,	Solid, liquid, gas, state,	thermal	Not covered
Hard, soft, bendy, squashy, shiny, smooth, rough   elastic, foll, hard/soft; strict-(hyliff); shiny/dull; rough/smooth; bendy/not bendy, waterproof) absorbent/, oabsorbent/ obsorbent; opeque/transparent.   opeque/trans	Hard, soft, bendy, squashy, shiny, smooth, rough    Particly   Strick   Str							insulator/conductor,	discretely.
stretchy/stiff, shim/dull; rough/smorth, bendy/not bendy, waterproof, absorbent/not absorbent, material of south absorbent, magnetism, strength, transparent.  Vocabulary  Material  Synthe end of Reception, children:  Vocabulary  Synthe end of Reception, condensation, condensation, condensation, condensation, condensation, condensation, condensation, condensation, condensation, perceptiation, grante, sandstone, slate, soil, perceptiation, sprate, sandstone, slate, soil, perceptiation, grante, sandstone, slate, soil, perceptiation, grante, sandstone, slate, soil, perceptiation, perceptiation, grante, sandstone, slate, soil, perceptiation, grante, sandstone, slate, soil, perceptiane, avaeter cycle, particles  Synthematical  Syn	stretchylstiff; shiny/dult; rough/smooth; bendy/not bendy; waterproof/not waterproof/not waterproof/not waterproof/not waterproof, absorbent; opaque/transparent.  Vocabulary    Vocabulary		Hard, soft, bendy, squashy, shiny, smooth, rough						,
bending, twisting, stretching importance bending, twisting, stretching aborbency, the proportion of waterproof, absorbency, the proof in waterproof in wa	rough/smooth; bendy/not bendy/not bendy/materproof/not waterproof/ absorbent/not absorbent/not absorbent in opaque/transparent.  Vocabulary  Vocabulary  Pocabulary  Pocabular								
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waterproof, absorbent/not absorbent opaque/transparent.  Vocabulary  Vocabulary  Waterproof, absorbent opaque/transparent.  By the end of Reception, children:  • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Forces  By the end of Reception, children:  • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Forces  By the end of Reception, children:  • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Forces  By the end of Year 4, children:  • Compare how things move on different surfaces.  • Notice that some forces need contact between two objects, but magnetic forces can act at a dislance.  • Observe how magnets attract or repel each other and attract some materials and not others.  • Observe how magnets attract or repel each other and attract some materials and not others.  • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.  • Recognise that some mechanisms, including levers, pulleys and gears, allow as smaller force to	waterproof, absorbenty, absorbenty, insulating ability, insulating, insulating ability, insulating, insulating ability, insulating ability. Insulating ability, insulating ability, insulating ability, insulating ability. Insulating ability, insulating ability. Insulating ability, insulating ability. Insulating ability ability ability ability. Insulating ability ability ability. Insulating ability ability ability ability. Insulating ability ability ability. Insulating ability. Insulating ability. Insulating ability ability				, , , , , , , , , , , , , , , , , , , ,			sieve, reversible/non-	
Available of the natural world around them, including the seasons and changing states of matter (ELG)  Forces    Available of the natural world around them, including the seasons and changing states of matter (ELG)   Available of the natural world around them, including the seasons and changing states of matter (ELG)   Available of the natural world around them, including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural water of the force of gravity acting between the farth and the falling object.   Available of the natural world around them including the seasons and changing states of matter (ELG)   Available of the natural water of the force of gravity acting between the farth and the falling object.   Available of the natural water of the force of gravity acting between the farth and the falling object.   Available of the natural water of the force of gravity acting betwe	absorbent; opaque/transparent. Insulating ability, magnetism, strength, transparency, water resistance Interest and policy of the particles Interest and policy of the particles Interest and the falling objects. By the end of Reception, children:  By the end of Reception, children:  Outdoorstand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Forces  By the end of Reception, children:  Outdoorstand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Forces  By the end of Year 4, children:  Outgrass how things move on different surfaces.  Notice that some forces seed contact between two objects, but magnetic forces can act at a distance.  Observe how magnetis attract or repel each ot others and attract some materials and not others.  Compare and group together a variety of everyday materials on the basis of whether they are attracted to a surfaces.  Recognise that some mechanisms, includes.  Recognise that some mechanisms, includes.			1 · · · · · · · · · · · · · · · · · · ·	absorbency, flexibility.	fossil, marble, chalk,	precipitation,	reversible change,	
Vocabulary    Vocabulary	Vocabulary    Vocabulary			1		granite, sandstone,	temperature, water	burning, rusting, new	
Transparency, water resistance  metal - coins, cans, cars, table legs wood - matches, floors, telegraph poles, spoons John Dunlop - rubber Charles Macintosh - waterproof  By the end of Year 4, children:  • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Forces  By the end of Year 4, children:  • Compare how things move on different surfaces.  • Notice that some forces need contact between two objects, but magnetic forces can act at a distance.  • Observe how magnets attract or repel each other and attract some materials and not others.  • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some metaliss.  • Recognise that some mechanism, including levers, pulleys and gears, allow a smaller force to	Vocabulary    Transparency, water resistance   Sandy/chalk/clay soil   Sandy/chalk/clay soil					slate, soil, peat,	cycle, particles		
Forces    By the end of Reception, children:   Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)   Forces   End of Reception	Wocabulary    Metal - coins, cans, cars, table legs wood - matches, floors, telegraph poles, spoons   John Dunlop - rubber   Charles Macintosh - waterproof			opaque/transparent.			' ' '		
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magnet, and identify some magnetic materials. levers, pulleys and gears, allow a smaller force to									
								_	_
<ul> <li>Describe magnets as having two poles.</li> <li>have a greater effect.</li> </ul>							magnet, and identify some magnetic materials.		
								have a g	reater effect.
Predict whether two magnets will attract or repel each	Predict whether two magnets will attract or repel each					Predict whether two ma	gnets will attract or repel each		
other, depending on which poles are facing.	other, depending on which poles are facing.					other, depending o	on which poles are facing.		

