A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of

excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific
- disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through
- different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Key Ideas: Physics, Chemistry, Biology and Working Scientifically. (i.e. Collecting Data, Asking Scientific Questions, Using Graphs and Tables, Understanding Fair Testing, Presenting and Interpreting Data, Using Graphs and Tables, Hypothesising, Evaluating and Concluding, Researching).

Threshold Concepts: Data Collection and Analysis, Animals and Human, Plants and Habitats, Health and Evolution, Electricity and Light, Materials, Rocks and Space, States of Matter, Weather and Water Cycles.

	K	S1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Breath of study	Looking at Animals - Habitats - Identify and name a variety of	The Apprentice Gardener - Observe and describe how seeds and bulbs	The Power of Forces - Compare how things move on different	Who am I? – Living things and their habitats Where does all that food	The Circle of Life and reproduction of plants and animals – Describe	Body Pump and Body Health – Identify and name the main parts of	
	different animals inc. fish, amphibians,	grow into mature plants. Find out and describe	surfaces. Notice that some forces	go? – Recognise that living things can be	the differences in the life cycles of a mammal, an	the human circulatory system, and describe the	
Bringing writing	reptiles, birds,	how plants need water,	need contact between	groups in a variety of	amphibian, an insect	functions of the heart,	
to science	carnivores, omnivores and herbivores.	light and a suitable temperature to grow	two objects, but magnetic forces can act	ways. Describe the simple functions of the	and a bird. Describe the life process	blood vessels and blood Recognise the impact of	
	Answer questions about	and stay healthy.	at a distance.	basic parts of the	of reproduction in some	diet, exercise, drugs and	
(BWS)	animals in their habitats.	BWS – Rewrite 'Jack and	BWS – Write a story about	digestive system in	plants and animals.	lifestyle on the way their	
	BWS – Write a story	the beanstalk' and	why/how two magnets	humans.	Describe the changes as	bodies function	
	(picture book) on your	describe why and how	struggled to play	Identify the different	humans develop to old	Describe the ways in	
	favourite animal and	the beanstalk grew.	together.	types of teeth in humans	age.	which nutrients and	
	their habitat.	Crowing up and Igking	Animals and humans and	and their simple functions.	BWS – Write a narrative about 'animal friendships	water are transported within animals, including	
	Plant Detectives -	Growing up and Taking Care - Describe the	all living things - Identify	Construct and interpret a	and enemies.'	humans.	
	Identify and name a	importance for humans	that animals, including	variety of food chains,	dia chemies.	BWS – Create a	
	variety of common wild	of exercise, eating the	humans, need the right	identifying producers,	The Earth and beyond -	pamphlet for year 5's on	
	and garden plants,	right amounts of different	types of nutrition, and	predators and prey.	Describe the movement	the importance of a	
	including deciduous	types of food, and	that they cannot make	BWS – Create a	of the Earth, and other	healthy lifestyle.	
	and evergreen trees.	hygiene.	their own food; they get	pamphlet for the dentist	planets, relative to the		
	Identify and describe	BWS – Create a	nutrition from what they	of how to look after your	Sun in the solar system	Everything changes –	
	the basic structure of a	pamphlet for year 1 to	eat.	teeth and what different	Describe the movement	Recognise that living	
	variety of common	explain why being healthy is important.	Identify that humans and some animals have	teeth there are.	of the Moon relative to the Earth	things have changed over time and that fossils	
	flowering plants, including trees.	nealiny is important.	skeletons and muscles for	Switched on - Identify	Describe the Sun, Earth	provide information	
	BWS – Write a speech	All Things Bright and	support, protection and	common appliances that	and Moon as	about living things that	
	about your favourite	Beautiful – Describe how	movement.	run on electricity.	approximately spherical	inhabited the Earth	
	tree or flower. What	animals obtain their food	BWS – Write a letter to a	Construct a simple series	bodies.	millions of years ago	
	about this plant do you	from plants and other	safari park explaining	electrical circuit,	BWS – Write a letter to Tim	Recognise that living	
	like?	animals, using the idea of	what your chosen animal	identifying and naming	Peake explaining what	things produce offspring	
		a simple food chain, and	would need to stay	its basic parts, including	you have learnt about	of the same kind, but	
	Using our senses -	identify and name	healthy.	cells, wires, bulbs,	our solar system and ask	normally offspring vary	
	introduction to the concept of five senses	different sources of food. BWS – Write a simple 3-	How does your garden	switches and buzzers. BWS – Write a newspaper	him relevant questions.	and are not identical to their parents.	
	that help them to find	part food chain poem.	grow? - Identify and	report on the importance	Feel the force - Explain	BWS – Write a newspaper	
	out about the world	E.g. Grass – Rabbit - Fox	describe the functions of	of electricity.	that unsupported objects	report on the theory of	
	around them and link		different parts of		fall towards the Earth	evolution.	
	those senses to	Marvellous Materials -	flowering plants: roots,	Good Vibrations -	because of the force of		
	particular parts of their	Identify and compare	stem/trunk, leaves and	Identify how sounds are	gravity. Recognise that	The Nature Library –	
	body.	the uses of a variety of	flowers.	made, associating some	some mechanisms,	Describe how living	
		everyday materials,			including levers, pulleys	things are classified into	

