

#### Beeston Primary School Science Progression Grid



Science at Beeston is about children developing a sense of enquiry and extending their knowledge and understanding of the world around them. It includes knowledge about animals and living things, materials, sound, light, magnets and forces, electricity, the solar system and so much more. We strive for our children to be curious and want to learn more about all aspects of the world and life. Science at Beeston is concerned with investigation and children using their investigations and knowledge to understand how the world is constructed. Throughout the school, the children will be developing scientific skills that will lead to their work as scientists, planning and undertaking scientific investigations.



Scientific Enquiry									
At EYFS:	At Key Stage One:	At Lower Key Stage Two:	At Upper Key Stage Two:						
Children know about similarities and	E1: ask simple questions and recognise that	E1: ask relevant questions and use different	E1: plan different types of scientific						
differences in relation to places, objects,	they can be answered in different ways	types of scientific enquiries to answer them	enquiries to answer questions, including						
materials and living things	E2: observe closely, using simple equipment	E2: set up simple practical enquiries,	recognising and controlling variables where						
Children talk about the features of their	E3: perform simple tests	comparative and fair tests	necessary						
own immediate environment and how	E4: identify and classify	E3: make systematic and careful	E2: take measurements, using a range of						
environments might vary from one another	E5: use their observations and ideas to	observations and, where appropriate, take	scientific equipment, with increasing						
Children describe shapes, spaces, and	suggest answers to questions	accurate measurements using standard	accuracy and precision, taking repeat						
<mark>measures</mark>	E6: gather and record data to help in	units, using a range of equipment, including	readings when appropriate						
	answering questions	thermometers and data loggers	E3: record data and results of increasing						
		E4: gather, record, classify and present data	complexity using scientific diagrams and						
		in a variety of ways to help in answering	labels, classification keys, tables, scatter						
		questions	graphs, bar and line graphs						
		E5: record findings using simple scientific	E4: using test results to make predictions to						
		language, drawings, labelled diagrams, keys,	set up further comparative and fair tests						
		bar charts, and tables	E5: report and present findings from						
		E6: report on findings from enquiries,	enquiries, including conclusions, causal						
		including oral and written explanations,	relationships and explanations of and						
		displays or presentations of results and	degree of trust in results, in oral and written						
		conclusions	forms such as displays and other						
		E7: use results to draw simple conclusions,	presentations						
		make predictions for new values, suggest	E6: identify scientific evidence that has been						
		improvements and raise further questions	used to support or refute ideas or						
		E8: identify differences, similarities or	arguments						
		changes related to simple scientific ideas							
		and processes							
		E9: use straightforward scientific evidence							
		to answer questions or to support their							
	Deline e								
	Being a	Scientist	-						
At EYFS:	At Key Stage One:	At Lower Key Stage Two:	At Upper Key Stage Two:						
Children make observations of animals and	B1: Enable pupils to experience and observe	B1: Pupils in years 3 and 4 should be given a	B1: Pupils in years 5 and 6 should use their						
plants and explain why some things occur,	phenomena, looking more closely at the	range of scientific experiences to enable	science experiences to: explore ideas and						
and talk about changes	natural and humanly-constructed world	them to raise their own questions about the	raise different kinds of questions; select and						
Children use what they have learnt about	around them.	world around them.	plan the most appropriate type of scientific						
media and materials in original ways,	B2: They should be encouraged to be	B2: They should start to make their own	enquiry to use to answer scientific						
thinking about uses and purposes	curious and ask questions about what they	decisions about the most appropriate type	questions; recognise when and how to set						
	notice.	of scientific enquiry they might use to	up comparative and fair tests and explain						