						_
	Talk about what they see,	Explore the natural world		Children can give	A force causes an object to	
	using a wide vocabulary	around them, making		examples of forces in	start moving, stop moving,	
	asing a wide vocabulary	observations and drawing		everyday life. They will	speed up, slow down or	
		_		learn that a force is a	change direction.	
	Explores and talks about	pictures (ELG)				
	different forces he/she can			push or a pull.	Gravity is a force that acts at a	
	feel –	Spring 1 –			distance. Everything is pulled	
	-how the water pushes up	Pushes and pulls		Spring 1	to the Earth by gravity. This	
				Identify push and pull	causes unsupported objects to	
	when they try to push a	investigation		forces in their world	fall.	
	plastic boat under it				iaii.	
	-how they can stretch			around them e.g., a		
	elastic, snap a twig, but			swing, bicycle, drawing	Research how the work	
	cannot bend a metal rod			etc.	of scientists such as	
					Galileo Galilei and Isaac	
	-magnetic attraction and				Newton helped to	
	repulsion				· · · · · · · · · · · · · · · · · · ·	
					develop the theory of	
_					gravity.	
				-Children can give	Air resistance, water	
				examples of objects	resistance and friction are	
				moving differently on	contact forces that act	
				different surfaces.	between moving surfaces.	
				unierent surfaces.	between moving surfaces.	
					_, , , , , , ,	
			l	-When an object moves	The object may be moving	
				on a surface, the	through the air or water, or	
				texture of the surface	the air and water may be	
				and the object affect	moving over a stationary	
				how it moves. It may	object.	
					object.	
				help the object to move		
				better or it may hinder		
				its movement e.g. ice		
				skater compared to	Investigate the effects of	
				walking on ice in	water resistance in a	
				normal shoes.	range of contexts e.g.,	
					dropping shapes through	
				Spring 1:	water and pulling	
				With guidance, carry	shapes, such as boats,	
				out investigations to	along the surface of	
				explore how objects	water.	
				move on different		
				surfaces e.g. spinning	Can explain the results of	
				coins, rolling balls/cars	their investigations in	
				down ramps, soles of	terms of the force,	
				shoes etc.	showing a good	
				silves etc.		
					understanding that as	
			l	They can use their	the object tries to move	
				results to make	through the water or air	
				predictions for further	or across the surface the	
				tests e.g., friction of a	particles in the water, air	
				shoe on different	or on the surface slow it	
				surfaces (Newton	down	
				meters)		
				-Children will discover	Recognise that a mechanism is	
				that the strongest parts	a device that allows a small	
				of a magnet are the	force to be increased to a	
				poles.	larger force.	
				-Magnets have two	U	
				poles – a north pole and	Understand that the small	
				a south pole. If two like	force moves a long distance	
				poles, e.g. two north	and the resulting large force	
				poles, are brought	moves a small distance, e.g. a	
				together they will push	crowbar or bottle top	
				away from each other –	remover.	
				repel. If two unlike	. cillovei.	
					Con domonaturate de substitu	
				poles, e.g. a north and	Can demonstrate clearly the	
				south, are brought	effects of using levers, pulleys	
				together they will pull	and gears.	
					<u> </u>	