Science Curriculum Progression							
	BWS – Make a leaflet to go in a hospital telling people about senses. Everyday Materials - Distinguishing between and object and a material from which it is made. Identify and name a variety of everyday materials. BWS – Rewrite '3 little pigs' using different materials.	including wood, metal, plastic, 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. BWS – Write a letter to Goldilocks and explain why she might find the different materials in the beds uncomfortable.	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. BWS – Write a poem about the growth of a plant and what it needs to grow. Can You Lose Your Shadow? - 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 shadows are formed when the lights from a light source is blocked by a solid object. BWS – Write a story about a child who thinks they lose their shadow at night. Rock Detectives - Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. BWS – Create a pamphlet on the different types of rock and how they are formed.	of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. BWS – Write a letter to your favourite musician/band explaining what their music sounds like and why. In a state – Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius. BWS – Write a story (picture book) for KS1 explaining the water cycle.	and gears, allow a smaller force to have a greater effect. BWS – Create a pamphlet to give to the ancient Egyptians to advise on how they should build the pyramids. Everyday Materials and Marvellous mixtures - Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. 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. BWS – Write instructions on the best techniques to use when trying to find nuggets of gold in a river.	broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. BWS – Write a narrative about what micro- organisms need to survive. Light up your world - 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. BWS – Write a poem about how light travels and how we see. Danger! Low voltage – Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. BWS – Write a letter to EON discussing the importance of electricity and how solar panels/turbines can help our environment.	
Gathering and presenting evidence	They will organise any data that they collect using tables and tally charts as appropriate. strong emphasis on children observing closely, identifying and	Children record series of observations using labelled drawings and photographs in diaries. Working scientifically by making careful observations over time.	They will have opportunities to gather data and record and present these in a range of ways. When working scientifically children will	Children will ask and answer questions about teeth, digestion and food chains by carrying out research using secondary sources.	They will consider how rocks are affected by weathering over time and work scientifically to carry out tests to establish the hardness and permeability of different kinds of rocks.	Children will use secondary sources of information with increasing independence in order to find answers to questions about the functions of different	