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	B3: They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. B4: They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.	answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. B3: They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them B4: They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. B5: They should learn how to use new equipment, such as data loggers, appropriately. B6: They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. B7: With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw	<ul> <li>which variables need to be controlled and why.</li> <li>B2: They should use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</li> <li>B3: They should make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; choose the most appropriate equipment to make measurements and explain how to use it accurately.</li> <li>B4: They should decide how to record data from a choice of familiar approaches; look for different causal relationships in their data and identify evidence that refutes or supports their ideas.</li> <li>B5: They should use their results to identify when further tests and observations might be needed; recognise which secondary</li> </ul>
	have found out and communicate their	B5: They should learn how to use new	choose the most appropriate equipment to
	ideas to a range of audiences in a variety of	equipment, such as data loggers,	make measurements and explain how to
	ways.	appropriately.	use it accurately.
		B6: They should collect data from their own	B4: They should decide how to record data
		observations and measurements, using	from a choice of familiar approaches; look
		notes, simple tables and standard units, and	for different causal relationships in their
		help to make decisions about how to record	data and identify evidence that refutes or
		and analyse this data.	supports their ideas.
		B7: With help, pupils should look for	B5: They should use their results to identify
		changes, patterns, similarities and	when further tests and observations might
		differences in their data in order to draw	be needed; recognise which secondary
		Simple conclusions and answer questions.	sources will be most useful to research their
		duestions arising from the data making	fact
		predictions for new values within or beyond	B6: They should use relevant scientific
		the data they have collected and finding	language and illustrations to discuss.
		ways of improving what they have already	communicate and justify their scientific
		done.	ideas and should talk about how scientific
		B9: They should also recognise when and	ideas have developed over time.
		how secondary sources	
		might help them to answer questions that	
		cannot be answered through practical	
		investigations.	
		B10: Pupils should use relevant scientific	
		language to discuss their ideas and	
		communicate their findings in ways that are	
		appropriate for different audiences.	



EYFS	Characteristics of effect learning	Early Learning Goals		
Enquiry Skills	Show curiosity about objects, events and people Questions why things happen Engage in open-ended activity Take a risk, engage in new experiences and learn by trial and error Find ways to solve problems / find new ways to do things / test their ideas Develop ideas of grouping, sequences, cause and effect Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world Use senses to explore the world around them Make links and notice patterns in their experiences Create simple representations of events, people and objects Build up vocabulary that reflects the breadth of their experience	Choose the resources they need for their chosen activities Handle equipment and tools effectively Answer how and why questions about their experiences Make observations Develop their own narratives and explanations by connecting ideas or events Explain why some things occur and talk about changes		
Understanding the world	The Natural World: Explore the natural world around them, making observations Know some similarities and differences between the natural w their experiences and what has been read in class; Understand some important processes and changes in the nat states of matter.	m, making observations and drawing pictures of animals and plants; es between the natural world around them and contrasting environments, drawing on read in class; es and changes in the natural world around them, including the seasons and changing		



Strand	/ Topic area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
cientifically	Questionin g and Predicting	Ask simple questions	Use observations and ideas to suggest answers to questions	Ask relevant questions Start to make predictions	Make sensible predictions Suggest possible further questions Use straightforward scientific evidence to answer questions and support their findings	Use test results to make appropriate, linked predictions and ask further questions Recognise when other sources of information (secondary sources) will help answer questions that cannot be answered through practical investigations	Make predictions for new values Use a range of sources to support own evidence and talk about how scientific ideas have developed over time Evaluate the reliability of their methods and suggest improvements Identify scientific evidence that has been used to support or refute ideas or arguments
Working S	Planning and carrying out investigati ons	Recognise that questions can be answered in different ways Perform simple tests	Carry out pre- planned investigations – with support	Use different types of scientific enquiries to answer questions Set up simple practical enquiries Set up simple comparative tests	Set up fair tests Identify differences, similarities or changes related to simple scientific ideas and processes	Plan different types of scientific enquiries to answer questions – including recognising and controlling variables where necessary Suggest sensible improvements to experiments	Set up further comparative and fair tests in response to results
	Taking and recording observatio ns, measurem	Observe closely Use simple equipment	Gather and record data to help answer questions – with support	Start to make systematic and careful observations Take accurate measurements using standard units	Make systematic and careful observations Take accurate measurements using standard units using a range of equipment	Take accurate, precise measurements using appropriate equipment Know and explain when it is appropriate	Choose the most appropriate method for recording data and results of increasing complexity