		1	Leader W. C.	<del></del>
			together – attract.  Spring 1 Children can name a range of types of magnets and show how the poles attract and repel. Children can draw diagrams using arrows to show the attraction and repulsion between the poles of magnets.	
			-Children will investigate how a magnet attracts magnetic materialIron and nickel and other materials containing these, e.g. stainless steel, are magnetic.  Spring 1 Use classification evidence to identify that some metals, but	Pulleys, levers and gears are all mechanisms, also known as simple machines.  Explore how levers, pulleys and gears work.  Make a product that involves a lever, pulley or gear
			not all, are magnetic	
Vocabulary	Push, pull, force, movement, change, stretch		force, push, pull, twist, contact force, non- contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole	force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears
Light			By the end of Year 4, children:  Recognise that they need light in order to see things, and that dark is the absence of light.  Notice that light is reflected from surfaces.  Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.  Recognise that shadows are formed when the light from a light source is blocked by an opaque object.  Find patterns in the way that the size of shadows change.	By the end of Year 6, children:  Recognise that light appears to travel in straight lines.  Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.  Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.  Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
			Children know that we see objects because our eyes can sense light.  Dark is the absence of light. We cannot see anything in complete darkness.  Experience complete darkness (dark tent) and predict what they will be able to see/can't see.	Light appears to travel in straight lines, and we see objects when light from them goes into our eyes.  The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen.

		Understand that in order to		
		see, light needs to reflect		Investigate whether or
		from the surface of an		not light can be easily
		object and enter our eye.		bent or curved e.g., using
		,		torches and pieces of
		Draw diagrams to show		thick card with holes
		understanding that light		punched into the centre
		travels in a straight line.		or bent and straight hose
				pipe.
				Can describe, with
				diagrams or models, how
				light travels in straight
				lines either from a direct
				light source or reflected
				from other objects into
				our eyes
		Recognise that some		Explore how objects that
		objects, for example, the		block light (are not fully
		sun, light bulbs and candles		transparent) will cause
		are sources of light.		shadows.
				Understand that because
		Know that objects are easier		light travels in straight
		to see when there is more		lines the shape of the
		light.		shadow will be the same
				as the outline shape of
		Identify light sources from		the object.
		non-light sources (e.g., the		•
		moon which reflects life).		Explore the uses of the
		Create a table to show		behaviour of light,
		findings.		reflection and shadows,
		illiuligs.		such as in periscope
				design, rear view mirrors
				and shadow puppets.
				Can predict and explain,
				with diagrams or models
				as appropriate, how the
				shape of shadows can be
				varied
		Some surfaces reflect light.		
		_		
		Light is reflected from most		
		surfaces but in different		
		amounts.		
		Objects that are good		
		Objects that are good		
		reflectors are easier to see		
		than poor reflectors when		
		there is less light.		
		Compare different materials		
		e.g., card, aluminum foil,		
		plastic bags, carpet,		
		corrugated card, paper.		
		Predict which will be the		
		best at reflecting light		
		before testing.		
		actore testing.		
		Docian a roflective back		
		Design a reflective back pack or jacket.		
	Ī	Dack or lacket.	į .	
		pack of Jackson		<b>I</b>
		paon or jacinos.		