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	Science Curriculum Progression							
	classifying, and comparing and contrasting. Perform simple tests to explore questions. Look for simple patterns, for example, about their likes and dislikes.	Observing changes over time, identifying and classifying, and noticing patterns.	compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet. Children will ask and answer their own questions about plants through classifying, observing over time, conducting fair test investigations and using secondary sources.	Children will make detailed observations and learn which features are useful for identification and classification. Children will make careful observations and explain what they show. They will also observe and measure changes over time, first-hand and using secondary sources. They will classify materials and record their sorting using Venn diagrams. They will group and classify teeth by their function and relate this to diet. They will present information in labelled diagrams, lists, sorting diagrams and keys, and will learn to interpret information presented in a key.	They look at scientific ideas from the past and carry out an activity to find evidence to support or refute famous scientists' ideas. They make predictions as a result of carrying out simple activities and go on to plan new investigations.	parts of the circulatory system that they cannot investigate first hand. (This should involve them using quality non-fiction books, web-based material and health education publications).		
Exploring and Planning	Each sense is explored by children as they answer a variety of science questions. Compare and describe physical properties of everyday materials.	Observing change over time and comparative tests; there is also identifying and classifying, pattern finding and research using secondary sources (videos). using simple equipment and recording their observations in a range of different ways.	Children will ask and answer their own questions about the human body and diet through classifying, pattern-seeking investigations and by carrying out research using secondary sources. They will carry out comparative and fair tests to investigate the strength of magnets and how objects move on different surfaces. They will consider how rocks are affected by	They will plan and carry out a classifying enquiry, recording findings using tables, Venn and Carroll diagrams and will recognise that generalizations cannot be made from small amounts of evidence. They will have opportunities to carry out comparative and fair tests on different types of toothpaste and to record and present data in a range of ways.	Children plan and carry out comparative and fair tests to answer questions about how and why certain materials are selected and used because of their properties. They do this increasingly independently, recognising and controlling variables where necessary, so that they collect sufficient quality evidence to enable them to answer their science questions.	Children use secondary sources of information to answer questions about how mains electricity is generated. Children ask and propose answers to their own questions about shadow formation as well as exploring quantitatively the formation of shadows. They carry out illustrative practicals to explore phenomena.		

			weathering over time and work scientifically to carry out tests to establish the hardness and permeability of different kinds of rocks.	children will look for patterns between the volume of a sound and the strength of the vibrations that produced it. They will also explore the pitch of a sound and ways in which it can be changed. They will do this by investigating how to make and change the sounds produced in a range of different ways. They will plan and carry out fair tests, learning to identify and control variables and drawing up tables to record their data. This will then be presented as bar or bar line graphs.	children plan and carry out fair test and pattern- seeking investigations, observe carefully, record accurate measurements, and construct different mechanisms.		
Interpreting Results / Evidence	Look for simple patterns, for example, about their likes and dislikes. Children use simple vocabulary to describe their observations and to identify similarities and differences, and group the evidence they collect in different ways, sometimes using criteria provided by their teacher and sometimes developing their own criteria, with support and where appropriate.	Observing changes over time, identifying and classifying, and noticing patterns. children will be classifying materials, carrying out comparative tests for different properties and	When working scientifically children will ask and answer their own questions about light and shadow as well as investigate how some materials block more light than others. They will do this through sorting objects according to how much light they block, as well as through simple shadow investigations. They will make predictions as to whether two magnets will attract or repel each other, depending on which poles are facing. They will identify ways in which rocks are used in the local environment and suggest why the properfies of certain	They will group and classify teeth by their function and relate this to diet. They will present information in labelled diagrams, lists, sorting diagrams and keys, and will learn to interpret information presented in a key. They will have the opportunity to set up simple comparative and fair tests, take measurements, including using data loggers, and report on their findings. Children will identify patterns in the data and use these to answer their investigation questions and to make further predictions. When investigating changes of	Identify and name rocks, describing and comparing their observable properties and sorting them using a key. They will identify ways in which rocks are used in the local environment and suggest why the properties of certain rocks make them suitable for particular purposes. There are opportunities to develop graphing skills as well as communication and presentation skills.	Children will use observations and secondary source material to help classify living things, record plants and animals in the school environment and use evidence to support or refute ideas. Children take measurements to record variation in plants and animals; they use scientific models to describe complex processes such as selective breeding and natural selection, they question themselves and their peers on aspects of adaptation, and they develop their skills for evaluating evidence. They develop the idea of explaining and supporting the points	

