



Red Hall Primary School
Science Progression Document

NB. This document will change in 2023/24 due to this year being completion of rolling curriculums across year 3/4 and 5/6

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Intent, Implementation and Impact

Intent:

- We believe that pupils should be engaged as learners at many levels through linking ideas with practical experience which develops the skills of enquiry, observation, research, experimentation, use of apparatus, measuring and checking results, making comparisons and communicating results and findings.
- We aim to foster open minded thinking and encourage children to make links in their knowledge and understanding. This promotes discussion and allows children to express their reasoning to the rest of the class.
- In science, we aim to stimulate and excite pupils' curiosity about changes and events in the world, and to enable them to satisfy this curiosity with understanding. We want children to develop lifelong curiosity and interest in the sciences. We link pupils' understanding with scientific thought and allow them to develop a greater understanding of the world in which we live and their responsibility to ensure its sustainability.
- We aim to embed all of our school curriculum drivers within our Science Curriculum as well as making links between other curriculum areas.
- We aim to ensure progression of knowledge, vocabulary and skills from EYFS through to year 6 so this can be built on and developed each year as well as ensuring children can recall this even in years where they do not do units.

Implementation:

The acquisition of key scientific knowledge is an integral part of our science lessons. A cycle of lessons for each science topic is carefully planned, using a range of resources. The progression of skills for working scientifically are developed throughout the year and a range of scientific enquiries are used to develop these skills and children's scientific knowledge. This is developed with increasing depth and challenge as the children move through year groups. We use big questions to help find out what the children can recall from previous learning and give a clear starting point. It helps to form a focus on important and useful vocabulary that is used within units. This is one of our key drivers for our curriculum: language rich. Misconceptions are addressed through the use of concept cartoons and a range of activities such as 'odd one out' and children's understanding is assessed through just checks and their final response to their big question. Activities are effectively differentiated so that all children have an appropriate level of support and challenge. Science is taught throughout school for up to two hours per week. Our Science Dictionaries enable children and teachers to build on previous vocabulary and add new, and this goes with them as they continue through school. Recaps of units previously taught are now added in throughout the year to ensure that when a unit isn't taught for several years, the children can still recall it. Children complete meaningful investigations and hands-on activities while gaining the scientific knowledge for each unit. Other opportunities are also taken advantage of, making links to other areas of our curriculum, science trips (Botanical Gardens) as well as our everyday lives. Use of STEM sheds and our STEM ambassadors encourages children to take their learning outside at play and encourages them to develop their skills independently.

Impact:

- Children will become resilient, independent and curious scientists who ask questions and find things out for themselves.
- Children who feel confident in their science knowledge and enquiry skills will be excited about science, making links between what they learn in school to real-life situations and the importance of science in the real world.
- Children will be enthusiastic and motivated scientific learners.
- Children will have an awareness of the full range of scientific careers and pathways available to them and will be keen to pursue STEM subjects at secondary school and have high aspirations.
- Children will be able to build on previous learning and recall previously taught knowledge, skills and vocabulary.
- Children will leave for secondary school equipped with the scientific knowledge and skills needed to succeed in their further education.

Scientific Enquiry and Working Scientifically Skills:

In line with the National Curriculum, pupils are taught to 'work scientifically'. Working scientifically skills are taught throughout all of our science lessons, through a range of scientific enquiries, including: comparative / fair testing, research, observation over time, pattern seeking, identifying, grouping and classifying, problem solving.

To support the well-structured and progressive curriculum, we make use of a range of engaging resources such as those provided by Science, Technology, Engineering and Mathematics (STEM). In order to encourage an investigative approach, the school has a store of equipment to allow investigations, observations and measurements. Children also have the opportunity to develop these skills outside at playtimes, accessing the STEM sheds which are monitored by our STEM ambassadors.

Working Scientifically Skills				
	EYFS	KS1	LKS2	UKS2
Plan	show curiosity and ask questions choose the resources they need for their chosen activities and say when they do or don't need help	ask simple questions and recognising that they can be answered in different ways	ask relevant questions and using different types of scientific enquiries to answer them set up simple practical enquiries, comparative and fair tests	plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Do	know about similarities and differences in relation to places, objects, materials and living things make observations of animals and plants explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. select and use technology for particular purposes	observe closely, using simple equipment perform simple tests identify and classify	make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers	take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Record	represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories They could be drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets	gather and record data to help in answering questions.	gather, record, classify and present data in a variety of ways to help in answering questions record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
Review	talk about the features of their own immediate environment and how environments might vary from one another explain why some things occur and talk about changes use their observations to help them to answer their questions talk about what they are doing and have found out	use their observations and ideas to suggest answers to questions	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	use test results to make predictions to set up further comparative and fair tests report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations identify scientific evidence that has been used to support or refute ideas or arguments
The working scientifically vocabulary identified below should be taught through the topics in each year-group during practical work or scientific enquiry.				