	 T			Г	T
		Maranakhar khar Baka faranakhar			
		Know that the light from the			
		sun can damage 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.			
		Crete a poster, power point,			
		information leaflet to			
		highlight the dangers of			
		sunlight on the eyes.			
		Design a hat or sunglasses			
		to protect the eyes-			
		researching UV protection			
		levels using secondary			
		 sources.			
		 Shadows 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.			
		Surface.			
		Explore how shadows vary			
		as the distance between a			
		light source and an object			
		or surface is changed.			
		Create a shadow puppet			
		theatre, choosing suitable			
		materials to create the			
		puppets.			
		Haramadala (Lana Barras)			
		Use models (Lego figures)			
		and torches to demonstrate			
		how shadows change shape			
		and size depending on			
		where the position of the			
		light source.			
		light, light source, dark,			light, light source, dark,
		absence of light, surface,			absence of light, surface,
		shadow, reflect, mirror, Sun,			shadow, reflect, mirror,
		sunlight, dangerous,			Sun, sunlight, dangerous
Vocabulary		opaque, translucent,			straight lines, light rays,
vocabalal y		transparent.			refraction, absorb, prism,
					opaque, translucent,
					transparent, visible
					spectrum.
		 <u> </u>			
		By the end of Y	ear 4, children:	By the end of Yea	r 6, children:
					ss of a lamp or the volume
Electricity					mber and voltage of cells
				used in the circuit.	Ü
		identifying and namin		used in the circuit.  • Compare and give reas	ons for variations in how

	<ul> <li>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</li> <li>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</li> <li>Recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>	components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.  • Use recognised symbols when representing a simple circuit in a diagram	
	-Children recognise that many household devices and appliances run on electricity.  - Some plug in to the mains and others run on batteries.  -identify possible hazards around electricity and create a safety poster/leaflet outlining good practice.  Summer term	- Children will learn that adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound they will see that if you use a battery with a higher voltage, the same thing happens However, they will explore and find that adding more bulbs to a circuit will make each bulb less bright. Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter  Spring term: Plan and conduct an investigation.  Make electric circuits to demonstrate how variation in the working of particular components can be changed by increasing or decreasing the number of cells or using cells of different voltages  Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line	
	-An electrical circuit consists of a cell or battery connected to a component using wires. Children can explain the terms 'battery' and 'cell'.  -If there is a break in the circuit, a loose connection or a short circuit, the component will not work.  -A switch can be added to the	graphs.  -Children will make circuits to solve particular problems - Carry out fair tests exploring changes in circuits Make circuits that can be controlled as part of a DT project.  Spring term: Can draw circuit diagrams of a range of	