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			rocks make them suitable for particular purposes.	state they will use thermometers and data loggers, applying their mathematical knowledge of the measurement of temperature in degrees Celsius and learning to interpret a line graph (data logger trace) of temperature and time.		they make with data and evidence, and consider how confident they feel in the conclusions that they draw, relating them back to predictions that they have made earlier.
	Key concepts:	Key concepts:	Key concepts:	Key concepts:	Key concepts:	Key concepts:
	BIOLOGY	BIOLOGY	BIOLOGY	BIOLOGY	BIOLOGY	BIOLOGY
	THE CELLULAR BASIS OF LIFE	THE CELLULAR BASIS OF LIFE	THE CELLULAR BASIS OF LIFE	THE CELLULAR BASIS OF LIFE	THE CELLULAR BASIS OF LIFE	THE CELLULAR BASIS OF LIFE
	HEREDITY AND LIFE CYCLES	HEREDITY AND LIFE CYCLES	HEREDITY AND LIFE CYCLES	HEREDITY AND LIFE CYCLES	HEREDITY AND LIFE CYCLES	HEREDITY AND LIFE CYCLES
	VARIATION, ADAPTATION AND EVOLUTION	VARIATION, ADAPTATION AND EVOLUTION	VARIATION, ADAPTATION AND EVOLUTION	VARIATION, ADAPTATION AND EVOLUTION	VARIATION, ADAPTATION AND EVOLUTION	VARIATION, ADAPTATION AND EVOLUTION
	ORGANISMS AND THEIR ENVIRONMENTS	ORGANISMS AND THEIR ENVIRONMENTS	ORGANISMS AND THEIR ENVIRONMENTS	ORGANISMS AND THEIR ENVIRONMENTS	ORGANISMS AND THEIR ENVIRONMENTS	ORGANISMS AND THEIR ENVIRONMENTS
Threshold		HEALTH AND DISEASE	HEALTH AND DISEASE	HEALTH AND DISEASE	HEALTH AND DISEASE	HEALTH AND DISEASE
	HEALTH AND DISEASE	PHYSICS	PHYSICS	PHYSICS	PHYSICS	PHYSICS
Concepts	PHYSICS	MATTER	MATTER	MATTER	MATTER	MATTER
	MATTER	FORCES AND MOTION	FORCES AND MOTION	Forces and motion	FORCES AND MOTION	FORCES AND MOTION
	FORCES AND MOTION	sound, light and waves	Sound, light and	Sound, light and	sound, light and	Sound, light and
	SOUND, LIGHT AND WAVES		WAVES	WAVES	WAVES	WAVES
	ELECTRICITY AND	ELECTRICITY AND MAGNETISM	ELECTRICITY AND MAGNETISM	ELECTRICITY AND MAGNETISM	ELECTRICITY AND MAGNETISM	ELECTRICITY AND MAGNETISM
	MAGNETISM	EARTH IN SPACE	EARTH IN SPACE	EARTH IN SPACE	EARTH IN SPACE	EARTH IN SPACE
	EARTH IN SPACE	CHEMISTRY	CHEMISTRY	CHEMISTRY	CHEMISTRY	CHEMISTRY
	CHEMISTRY SUBSTANCES AND PROPERTIES	SUBSTANCES AND PROPERTIES	SUBSTANCES AND PROPERTIES	SUBSTANCES AND PROPERTIES	SUBSTANCES AND PROPERTIES	SUBSTANCES AND PROPERTIES