	ents and				including	to take repeat	Make a series of
				Gather and record	thermometers and	measurements	observations,
	results			data to help answer	data loggers		comparisons and
				questions		Gather, record, classify	measurements with
					Record findings using	and present data in a	precision
				Start to record	simple scientific	variety of ways	
				findings using simple	language –	including scientific	
				scientific language	demonstrate through	diagrams and labels,	
					drawings, labelled	keys, graphs and tables	
					diagrams, keys, bar		
					charts and tables		
		Talk about what	Start to use simple	Report back on	Classify and present	Use scientific evidence	Present observations
		they have found	scientific language	findings verbally	data in a variety of	to answer questions	and data using
		out	in context		ways to help in		appropriate methods
	Explainin			Form conclusions	answering questions	Use scientific evidence	
	g results		Identify and classify	from findings		to support findings	Report and present
	gresults		objects as part of		Report back on		results including
	and		an investigation	Suggest	findings verbally and	Use results to draw	conclusions, causal
	drawing			improvements to	through written	conclusions	relationships and
	conclusio			investigations	explanations, displays,		explanations
	conclusio				presentations etc		
	ns			Use straightforward			Make conclusions
				scientific evidence to	Form sensible		consistent with evidence
				answer questions	conclusions from		and related to scientific
					findings		understanding
	Animals	Identify and name	Notice that	Identify that animals,	Construct and		Describe the ways in
		a variety of	animals, including	including humans,	interpret a variety of		which nutrients and
		common animals	humans have	need the right types	food chains, identifying		water are transported
		including fish,	offspring which	and amount of	producers, predators		within animals
		amphibians,	grow into adults	nutrition and that	and prey		(including humans)
≥ S		reptiles, birds and		they cannot make			
õ		mammals	Find out about and	their own food – they			
0			describe the basic	get nutrition from			
3ic		Identify and name	needs of animals,	what they eat			
		a variety of	including numans,	I de a tife a the a the same a s			
		common animais	for survival (water,	identify that numans			
		chat are	1000, air)	and some other			
		borbivores and		annindis flave			
				skeletons driu			
		omnivores		muscles for support,			



		Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)		protection and movement			
Biology	Humans	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Notice that humans have offspring which grow into adults Find out about and describe the basic needs for survival (food, water, air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Identify that humans need the right types and amount of nutrition and that they cannot make their own food – they get nutrition from what they eat Identify that humans have skeletons and muscles for support, protection and movement	Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions	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 lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within humans (and other animals)
	Animals and Humans Vocabulary	Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak.	Survival, Adult, Offspring, Exercise, Hygiene, Dental, Life Cycle, Young, Reproduction, Kitten, Calf, Puppy, Water, Air, Food.	Nutrition, nutrients, carbohydrates, protein, fats, fibre, vitamins, minerals, invertebrates, vertebrates, Balanced diet, Skeletons, contract, relax, joints, Movement, Muscles, Bones, Skull,	Digestive system, saliva, Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar, Premolar. Predator, Prey, Food chain, Mammals. Pancreas, Liver, Rectum, Anus.	Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Adolescence, Adulthood, Elderly. Growth, Development, Puberty, life cycle, fertilisation, Reproduce, Life Expectancy, Prenatal, Asexual reproduction,	Circulatory, Heart, Blood Vessels, Veins, Arteries, (De) Oxygenated, Aorta, Atrium, Capillaries, Deoxygenated, Valve, Vena Cava, Ventricle, Exercise, Respiration, Lifestyle, Substances. Microorganism, Organ, Pulse, Species.