		_		T	
			circuit to turn the component on and off		simple series circuits using recognised symbols
			Summer term:		Create a game using
			-name the components in a		knowledge of circuits.
			circuitConstruct a range of circuits.		Explore the use of morse
			-Show understanding of the		code
			structures of circuits using		
			drawings which show how the components are		
			connected		
			-Control a circuit using a switch and explain how the		
			switch works.		
			-Explore how to connect a		
			range of different switches and investigate how they		
			function in different ways		
			-Some metals are good		
			conductors so they can be used as wires in a circuit		
			Summer term:		
			-Identify and name metals that can conduct electricity.		
			-Explore which materials can		
			be used instead of wires to make a circuit Classify the		
			materials that were		
			suitable/not suitable for		
			wires. -Children can decide (some		
			independently, some with		
			guidance) how to set up a		
			simple practical enquiry, make predictions and draw		
			simple conclusions from their		
			results		
			<ul> <li>-Non-metallic solids are insulators except for graphite</li> </ul>		
			(pencil lead).		
			Maken if yet asset 1		
			-Water, if not completely pure, also conducts		
			electricity.		
			Summer term:		
			-Children can explain what		
			electrical conductors and		
			insulators are and give several examples of these.		
			- Children can make		
			predictions, use a range of (electrical) equipment and		
			draw simple conclusions		
			from their results		
Vocabulary			Electricity, electrical		Circuit, complete circuit,
•			appliance/device, mains,		circuit diagram, circuit

Earth and Space			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	planets, relative to the Describe the movement the Sur Describe the Sur approximately  Use the idea of the Ear	ent of the Earth, and other te Sun in the solar system. ent of the Moon relative to e Earth. n, Earth and Moon as y spherical bodies.
				acros	ss the sky.
				Children learn that the Sun is a star at the is at the centre of our solar system.  There are 8 planets.  These travel around the Sun in fixed orbits.  Earth takes 365¼ days to complete its orbit around the Sun.  Make first-hand observations of how shadows caused by the Sun change through the day.  Make a sundial.  Consider the views of scientists in the past and evidence used to deduce shapes and movement of the Earth, Moon and planets before space travel.	
				on its axis every 24 hours.  As Earth rotates half faces the Sun (day) and half is facing away from the Sun (night).  As the Earth rotates, the Sun appears to move across the sky.	

							Can show using diagrams the rotation of the Earth and how this causes day and night.  Can explain what causes	
							day and night.  The Moon orbits the	
							Earth.	
							It takes about 28 days to complete its orbit.	
							The Sun, Earth and Moon are approximately spherical.	
							Can explain the movement of the Earth and Moon.	
							Can use the model to explain how the Earth moves in relation to the Sun and the Moon moves in relation to the Earth	
Vocabulary							Sun, Moon, Earth, planets (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, Solar System, rotate, star, orbit	
Plants	By the end of Reception, children:  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG)		By the end of Year 2:  observe and describe how seeds and bulbs grow into mature plants  find out and describe how plants need water, light and a suitable temperature to grow and stay healthy		By the end of Year 4, children:  Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; and flowers.  Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.  Investigate the way in which water is transported within plants.  Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.		By the end of Year 6, children:  •	
riants	-Use all their senses in hands-on exploration of natural materials.  -Talk about what they see, using a wide vocabulary  -Plants seeds and cares for growing plants  -Understands the key features of the life cycle of a plant and an animal	-Describe what they see, hear and feel whilst outside  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Know some similarities and differences between the natural world around them and contrasting environments, drawing on	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees  Summer 1 Science Day – Spring 1	Observe and describe how seeds and bulbs grow into mature plants  Spring 2	Observe how many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom.  Know that the roots absorb water and nutrients from the soil and anchor the plant in place. The stem transports water and nutrients/minerals around the plant and holds the leaves and			

