



## Progression of Skills - SCIENCE



### Intent

Our vision in science is to encourage curiosity in children so that they ask questions that fuel explorations and investigations about the universe in which we live. Throughout the school science is a practical, interactive, hands-on subject that develops the skills and processes of scientific enquiry, as well as understanding about the concepts being explored. At Holly Lodge, we provide opportunities for child-led learning across all year groups, which allows children to explore and answer their own questions. The children systematically build a bank of scientific vocabulary which supports their acquisition of scientific knowledge and enables them to effectively describe and explain the concepts about which they are learning.

### Implementation

At Holly Lodge Primary Academy, we teach science through our theme-based curriculum which allows the children to make links between science and the other subjects they are studying. Science is taught using an enquiry approach and the children are encouraged in all key stages to pose and investigate their own scientific questions.

In Reception, we ask the children what they want to find out then give them the resources to try and find the answers through exploration and investigation. In Key Stage 1, the topics are used to generate scientific questions and investigations. The children are encouraged to answer these in different ways by:

Observing closely, using simple equipment

Performing simple tests

Identifying and classifying

Using their observations and ideas to suggest answers to questions

Gathering and recording data to help in answering questions.

In Key Stage 2, the children's scientific knowledge of the world is deepened further by exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments. They also start conducting scientific enquiries by observing changes over time, noticing patterns, grouping and classifying things and carrying out simple comparative and fair tests.

### Impact

Our science curriculum ensures that children:

- develop a deep and lasting interest in science and are motivated to study it further
- are prepared for life in an increasingly scientific and technological world
- show concern about, and appreciate, our environment
- apply scientific vocabulary to describe and explain the world around them
- are able to make links to the broader curriculum and their life experience
- are confident to lead their own learning, carrying out and planning investigations to provide answers to their own questions.



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### Working Scientifically - Asking Questions

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Show curiosity about objects, events and people <b>Playing &amp; Exploring</b></p> <p>Questions why things happen <b>Speaking: 30-50 months</b></p> <p>Engage in open-ended activity <b>Playing &amp; Exploring</b></p> <p>Take a risk, engage in new experiences and learn by trial and error <b>Playing &amp; Exploring</b></p>	<p>Explore the world around them and raise their own simple questions</p> <p>Experience different types of science enquiries, including practical activities</p> <p>Begin to recognise different ways in which they might answer scientific questions</p>		<p>Raise their own relevant questions about the world around them</p> <p>Should be given a range of scientific experiences including different types of science enquiries to answer questions</p> <p>Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions</p>		<p>Use their science experiences to explore ideas and raise different kinds of questions</p> <p>Talk about how scientific ideas have developed over time</p> <p>Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions</p>	



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### Working Scientifically - Observing

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Make links and notice patterns in their experience <i>Creating &amp; Thinking Critically</i></p> <p>Develop ideas of grouping, sequences, cause and effect <i>Creating &amp; Thinking Critically</i></p> <p>Know about similarities and differences in relation to places, objects, materials and living things <i>ELG: The World</i></p> <p>Closely observes what animals, people and vehicles do <i>The World 8-20 months</i></p> <p>Use senses to explore the world around them <i>Playing &amp; Exploring</i></p>	<p>With guidance, they should begin to notice patterns and relationships</p> <p>Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)</p> <p>Observe closely using simple equipment</p> <p>With help, observe changes over time</p>	<p>Make systematic and careful observations</p> <p>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</p> <p>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them</p> <p>Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately</p> <p>Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data</p>	<p>Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Make a series of observations and measurements and vary one factor while keeping others the same.</p> <p>Record observations, to support comparisons and measurements using tables and bar charts and begin to plot points to form simple graphs.</p>			



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### Working Scientifically - Investigate

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Engage in open-ended activity <i>Playing &amp; Exploring</i></p> <p>Take a risk, engage in new experiences and learn by trial and error <i>Playing &amp; Exploring</i></p> <p>Find ways to solve problems / find new ways to do things / test their ideas <i>Creating &amp; Thinking Critically</i></p> <p>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world <i>The World: 30-50 months</i></p> <p>Choose the resources they need for their chosen activities <i>ELG: Self Confidence &amp; Self Awareness</i></p> <p>Handle equipment and tools effectively <i>ELG: Moving &amp; Handling</i></p>	<p>Experience different types of science enquiries, including practical activities</p> <p>Begin to recognise different ways in which they might answer scientific questions</p> <p>Carry out simple tests</p> <p>Follow instructions safely</p> <p>Ask people questions and use simple secondary sources to find answers</p> <p>Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data</p>	<p>Set up simple practical enquiries, comparative and fair test</p> <p>Recognise when a simple fair test is necessary and help to decide how to set it up</p> <p>Talk about criteria for grouping, sorting and classifying; and use simple keys</p> <p>Recognise when and how secondary sources (books, internet) might help them to answer questions that cannot be answered through practical investigations</p> <p>Carry out fair tests with some help, recognising and explaining what makes them fair.</p>	<p>Decide on an appropriate approach, including using a fair test to answer a question.</p> <p>Select suitable equipment and information from that provided.</p> <p>Select and use methods that are adequate for the task.</p> <p>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</p> <p>Following instructions, taking action to control obvious risks to themselves.</p> <p>Select and use methods to obtain data systematically.</p> <p>Recognise hazard symbols and make, and act on, simple suggestions to control obvious risks to themselves and others.</p>			