Biology	Plants	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees	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	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		
	Plants Vocabulary	Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem.	Seeds, Bulbs, Water, Light, Temperature, Growth, Germination, Shoot, Dispersal,	Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower, Evaporation,		



		Stem, Petal, Root,	Fertilisation, Seed			
		Lear, Foilination.				
Biology	Living Things and their Habitats	Explore and compare the differences between things that are living, dead and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats – including microhabitats Describe how animals obtain their food from plants and other animals using the idea of a simple food chain –		Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life processes 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



	identify and name different sources of food			
Living Things and their habitats vocabulary	Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Life processes, Never lived, Food sources, Depend, Survive. Woodland, Pond, Desert, Urban, Coastal, Forest, Arctic, Ocean, Mountains	Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats.	Mammal, Reproduction (Sexual and Asexual), Insect, Amphibian, Bird, Offspring. Fertilise, Gestation, Life cycle, Metamorphosis, Pollination, Cutting, Bulb.	Classification, Micro- organisms, Characteristics, Identity, Taxonomist, Bacteria, Microscope, Species, Habitats, Biology.
Evolution and Inheritance				Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment and that adaptations lead to evolution



	Evolution vocabulary					Evolution, adaption, inherited traits, adaptive traits, natural selection, inheritance, Characteristics, Environment, Charles Darwin, Alfred Wallace, DNA, variation, offspring, fossil
Chemistry	Materials Including: Everyday uses of materials (Year 1 and 2) and properties and changes (year 5)	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties	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		Compare and group everyday materials based on their properties, including hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism Know some materials dissolve in liquid to form a solution and describe how to recover a substance from 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 now	
					materials and that	
					these changes are not	
					usually reversible eg:	
					changes from burning	
					or the action of	
					acid on bicarbonate of	
					soda.	
	Materials	Hard, Soft,	Properties,		Properties, <mark>solubility</mark> ,	
	Vocabulary	Stretchy, Stiff,	Material,		electrical –conductor,	
	vocabulary	Shiny, Dull,	Malleable, Flexible,		thermal, <mark>conductor</mark> ,	
		Rough, Opaque,	Rigid, Coarse,		dissolve, solution,	
		Transparent,	Smooth, Suitability.		separate,	
		Waterproof,	Paper, Fabrics,		reversible changes,	
		Bendy,	Squashing,		dissolving,	
		Manmade,	Bending, Twisting,		evaporation,	
		Natural,	Stretching, Elastic,		Filtering, sieving,	
		Absorbent.	Foil, Fabric, Paper,		melting, <mark>irreversible</mark>	
		Absorbent. <mark>Wood, Plastic,</mark>	Foil, Fabric, Paper, Rubber, Cardboard.		melting, <mark>irreversible</mark> changes material,	
		Absorbent. <mark>Wood, Plastic,</mark> Glass, Metal,	Foil, Fabric, Paper, Rubber, Cardboard.		melting, irreversible changes material, Insulation,	
		Absorbent. Wood, Plastic, Glass, Metal, Water, Rock.	Foil, Fabric, Paper, Rubber, Cardboard.		melting, irreversible changes material, Insulation, Chemical, Gas, Liquid,	
		Absorbent. Wood, Plastic, Glass, Metal, Water, Rock.	Foil, Fabric, Paper, Rubber, Cardboard.		melting, irreversible changes material, Insulation, Chemical, Gas, Liquid, Solid, Thermal,	
	Bocks	Absorbent. Wood, Plastic, Glass, Metal, Water, Rock.	Foil, Fabric, Paper, Rubber, Cardboard.	Compare and group	melting, irreversible changes material, Insulation, Chemical, Gas, Liquid, Solid, Thermal,	
ai >	Rocks	Absorbent. Wood, Plastic, Glass, Metal, Water, Rock.	Foil, Fabric, Paper, Rubber, Cardboard.	Compare and group together different	melting, irreversible changes material, Insulation, Chemical, Gas, Liquid, Solid, Thermal,	
emi Try	Rocks	Absorbent. Wood, Plastic, Glass, Metal, Water, Rock.	Foil, Fabric, Paper, Rubber, Cardboard.	Compare and group together different kinds of rocks on the	melting, irreversible changes material, Insulation, Chemical, Gas, Liquid, Solid, Thermal,	
chemi stry	Rocks	Absorbent. Wood, Plastic, Glass, Metal, Water, Rock.	Foil, Fabric, Paper, Rubber, Cardboard.	Compare and group together different kinds of rocks on the basis of their	melting, irreversible changes material, Insulation, Chemical, Gas, Liquid, Solid, Thermal,	