Vocabulary	<p>look closely, observe, watch, touch, feel, smell, listen, same, different, compare, ask questions, record, sort, group</p>	<p>observe, changes, patterns, grouping, sorting, compare, same, different, identify (name), measure, data, record results, drawing, picture, table, tally chart, present, pictogram, block chart, Venn diagram, ask questions, test, investigate, explore, equipment, resources, magnifying glass, hand lens, ruler, tape measure, metre stick, pipette, syringe, spoon, teaspoon, answer questions, interpret results, scientific enquiry, pattern seeking, comparative testing, observing over time, classifying, researching using secondary sources</p>	<p>practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve</p>	<p>variables, independent variable, dependent variable, control variable, evidence, justify, argument (science), causal relationship, accuracy, precision, scatter graphs, bar graphs, line graphs, force meter</p>
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Progression of Science Knowledge and Vocabulary

This document shows the progression of knowledge for each unit of work as well as the vocabulary for each unit. The vocabulary included for Nursery and Reception are words that children should be exposed to. They should use some correctly in a scientific context. The vocabulary included from Year 1 onwards are the words that children should know and use correctly in a scientific context. This is the vocabulary which we display in our books, working walls and in our science dictionary. They should be able to define the specialist scientific vocabulary included. Where topics are noted in red, this is where linked vocabulary may be. When starting new units with our classes, the progression document is referred to allowing us to see prior vocabulary and knowledge, as well as future prior vocabulary and knowledge. This helps to inform our planning. Our science dictionaries can be referred back to as memory joggers for the children.

PLANTS								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE	Grow plants.		Name common plants and describe the basic structure of flowering plants, including deciduous and evergreen. • 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.		
VOCABULARY	plant, leaf, stem, branch, root, bark, flower, petal, seed, berry, fruit, vegetable, bulb, plant, hole, dig, water, weed, grow, shoot, die, dead, soil, names of plants they grow	See Living things and their habitats)	leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden and wild flowering plants in the local area	light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling Also See Living things and their habitats)		photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport	See Living things and their habitats)	See Living things and their habitats

ANIMALS INCLUDING HUMANS								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE	<p>Learn about the life cycles of animals Compare adult animals to their babies</p> <p>Observe how baby animals change over time</p> <p>Learn about the life cycles of humans</p> <p>Learn about how to take care of themselves Learn about their senses</p>	<p>Name and describe animals that live in different habitats. Describe different habitats</p> <p>Describe people who are familiar to them</p> <p>Learn about how to take care of themselves</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</p>	<p>Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>			<p>Describe the changes as humans develop from birth to old age.</p>
VOCABULARY	<p>egg, chick, bird, caterpillar, cocoon, chrysalis, butterfly, frog spawn, tadpole, froglet, frog, grow, change, die, names of animals and their young, fur, feathers, scales, tail, wings, beak, claws, paws, hooves, swim, walk, run, jump, fly, patterns, spots, stripes, grow, change, baby, toddler, child, adult, old person, smell, taste, touch, feel, hear, see, blind, deaf</p>	<ul style="list-style-type: none"> names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice, hair (e.g. black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (e.g. blue, brown, green, grey), skin (e.g. black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman 	<p>head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, names of animals experienced first-hand from each vertebrate group, parts of the human body, senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ears, tongue</p>	<p>offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/chicken, kitten/cat, caterpillar/butterfly), survive, survival, water, food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetables, bread, rice, pasta, dairy</p> <p>See Living things and their habitats</p>	<p>nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spinedigestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, incisor, canine, molar, premolar, herbivore, carnivore, omnivore, producer, predator, prey</p>			<p>puberty, the vocabulary to describe sexual characteristics in line with the school's RSE policy</p> <p>See Living things and their habitats</p>

LIVING THINGS AND THEIR HABITATS / EVOLUTION AND INHERITANCE

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE	Explore the surrounding natural environment · Explore natural objects from the surrounding environment	Explore the surrounding natural environment · Explore natural objects from the surrounding environment		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, and identify and name different sources of food .		Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local environment. Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the differences in the lifecycles 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
								Evolution and inheritance Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
KNOWLEDGE	natural, plant, animal, leaves, seeds, conkers, acorns, twigs, bark, shells, feathers, pebbles, stones, same, different, pattern See Plants	plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment (e.g. beach, forest)	See plants, Animals including Humans and Seasonal Changes	living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, See Plants and Animals Including Humans	See Plants	classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate See Animals Including humans	life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, cuttings	vertebrates, fish, amphibians, reptiles, birds, mammals, warm-blooded, cold-blooded, invertebrates, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers offspring, sexual reproduction, vary, characteristics, adapted, inherited, species, evolve, evolution