		Scienc	e Curriculum Prog	ression		
	PARTICLES AND	PARTICLES AND	PARTICLES AND	PARTICLES AND	PARTICLES AND	PARTICLES AND
	STRUCTURE	STRUCTURE	STRUCTURE	STRUCTURE	STRUCTURE	STRUCTURE
	CHEMICAL REACTIONS	CHEMICAL REACTIONS	CHEMICAL REACTIONS	CHEMICAL REACTIONS	CHEMICAL REACTIONS	CHEMICAL REACTIONS
	EARTH'S ATMOSPHERE	EARTH'S ATMOSPHERE	EARTH'S ATMOSPHERE	EARTH'S ATMOSPHERE	EARTH'S ATMOSPHERE	EARTH'S ATMOSPHERE
	DYNAMIC EARTh	DYNAMIC EARTH	DYNAMIC EARTH	DYNAMIC EARTH	DYNAMIC EARTH	DYNAMIC EARTH
	Animals including humans	Animals including humans	Animals including humans	Animals including humans	Animals including humans	Animals including humans
	Fish, Reptiles, Mammals,	Survival, Water, Air, Food,	Movement, Muscles,	Mouth, Tongue, Teeth,	Foetus, Embryo, Womb,	Circulatory, Heart, Blood
	Birds, Amphibians (+ examples	Adult, Baby, Offspring, Kitten, Calf, Puppy,	Bones, Skull, Nutrition, Skeletons	Oesophagus, Stomach, Small Intestine, Large	Gestation, Baby, Toddler, Teenager, Elderly,	Vessels, Veins, Arteries, Oxygenated,
Conceptual	of each)	Exercise, Hygiene		Intestine, Herbivore,	Growth, Development,	Deoxygenated, Valve,
•	Herbivore, Omnivore, Carnivore,	Plants	Plants Air, Light, Water,	Carnivore, Canine, Incisor, Molar	Puberty	Exercise, Respiration
Vocabulary (Leg, Arm, Elbow, Head,	Seeds, Bulbs, Water,	Nutrients, Soil,		Living things and their	Living things and their
Component	Ear,	Light, Temperature,	Reproduction,	Living things and their	habitats	habitats Classification
•	Nose, Back, Wings, Beak	Growth	Transportation, Dispersal, Pollination, Flower	habitats Vertebrates, Fish,	Mammal, Reproduction, Insect, Amphibian, Bird,	Classification, Vertebrates,
Knowledge)	Plants	Living things and their		Amphibians, Reptiles,	Offspring	Invertebrates, Micro-
	Deciduous, Evergreen trees,	habitats Living, Dead, Habitat,	Rocks Fossils, Soils, Sandstone,	Birds, Mammals, Invertebrates, Snails,	Properties and changes	organisms, Amphibians, Reptiles, Mammals,
	Leaves, Flowers	Energy, Food chain,	Granite, Marble, Pumice,	Slugs, Worms, Spiders,	of materials Hardness,	Insects
	(blossom),	Predator, Prey,	Crystals, Absorbent	Insects, Environment,	Solubility, Transparency,	Freeholden and M. J. M.
		Woodland, Pond, Desert		Habitats	Conductivity, Magnetic,	Evolution and Inheritance

Everyday MaterialsHard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Water, Metal, Rock, Hard, Soft, Bendy, Rough, SmoothReflective ReflectionHard, Soft, Smooth, Bendy, Water, Metal, Rock, Hard, Soft, Bendy, Rough, SmoothHard, Soft, Stretchy, Stiff, Smooth, Bendy, Waterproof, Absorbent, Brick, Paper, Fabrics, Squashing, Bending, Twisting, StretchingReflective Reflection	Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, s, Push, PullEarth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellationLight Refraction, Reflection, Light, Spectrum, Rainbow, Colouract, Repel, s, Push, PullSoundForces Air resistance, Water resistance, Friction,Electricity Switches, Bulbs, Switches, Buzzers, Battery
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 Biology: Heids y contained a variety of common plants, including partners and fewere in the functions of different parts. And the index device of plants to studies of evolution and inheritance. Biology: Heids is movieding of plants to studies of evolution and inheritance. Biology: Heids is movieding of plants to studies of evolution and inheritance. Biology: Heids is movieding of plants to studies of evolution and inheritance. Biology: 	Science Curriculum Progression							
Milestones Including groden plants, wild points on the resorted of drawering plants, roots, stem, Jeaves and Braves, Brav		Biology:	Biology:	Biology:				
Milestones Including groden plants, wild points on the resorted of drawering plants, roots, stem, Jeaves and Braves, Brav		Identify and name a variety of common plants,	Identify and describe the functions of different parts	Relate knowledge of plants to studies of evolution				
 Hase classified as deciduous and avergenen. Explore their productions of a workey of common flowering points, including produce of a workey in which weight work in which weight wei			of flowering plants: roots, stem, leaves and flowers.					
 Milestones I clarity and classible the basic structure of a single to any one phase is a discussion of the single to any one of the single to a				 Relate knowledge of plants to studies of all living 				
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			organic matter.	piasiic.				