# PRIMARY SCHOOL

			simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks		
Chemistry	Rocks Vocabulary		and organic matter Pumice, Crystals, Absorbent, Sedimentary, Organic matter, Grains, Decay, Igneous, Imprint, Magma, Metamorphic, Mineral, Molten, Palaeontology, Permeable, Porous, Fossils, Sandstone, Granite, Marble, Rock.		
Chemistry	States of Matter			Compare and group materials together according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled: measure or	



				research the	
				temperature at which	
				this happens in	
				degrees C (°C)	
				Identify the part	
				played by evaporation	
				the water cycle and	
				associate the rate of	
				evanoration with	
				temperature	
	States of			Solid, Liquid, Gas,	
	States of			States of matter,	
	Matter			Evaporation,	
	Vocabulary			Condensation, Melting,	
				Particles, Freezing,	
				Boiling, solidify,	
				changing state,	
				degrees Celsius, water	
				cycle,	
				Material	
	Concernel	Observe changes			
	Seasonal	across the four			
	Changes	seasons			
		Observe and			
		describe weather			
Ŋ		associated with			
sic		the seasons and			
Ž		now day length			
à		varies.			
	Seasonal	Summer, Spring,			
	Changes	Autumn, Winter,			
	Changes	Sun, Day, Moon,			
	vocabulary	Night, Seasons,			