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### Working Scientifically - Evaluate and Explain

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Create simple representations of events, people and objects <b>Being Imaginative: 40-60+ months</b></p> <p>Answer how and why questions about their experiences <b>ELG: Understanding</b></p> <p>Make observations of animals and plants and explain why some things occur, and talk about changes <b>ELG: The World</b></p> <p>Develop their own narratives and explanations by connecting ideas or events <b>ELG: Speaking</b></p> <p>Builds up vocabulary that reflects the breadth of their experience <b>Understanding: 30-50 months</b></p>	<p>Record simple data.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Talk about what they have found out and how they found it out.</p> <p>Use drawings and charts to show their findings.</p> <p>With guidance, they can use scientific language to explain their findings.</p> <p>Say whether what happened was what the expected.</p>	<p>With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.</p> <p>Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done.</p> <p>Suggest improvements to their work.</p>	<p>Communicate conclusions using appropriate scientific language.</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments</p> <p>Interpret data containing positive and negative numbers.</p> <p>Begin to relate conclusions to patterns in data, including graphs, and to scientific knowledge and understanding.</p> <p>Analyse findings to draw scientific conclusions that are consistent with the evidence.</p> <p>Communicate these using scientific and mathematical conventions and terminology.</p> <p>Suggest improvements to work, giving reasons.</p> <p>Evaluate their working methods to make practical suggestions for improvements.</p> <p>Reflect on their results and consider whether they are valid.</p>			

#### Working Scientifically vocabulary

Key Vocab	Key Vocab	Key Vocab	Key Vocab	Key Vocab	Key Vocab
<p><b>Child Vocabulary:</b> questions, answers, equipment, gather, measure, record, results, sort, group, test, explore, observe, compare, describe, collect, similar/similarities, different/differences, beaker, egg timers, ruler, tape measure, metre stick.</p> <p><b>Adult Vocabulary:</b> collect evidence, data, table, chart, classify, identify, observe changes of time, notice patterns, notice relationships, secondary sources, hand lenses, communicate</p>	<p><b>Vocabulary as Yr 1 plus:</b> chart, table pictogram, tally chart block diagram/graph order, notice patterns link ideas, stop watch, pipette, syringe use comparatives - hotter/cooler, older/younger etc</p>	<p><b>Vocabulary as KS1 plus:</b> scientific enquiry, similarities/differences observations, keys, bar charts, thermometer, data logger, changes over time, identify, classify evidence, conclusion</p>	<p><b>Vocabulary as previous plus:</b> increase, decrease, accurate, appearance</p> <p><b>Adult Vocabulary:</b> notice relationships, systematic, disprove</p>	<p><b>Vocabulary as previous plus:</b> opinion/fact, variables, independent variable, dependent variable, controlled variable, precision, classification keys, scatter graphs, line graphs</p> <p><b>Adult Vocabulary:</b></p>	<p><b>Vocabulary as previous plus:</b> systematic, causal relationships, refute, degree of trust, opinion/fact, confidently name scientific enquiry types</p>



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	<p><b>Adult Vocabulary:</b> gather, evidence data, venn diagram identify, classify, rank notice relationships</p>	<p>prediction, comparative tests, fair test, present, data, results, support/not support <b>Adult Vocabulary:</b> systematic, accurate disprove, notice relationships</p>		<p>notice relationships support, degree of trust, causal relationships, refute</p>	
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Seasonal Changes						
Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Look closely at similarities, differences, patterns and change - in relation to the four seasons and when different weather occurs	Observe changes across the 4 seasons  Observe and describe weather associated with the seasons and how day length varies  <b>Note:</b> Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.					
<u>Key Vocab</u> Weather (sunny, rainy, windy, snowy etc.), seasons (Winter, Summer, Spring, Autumn), sun, sunrise, sunset, day length		<u>Key Vocab</u>				



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### Animals Including Humans

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>They make observations of animals and plants and explain why some things occur, and talk about changes</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>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</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>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</p> <p>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</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>Describe the changes as humans develop to old age.</p> <p style="color: blue;">This needs to be taught alongside PSHE</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>
<p style="text-align: center;"><u>Key Vocab</u></p> <p>Head, body, eyes, ears, mouth, teeth Names of animals experienced first-hand Parts of the body including those linked to PSHE teaching Senses, touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>As for Reception plus: leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Animals from each vertebrate group.</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Offspring, reproduction, growth, child, young/old stages (eg - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples - meat, fish, vegetables, bread, rice, pasta)</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Puberty - the vocabulary to describe sexual characteristics</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle</p>