-Begin to understand the	their experiences and what			flowers up in the air to		
need to respect and care for	has been read in class (ELG)			enhance		
the natural environment and	,			photosynthesis,		
all living things.	Autumn 1 –			pollination and seed		
an nying timigs.	Outdoor learning – Leaf			dispersal. The leaves		
	_			use sunlight and water		
	parcels			to produce the plant's		
	Harvest crops, plants,			food.		
	seasons			1000.		
				Summer 1		
	Autumn 2 –			Summer 1		
	Leaf bread – predicting and					
	describing textures			Can explain the		
	Rotting apple experiment			function of parts of a		
				flowering plant and		
	Spring 2 –			draw diagrams to show		
	Seed observations –			this.		
	planting seeds as a class					
				Investigate what		
	Life cycle of a seed			happens to plants		
	Outdoor learning – update			when they are put in		
	outdoor planters, compost			different conditions		
	Parts of a plant –			e.g., in darkness, in the		
	observational drawings			cold, deprived of		
				water, different types		
				of soil.		
				Predict and observe		
				what happens to cut		
				white carnations or		
				celery when put into		
				coloured water.		
		Identify and describe the	Describe how plants need	Know that some plants		
		basic structure of a variety	water, light and a suitable	produce flowers which		
		of common flowering plants,	temperature to grow and	enable the plant to		
		including trees	stay healthy, and describe	reproduce.		
		Summer 1	the impact of changing these			
			Spring 2	Pollen, which is		
		Science Day – Spring 1	5pg 2	produced by the male		
				part of the flower, is		
				transferred to the		
				female part of other		
				flowers (pollination).		
				This forms seeds,		
				sometimes contained in		
				berries or fruits which		
				are then dispersed in		
				different ways.		
				<b>,</b>		
				Different plants require		
				different conditions for		
				germination and		
				growth.		
				Бі <b>У</b> ФСІІ.		
				Can describe the life		
				cycle of flowering		
				plants, including		
				pollination, seed		
				formation, seed		
				dispersal, and		
				germination.		
				Observe flowers		
				carefully – dissect to		
				identify different parts.		

					Classify seeds in a range of ways including how they are dispersed.  Create and design a seed, discussing how it is dispersed and the species of flowering plant that it is from.			
Vocabulary	Seed, growth, water, sunlight, d flower, grow, plants, trees, grow world,		Wild plants, common, seeds, garden plants, petals, fruits, seed, bulb, tree, blossom, petal, evergreen, deciduous, daisy, dandelion, clover, buttercup, ivy, sunflower, rose, sweet pea Live, sun, breathe, water, grow, flower, leaf, root, stem, petal, sunlight, nutrients, trunk.  Garden, plants, branches, leaf, root, fruit, vegetables, plant - leaf, root, bulb, leaves, bud, flowers	Oxygen, live, sun, breathe, water, grow, flower, leaf, root, stem, petal, sunlight  Water, grow, light, healthy  Suitable, temperature, germination, reproduction	photosynthesis, pollen, insect/wind pollination, male, female, stigma, stamen, style, anther, filament, ovary, seed formation, seed dispersal (wind dispersal, animal dispersal), air, nutrients, minerals, soil, absorb, transport, xylem	See 'Living Things and Their Habitats'	See 'Living Things and Their Habitats'	See 'Living Things and Their Habitats'
	By the end of Reception, children:  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG)  Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)		By the end of Year 2:  • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies		KS1 ONLY		KS1 ONLY	
Seasonal Changes	sees, using a wide vocabulary	Describes what he/she can see, hear and feel whilst outside  Understand the effect of changing seasons on the natural world around them.  Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)  Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG)  Signs of the seasons	Observe changes across the four seasons  Observe and describe weather associated with the seasons and how day length varies.  Seasonal changes lesson planned in for every season. Record findings in book as they go.  Autumn 1  Autumn 2  Spring 2  Summer 1	Observe changes across the four seasons  Observe and describe weather associated with the seasons and how day length varies.  Spring 1				

	Autumn1- Autumn Autumn2 - Winter Spring2 - Spring Summer2 – Summer  Autumn 2 - Visit to lo park looking at seaso changes. Environmen	nal			
Vocabulary	Harvest, seasons, crops, farmer, Spring, Summer, Aut Winter, day, seasons, leaves, weather, trees,	umn, Seasons, winter, spring, summer, autumn, months, year, sunrise, sunset, , day, night, light, dark, day length, weather, daylight,  Rain, snow, sunlight, warm, cold, fog, sleet, hail, snow, rain wind,	Winter, spring, summer, autumn, months, year, sunrise, sunset, varies, day, night, light, dark, day length, weather, effects, temperature, equator		