Light       Recognise that light is needed in order to see things and that dark is the absence of light       Recognise that light appears to travel in straight lines         Notice that light is reflected from surfaces       Recognise that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye       Recognise that light travels from light protect their eyes         Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       Recognise that light from light sources to objects and then to our eyes         Recognise that light from the light from a light source is blocked by an opaque object       Recognise that light travels from light travels in straight lines to explain that we see things because light travels from light sources to objects and then to our eyes
Light       Recognise that light is needed in order to see things and that dark is the absence of light       Recognise that light is raright lines       Recognise that light is raright lines         Visit       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 sught travels in straight lines to objects and that there are ways to protect their eyes       Recognise that sught travels in straight lines to objects and that there are ways to protect their eyes         Recognise that light from a light source is blocked by an opaque object       Protect their from a light source is blocked by an opaque object       Use the idea that light travels in straight lines to replain that be as the protect the rese the data the protect is straight lines to replain that the see things because light travels in straight lines to resplain that be as the protect their eyes       Recognise that sources to objects and then to our eyes or from light source is blocked by an opaque object
Light       Recognise that light is needed in order to see things and that dark is the absence of light       Recognise that light appears to travel in straight lines         View       Notice that light is reflected from surfaces       Recognise that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye         Sige       Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       Explain that we see things because light travels from light sources to objects and then to our eyes         Use the idea that light from the sun can be dangerous and that there are ways to protect their eyes       Use the idea that light travels 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 races       Use the idea that light travels in straight lines to explain why shadows have the same shape as
Light       is needed in order to see things and that dark is the absence of light       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         Sight       Notice that light dark is the absence of light       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         Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       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         Recognise that light source is blocked by an opaque object       Use the idea that light travels in straight lines to explain why shadows have the same shape as the object that
Size things and that       straight lines         dark is the absence       of light         Notice that light is       reflected from         surfaces       explain that objects are         Recognise that light       from the sun can be         dangerous and that       there are ways to         protect their eyes       Recognise that         Recognise that       shadows are formed         when the light from a       light source is         blocked by an       opaque object         Find natterns in the       Explain why shadows
Staget lines Staget lines Use the idea that light travels in straight lines Staget lines Use the idea that light travels in straight lines Staget lin
Signal       Use the idea that light of light       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         Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       Recognise that eyes       Explain that we see things because light travels from light sources to objects and then to our eyes or from light source is blocked by an opaque object         Biocheck by an opaque object       Discrete the light times to explain that state the same see the see the see the see that light travels in straight lines to eyes
Signet       Oright       Gorden and the light in a too be the light in too be the light into the eye       Free origin that objects are seen because they give out or reflect light into the eye         Signet       Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       Explain that we see things because light travels from light sources to objects and then to our eyes or from light sources to objects and then to our eyes         Recognise that       Sources to objects and then to our eyes       Sources to objects and then to our eyes         Recognise that       Sources to objects and then to our eyes       Sources to objects and then to our eyes         Recognise that       Source is blocked by an opaque object       Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast
Signal       Notice that light is reflected from surfaces       explain that objects are seen because they give out or reflect light into the eye         Signal       Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       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         Recognise that       Item that solution is the blocked by an opaque object       Use the idea that light travels in straight lines to explain why shadows have the same as the objects that cast the construction is the construction.
Signature       reflected from surfaces       reflected from surfaces       seen because they give out or reflect light into the eye         Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       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       Use the idea that light travels in straight lines to explain why shadows
Signature       Surfaces       Out or reflect light into the eye         Signature       Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       Explain that we see things because light travels from light sources to or from light sources to objects and then to our eyes         Recognise that shadows are formed when the light from a light source is blocked by an opaque object       Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast
Since       Recognise that light       the eye         From the sun can be       dangerous and that       Explain that we see         dangerous and that       there are ways to       protect their eyes         Protect their eyes       Recognise that       sources to our eyes or         Recognise that       shadows are formed       eyes         When the light from a       light source is       Use the idea that light         blocked by an       opaque object       Have the same shape as         Find patterns in the       Find patterns in the       Find patterns in the
Signal       Recognise that light from the sun can be dangerous and that there are ways to protect their eyes       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         When the light from a light source is blocked by an opaque object       Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast
Signal       from the sun can be dangerous and that there are ways to protect their eyes       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         Recognise that shadows are formed when the light from a light source is blocked by an opaque object       Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast
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
Image: Construct of the construction of the constructio
Protect their eyes       sources to our eyes or from light sources to objects and then to our eyes         Recognise that shadows are formed when the light from a light source is blocked by an opaque object       Use the idea that light travels in straight lines to explain why shadows have the same shape as         Find natterns in the       Find natterns in the       the objects that cast
Recognise that shadows are formed when the light from a light source is blocked by an opaque object Lind natterns in the Lind natterns in the Lind Natterns in the Lind natterns in the Lind Natterns
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shadows are formed when the light from a light source is blocked by an opaque object Eind patterns in the blocked by an opaque object blocked by an blocked by an opaque object blocked by an opaque object
when the light from a light source is       Use the idea that light travels in straight lines to         blocked by an       opaque object         blocked by an       have the same shape as         blocked by an       the object
Image: series of the series
blocked by an opaque object Find patterns in the blocked by an opaque object blocked b
opaque object     explain why shadows       have the same shape as     the objects that cast
Find patterns in the find patt
Find natterns in the line line line line line line line lin
way that the size of them
shadows change
Light Reflective, Reflection,
Vocabulary Reflection, Spectrum, Rainbow,
Natural, Artificial, Bright Dark Dim
Bigilt, Dark, Diff, Electricity, Emits
Electricity, Efficis, Snadows, mirrors, Mirror Light
Onaque Shadows
Torches Translucent
Transparent



Fo	orces and	Compare how things	Explain that
N	lagnets	move on different	unsupported objects
		surfaces	fall towards the Earth
			because of the force of
		Notice that some	gravity acting between
		forces need contact	the Earth and the
		between two objects,	falling object
		but magnetic forces	
		can act at a distance	Identify the effects of
			air resistance, water
		Observe how	resistance and friction,
		magnets attract or	that act between
		repel each other and	moving surfaces
		attract some	
		materials and not	Recognise that some
(0)		others	mechanisms including
<b>Ö</b>			levers, pulleys and
Si		Compare and group	gears allow a smaller
		together a variety of	force to have a greater
		everyday materials	effect
		on the basis of	
		whether they are	
		attracted to a	
		magnet and identify	
		some magnetic	
		materials	
		Describe magnets as	
		having two poles	
		Predict whether two	
		magnets will attract	
		or repel each other	
		depending on which	
		poles are facing	
Fo	prces and	Magnet, Force,	Gravity, air resistance,
n.	Angeneta	Attract,	water resistance,
IV	agnets	Repel, Friction, Poles,	friction, Levers,
Vo	cabulary		mechanism, <mark>pulley</mark> ,