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### Materials

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Children know about similarities and differences in relation to places, objects, materials and living things</p> <p>They know the properties of some materials and can suggest some of the purposes they are used for.</p> <p>Waterproof -not waterproof</p>	<p><b>Materials</b> Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p>	<p><b>Uses of Everyday Materials</b> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p><b>Rocks</b> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter</p>	<p><b>States of Matter</b> Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p><b>Properties and changes of materials</b> 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</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p>	



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					<p>Explain that some change result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</p>	
<p style="text-align: center;"><u>Key Vocab</u></p> <p>Waterproof, non-waterproof</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>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</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Name an increased range of materials from year 1 Properties of materials - as for year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/puling, twist/twisting, squash/squashing. Bend/bending, stretch/stretching</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle</p>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material</p>	<p style="text-align: center;"><u>Key Vocab</u></p>

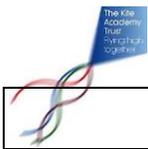


## Progression of Skills - SCIENCE



### Living Things and Their Habitats

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Children know about similarities and differences in relation to places, objects, materials and living things</p> <p>They talk about the features of their own immediate environment and how environments might vary from one another</p>		<p>Explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>Identify that most living things live in habitats to which they are suited and</p> <p>Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain.</p> <p>Identify and name different sources of food</p>		<p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals</p>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p>
<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>		<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>
		<p>Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, names of local habitats e.g. pond, woodland etc., names of</p>		<p>Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate</p>	<p>Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings</p>	<p>Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and nonflowering</p>



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		micro-habitats e.g. under logs, in bushes etc				
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### Evolution and Inheritance

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Lifecycles</p> <p>Dinosaurs/Fossils</p> <p><b>ELG - similarities and differences</b></p>						<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>
<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils</p>



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### Forces and Magnets

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Developing ideas of grouping, sequences, cause and effect in relation to movement i.e toys, cars, rough surfaces</p> <p>They know the properties of some materials and can suggest some of the purposes they are used for.</p> <p>They are familiar with basic scientific concepts such as floating, sinking, experimentation.</p>			<p>Compare how things move on different surfaces</p> <p>Notice that some forces need contact between 2 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 2 poles</p> <p>Predict whether 2 magnets will attract or repel each other, depending on which poles are facing</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>	
<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel,</p>	<u>Key Vocab</u>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears</p>	<u>Key Vocab</u>



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			magnetic material, metal, iron, steel, poles, north pole, south pole			
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### Earth and Space

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					<p>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 the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>	
<u>Key Vocab</u>	<u>Key Vocab</u> Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune) spherical, solar system, rotates, star, orbit, planets	<u>Key Vocab</u>				



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Sound						
Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				<p>Identify how sounds are made, associating some of them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases</p>		
<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u> Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation	<u>Key Vocab</u>	<u>Key Vocab</u>

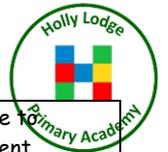


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### Electricity

Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				<p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>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</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p>		<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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</p> <p>Use recognised symbols when representing a simple circuit in a diagram</p>
<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u> Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short	<u>Key Vocab</u>	<u>Key Vocab</u> Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage NB Children do not need to understand what voltage is but will use



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				<p>circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</p> <p>N.B. Children in year 4 do not need to use standard symbols as this is taught in year 6</p>		<p>volts and voltage to describe different batteries. The words cells and batteries are now used interchangeably.</p>
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<b>Plants</b>						
Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>They make observations of animals and plants</p> <p>Explain why some things occur, and talk about changes.</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>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.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>			
<u>Key Vocab</u>	<p><u>Key Vocab</u></p> <p>Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud.</p> <p>Names of trees in the local area. Names of garden and wild flowering plants in the local area.</p>	<p><u>Key Vocab</u></p> <p>As for year 1 plus - light, shade, sun, warm, cool, water, grow, healthy.</p>	<p><u>Key Vocab</u></p> <p>Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal - wind dispersal, animal dispersal, water dispersal.</p>	<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>



## Progression of Skills - SCIENCE



<b>Light</b>						
Rec	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<p>Recognise that they need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Find patterns in the way that the size of shadows change</p>			<p>Recognise that light appears to travel in straight lines</p> <p>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</p> <p>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</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>
<u>Key Vocab</u>	<u>Key Vocab</u>	<u>Key Vocab</u>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous</p>	<u>Key Vocab</u>	<u>Key Vocab</u>	<p style="text-align: center;"><u>Key Vocab</u></p> <p>As for year 3 plus straight lines, light rays</p>