• 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.

• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard for particular uses.

Physics:

• Notice and describe how things move, using simple comparisons such as faster and slower.

• Compare how different things move.

• Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes.

 Observe and name a variety of sources of sound, noticing that we hear with our ears.

• Identify common appliances that run on electricity.

• Construct a simple series electrical circuit.

• Observe the apparent movement of the Sun during the day.

• Observe changes across the four seasons.

• Observe and describe weather associated with the seasons and how day length varies.

States of Matter

• Compare and group materials together, according to whether they are solids, liquids or gases.

• Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius

(°C), building on their teaching in mathematics.

• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Physics:

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 magnetic materials.

• Describe magnets as having two poles.

• Predict whether two magnets will attract or repel each other, depending on which poles are facing.

• 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 a solid object.

• Find patterns in the way that the size of shadows change.

• Identify how sounds are made, associating some of them with something vibrating.

• Recognise that vibrations from sounds travel through a medium to the ear.

• Identify common appliances that run on electricity.

 Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.

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.

• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • 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, oxidation and the action of acid on bicarbonate of soda.

Physics:

Magnets

• Describe magnets as having two poles.

• Predict whether two magnets will attract or repel each other, depending on which poles are facing.

Forces

• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.

• Identify the effect of drag forces, such as air resistance, water resistance and friction, that act between moving surfaces.

• Describe, in terms of drag forces, why moving objects that are not driven tend to slow down.

• Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.

• Understand that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

• Understand 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 eyes.

• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.

• 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.

• Find patterns between the pitch of a sound and features of the object that produced it.

• Find patterns between the volume of a sound and the strength of the vibrations that produced it.

• Recognise that sounds get fainter as the distance from the sound source increases.

Science Curriculum Progression							
Recognise some common conductors and insulators, and associate metals with being good conductors. Describe the movement of the Earth relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth.	components function, including the brightness of						