MATERIALS								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE	Explore a range of materials · Shape and join materials · Combine and mix ingredients · Change materials by heating and cooling, including cooking	Explore a range of materials, including natural materials · Make objects from different materials, including natural materials · Observe, measure and record how materials change when heated and cooled · Compare how materials change over time and in different conditions	<u>Everyday Materials</u> 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.	<u>Uses of Everyday Materials</u> 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.	<u>Rocks and Soils</u> Rocks and Soils Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within a rock. Recognise that soils are made from rocks and organic matter <u>States of Matter</u> Compare and group materials together, according to whether they are solids, liquids or gases (states of matter) 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 (States of matter) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (states of matter)		<u>Properties and Changes of Materials</u> 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 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 this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	
	VOCABULARY	mix, stir, cook, hot, oven, microwave, change, burn, melt, hard, runny, set, freeze, freezer, cold, blended, hard, soft, bendy, stiff, wobbly, wood, plastic, paper, card, fabric	ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back	object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	opaque, transparent, translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay) solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation, temperature, water cycle <u>See Electricity</u>		thermal insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material

LIGHT AND SOUND								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE	<p>Light Explore light sources · Shine light on or through different materials</p> <p>Sound Listen to sounds · Make sounds</p>	<p>Light Explore shadows · Explore rainbows</p> <p>Sound Listen to sounds outside and identify the source · Make sounds</p>			<p>Light 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 our eyes. Recognise that shadows are formed when the light source is blocked by a solid object. Find patterns in the way the size of the shadows change</p>			
					<p>Sound To identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between 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 sound gets fainter as the distance from the sound source increases.</p>			
VOCABULARY	<p>light, torch, bulb, lamp, spotlight, shiny, bright, brighter, brightest, Sun, shine, glow, mirror</p> <p>-----</p> <p>sound, noise, loud, quiet, high, low, music, bang, blow, pluck, soft, hard, fast, slow, names of instruments</p>	<p>Sun, sunny, light, shadow, shady, clouds, torch, see-through, not see-through, source, light source</p> <p>-----</p> <p>sound, noise, listen, hear, music, voices, bird song, traffic, sirens, thunder, high, low, loud, quiet, soft, volume, crackle, thunder, hum, buzz, roar</p>	<p>See Animals Including Humans and Materials</p>	<p>See Everyday Materials</p>	<p>light, light source, dark, absence of light, surface, shadow, reflect, mirror, Sun, sunlight, dangerous</p>			
					<p>sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, quiet, loud, insulation</p>			

FORCES								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE	Feel forces · Explore how things work · Explore how objects/materials are affected by forces	Explore how to change how things work · Explore how the wind can move objects · Explore how objects move in water				<p>Magnets</p> <p>Compare how things move on different surfaces</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>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.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>Forces</p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	
VOCABULARY	object, float, sink, water, up, down, top, bottom, push, pull, magnet, spring, squash, bend, twist, stretch, turn, spin, smooth, rough, fast, slow	float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow, bounce		See Uses of Everyday Materials	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	

SEASONAL CHANGES and THE EARTH AND SPACE								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE		<p>Play and explore outside in all seasons and in different weather · Observe living things throughout the year</p> <p>Learn about the Earth, Sun, Moon, planets and stars · Learn about space travel</p>	<p>Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.</p>				<p>Earth and Space Describe the movement of the Earth and other planets, relative to the sun in the solar system.</p> <p>Describe the movement of the moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Use Earth rotation to explain day and night due to the apparent movement of the sun across the sky.</p>	
	<p>See Plants and Animals including Humans</p>	<p>spring, summer, autumn, winter, seasons, sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, windy, rainbow, animals, young, plants, flowers</p>	<p>weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>				<p><u>Solar system:</u> star, planet.</p> <p><u>Names of planets:</u> Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus.</p> <p><u>Shape:</u> spherical bodies, sphere.</p> <p><u>Movement:</u> rotate, axis, orbit, satellite.</p> <p><u>Theories:</u> geocentric model, heliocentric model, astronomer.</p> <p><u>Day length:</u> sunrise, sunset, midday, time zone.</p>	

ELECTRICITY								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4 *Not this year due to previous rolling programme*	Year 5	Year 6
KNOWLEDGE	Identify electrical devices · Use battery-powered devices					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. Recognise some common conductors and insulators, and associate metals with being good conductors.		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.
VOCABULARY	Identify electrical devices · Use battery-powered devices					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. Recognise some common conductors and insulators, and associate metals with being good conductors.		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.