			Magnetic Poles,		gear, spring, theory of	
			Magnetic Field.		gravitation, Galileo	
					Galilei, Isaac Newton,	
					Parachute,	
					Gravitational Pull.	
					Friction	
	Cound			Identify how sounds		
	Sound			are made associating		
				some of them with		
				something vibrating		
				Recognise that		
				vibrations from sounds		
				travel through a		
				medium to the ear		
				Find patterns between		
S				the pitch of a sound		
ii.				and features of the		
Š				object that produced it		
F						
_				Find patterns between		
				the volume of a sound		
				and the strength of the		
				vibrations that		
				produced it		
				Recognise that sounds		
				get fainter as the		
				distance from the		
				sound source increases		
				Sound Source meredses		
	Sound			Vibration, Wave, Pitch,		
	Maakular			Tone, Percussion,		
	vocabulary			Wood wind, Brass,		
				Insulate, Medium,		
				Volume, Amplitude.		



	5		-	
	Electricity		Identify common	Associate the brightness
			appliances that run on	of a lamp or the volume
			electricity	of a buzzer with the
			-	number and voltage of
			Construct a simple	cells used in the circuit
			series electrical circuit	
			identifying and naming	Compare and give
			its basic parts including	reasons for variations in
			cells wires bulbs	how components
			switches and huzzers	function including the
			switches and buzzers	hunction, including the
				brightness of builds, the
			Identify whether or not	loudness of buzzers and
			a lamp will light in a	the on/off position of
(0)			simple series circuit,	switches
Ű			based on whether or	
Si			not the lamp is part of	Use recognised symbols
			a complete loop with a	when representing a
5			battery	simple circuit in a
			-	diagram
			Recognise that a	C
			switch opens and	
			closes a circuit and	
			associate this with	
			whether or not a lamp	
			lights in a simple series	
			circuit	
			Recognise some	
			common conductors	
			and insulators and	
			and insulators, and	
			associate metals with	
			being good conductors	
	Electricity		Cells, Switches,	Amps, Volts, Voltage,
	Vocabulary		Buzzers,	Cell, Circuit, Symbols,
	vocabulary		Motor, Circuit, Series,	Ammeter, Battery.
			Conductors, Insulators,	Component, Conductor,
			complete circuit,	Current, Electricity,
			Electricity, Wires,	Insulator, Voltage,
			Battery.	Switch, Bulbs, Buzzers,
				Motors.



	Earth and			Describe the	
	Create			movement of the Earth	
	Space			and other planets	
				relative to the sun in	
				the solar system	
				Describe the	
				movement of the	
S				moon relative to the	
Ŭ				Earth	
<mark>∕</mark>					
<mark>ہ</mark>				Describe the sun, Earth	
<u> </u>				and moon as	
				approximately	
				spherical bodies	
				lise the idea of the	
				Farth's rotation to	
				explain day and night	
				and the apparent	
				movement of the sun	
				across the sky	
	Earth and			Earth, <mark>Sun</mark> , <mark>Moon</mark> ,	
				Orbit, Axis, Rotation,	
	Space			Spherical, Hemisphere,	
	Vocabulary			<mark>Season</mark> , Tilt,	
				Phases of the Moon,	
				star,	
				constellation, Solar	
				<mark>system</mark> ,	
				Mercury, Venus, Mars,	
				Jupiter, Saturn,	
				Oranus, Neptune,	
				Celestial, Planet,	
				Satellite, Day, Night	