		Scienc	e Curriculum Prog	ression			
	To work scientifically:		To work scientifically:		To work scientifically:		
	 Ask simple questions. 		 Ask relevant questions. 		Plan enquiries, including recognising and controlling		
	Observe closely, using si	mple equipment.	• Set up simple, practical e	enquiries and comparative	variables where necessary	·. · · · · · · · · · · · · · · · · · ·	
	Perform simple tests.		and fair tests.		• Use appropriate techniq	ues, apparatus, and	
	 Identify and classify. Use observations and ideas to suggest answers to 		Make accurate measure	ments using standard units,	materials during fieldwork		
			using a range of equipmer	0	• Take measurements, usir	•	
	questions.	00	data loggers.			accuracy and precision.	
	Gather and record date	a to help in	Gather, record, classify a	ind present data in a	Record data and results		
	answering questions.	1-	variety of ways to help in a	•	using scientific diagrams a	o . ,	
	0 1		Record findings using sim		keys, tables, bar and line g		
			drawings, labelled diagram		Report findings from eng		
			5	inquiries, including oral and		ults, explanations involving	
			written explanations, displa		causal relationships, and c		
			results and conclusions.		Present findings in writter		
			Use results to draw simple	conclusions and suggest	presentations.		
			improvements, new question		•	predictions to set up further	
			setting up further tests.		comparative and fair tests	•	
			Identify differences, similar	prities or changes related	Use simple models to des		
			to simple, scientific ideas a	5	identifying scientific evider		
			Use straightforward, scier	•	support or refute ideas or arguments.		
			questions or to support the				
	WALT investigate living	WALT investigate plant	WALT investigate	WALT investigate	WALT understand	WALT understand animals	
	things	growth	movement, forces and	electrical circuits	movement, forces and	and humans	
	Create an environment	Grow a selection of	magnets	Children will make an	magnets	Why might (suggest)	
	for woodlice in the forest	plants, looking into what	Investigate practical	electric quiz board. By	Investigate practical	children in countries	
	school area – Prove that	each plant needs to	applications of the	the end of this lesson	applications of the	affected by war become	
	this is a successful	grow. Document growth	understanding of which	children will be able to	understanding of which	illš	
	habitat	and changes. Seasonal	materials are not	make a quiz board using	materials are not	Investigate malnutrition.	
		changes can be linked.	attracted to magnets.	multiple series circuits.	attracted to magnets.	(Milestone 2 – see page	
	WALT investigate		Suggest some uses for		Suggest some uses for	175 for example).	
POP tasks	materials	WALT investigate	this in school.	WALT investigate sound	this in school.		
	Investigate materials	materials		and hearing		WALT create shadow	
	suitable for a baby owl	Paper is unsuitable for a	WALT understand animals	Suggest a way to prove	WALT understand Moon	puppets	
	nest.	model boat. Do you	and humans	the relationship between	phases	Children plan, test and	
		agree or disagree?	How are predators	vibration and pitch.	In this lesson the children	make puppets for a	
	WALT investigate sound	(reason and justify)	affected by changes in	True or false? Higher	use their Moon diaries as	shadow theatre.	
	and hearing	Devise other hypothesis	the natural environment?	notes are louder than	a source of information	Extension lesson 2 that	
	Suggest – How can we	like this and test them.	(Milestone 2 – see page	lower notes.	to investigate how the	follows has the	
	protect our ears from		176 for example)		Moon appears to	performance and	
	loud sounds? (Milestone	WALT investigate what is		WALT investigate states of	change shape over a	evaluation of the activity	
	1 – see page 124 for	needed for a healthy	WALT investigate fossils.	matter	month. By the end of the	Ideally arrange for a	
	example)	lifestyle	Create a fact file about	Suggest practical uses	lesson the children are	class of younger children	
		Create a picture book	how fossils are formed,	between the relationship	able to explain that the	to be the audience for	
	WALT understand plants	for younger children to	where fossils may be	between temperature	Moon looks as if it	the performance.	
	Create a spotters guide	demonstrate what they	found and how they can	and evaporation.	changes shape		
	to school plants using a	know about keeping	be safely collected.	Suggest. (Milestone 2 –	because, although half	WALT create a	
	categorisation key.	healthy.			of it is always illuminated	guidebook	

Science Curriculum Progression							
WALT investigate living things Always, sometimes, never? Food chains end with a carnivore (Milestone 1 – see page 117 for example)	 Ce Curriculum Prog WALT investigate important changes in our environment Research why bees are important and what we need to do to save them. Children need to present their finding but can do so in their chosen media. Eg. news report, poster or PPT. WALT understand light and seeing Explain why an umbrella is a useful practical example of shadows. (apply) Give examples of other practical uses for shadows. (apply) 	see page 189 for example) WALT understand invertebrates. Children make a classification key to sort invertebrates into groups. WALT investigate toothpaste Children will try out different recipes for home-made toothpaste. By the end of the lesson they will know why toothpastes contain a range of different ingredients and they will have made and tested some of their own.	by the Sun, we can't always see the entire illuminated half from the Earth. WALT investigate materials Generalise: how can the hardness of a rock be related to its origins? WALT investigate glue Children learn about the chemist Spencer Silver and how he created Post-it™ notes almost by accident, as he worked to create a super-sticky glue. By the end of this lesson children will have investigated and made glues themselves, identifying the properties of glue and how they can be used for different purposes. WALT investigate living things Compare changes in two or more habitats and categorise the effects of the changes Explain the concept of conservation and how groups are trying to preserve habitats.(Milestone 2 – see page 182 example)	Children apply their knowledge from the module to a real life context by looking at living things that they have in their home and their school environment. WALT understand electrical circuits Investigate battery powered road cars and draw some conclusions about their benefits and problems. WALT understand evolution and inheritance Explain the concept of inheritance. Investigate how scientists and doctors are researching conditions that are inherited from a parent. (Milestone 2 – see page 183 for example)			