

# Subject Overview Skegness Infant and Junior Academies

## Subject – Science



**Our Curriculum Partners for Science**



**Knowing More and Remembering More**

The first lesson for each unit of work is used to review prior learning from previous units, ready for their development in the new one. Opportunities for information recall are included in science lessons to ensure knowledge is transferred into long-term memory. These activities may be in the form of labelling diagrams, discussing a concept cartoons or knowledge organisers, or low stakes quizzes that focus on prior learning. Additional opportunities on interactive programmes, such as Bedrock and Kahoot, enable children to revisit key topic vocabulary.

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	
		Knowing me, knowing you	Tell me a Tale	Where shall we go?	Footprints	The Great Outdoors	What if...?	
Nursery		<p>Use all their senses in hands-on exploration of natural materials.                      Talk about what they see, using a wide vocabulary                      Explore collections of materials                      Explore collections of materials, identifying with similar and/or different properties                      Explore how things work                      Explore and talk about forces (push and pull)                      Can identify what you need to wear for each season and why                      Understands that the weather changes and that in different countries you have different weather                      Understand the difference between plants and animals                      Plants seeds and ares for growing plants with support                      Show an awareness of the life cycle of a butterfly</p>						
Reception		<p>Explore the natural world around them, describing what they see, hear and feel whilst outside                      Talks about differences between materials and changes they notice                      Explores the natural world around them, making observations and drawing pictures of animals and plants                      Explore and talk about forces (push and pull)                      Explores non-contact forces (gravity and magnetism)                      Can identify what you need to wear for each season and why                      Understand the effect of changing seasons on the natural world around, discussing when and how things grow                      Can say what plants need to survive                      Can talk about different life cycles                      Understands the need to respect and care for the natural environment and all living things</p>						
		Time Travellers	Above and beyond	Telling Tales	A World Apart	Blue Planet	This is Me	
Year 1	Disciplinary vocabulary:	<p>Topic Overview Seasonal Change</p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Understand there are four seasons.</li> <li>Understand the changes that take place in autumn.</li> <li>Understand the changes that take place in winter.</li> </ul>	<p>Topic Overview Exploring everyday materials</p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Identify and name a variety of everyday materials.</li> <li>Distinguish between an object and the</li> </ul>	<p>Topic Overview Animals including humans, All about animals</p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Discover animal families.</li> <li>Learn about the differences between mammals and birds.</li> </ul>	<p>Topic Overview Plants</p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Understand that seeds grow into plants.</li> <li>Identify the basic parts of a plant and tree.</li> </ul>	<p>Topic Overview Exploring everyday materials 2</p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Build a structure strong enough to withstand wind.</li> <li>Build a waterproof structure.</li> </ul>	<p>Topic Overview Animals including humans, All about me</p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Discover the basic parts of the human body.</li> <li>Learn about your eyes and sight.</li> <li>Learn about your ears and hearing.</li> </ul>	

		<ul style="list-style-type: none"> <li>Understand the changes that take place in spring.</li> <li>Understand the changes that take place in summer.</li> <li>Investigate how you can measure rainfall.</li> </ul> <p>Key vocabulary Season, hibernate, temperature, weather</p> <p>Key Scientists: George James Symons</p> <p>Key Scientific Experiments:  Rain in a jar</p>	<p>material it is made from.</p> <ul style="list-style-type: none"> <li>Describe the properties of everyday materials.</li> <li>Identify objects that are natural and those that are manmade.</li> <li>Predict and identify if an object will float or sink.</li> <li>Explore which materials are best for different objects.</li> </ul> <p>Key vocabulary Material, property, opaque, transparent</p> <p>Key Scientific Experiments: Which materials absorb liquid? (link to STAR vocabulary)</p>	<ul style="list-style-type: none"> <li>Learn about the differences between amphibians, reptiles and fish.</li> <li>Discover the type of food living things eat.</li> <li>Explore the differences between wild animals and pets.</li> <li>Explain the characteristics of an animal.</li> </ul> <p>Key vocabulary Warm blooded, cold blooded, herbivore, omnivore, carnivore</p> <p>Key Scientists: Carl Linnaeus</p>	<ul style="list-style-type: none"> <li>Understand that different plants can grow in the same environment.</li> <li>Know the differences between deciduous and evergreen trees.</li> <li>Know that fruit trees and vegetables are varieties of plants.</li> <li>Record the growth of a plant.</li> </ul> <p>Key vocabulary Deciduous, evergreen, fruit, vegetable</p> <p>Key Scientists: Tim Smit</p> <p>Key Scientific Experiments: Bean experiment</p> <p>Key Enrichment Experiences: Science Week</p>	<ul style="list-style-type: none"> <li>Understand the properties of glass and its uses.</li> <li>Understand that materials are used to create a variety of furniture.</li> <li>Explore a variety of fabrics and understand their different properties.</li> <li>Explain the uses of materials and why they are suitable.</li> </ul> <p>Key vocabulary Strong, suitable, properties, waterproof</p>	<ul style="list-style-type: none"> <li>Explore the tongue and taste.</li> <li>Explore your sense of touch.</li> <li>Discover how your nose smells.</li> </ul> <p>Key vocabulary Body, brain, sound, taste</p> <p>Key Scientists: Elizabeth Garrett Anderson</p>
<b>Year 2</b>		<p>Topic overview <b>Uses of everyday materials</b></p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Identify different material and their uses</li> <li>Understand how to select the right materials to build a bridge</li> <li>Explore and test the stretchiness of materials</li> <li>Understand materials can change their shape by twisting, bending, squashing or stretching</li> <li>Learn about Charles Macintosh and explore how materials are suitable for different purposes</li> <li>Discover which materials change shape when making a road with John McAdam</li> </ul> <p>Key vocabulary: Material, property, stretchy, elastic, force, bend</p>	<p>Topic overview <b>Animals including humans- Growth</b></p> <p>Key Criteria</p> <ul style="list-style-type: none"> <li>Describe the needs of animals for survival</li> <li>Describe the needs of humans for survival</li> <li>Explore the importance of eating the right food</li> <li>Describe what a healthy balanced diet looks like</li> <li>Investigate the impact of exercise on our bodies</li> <li>Investigate the importance of hygiene</li> </ul> <p>Key vocabulary:</p>	<p>Topic overview <b>Plants</b></p> <p>Key criteria</p> <ul style="list-style-type: none"> <li>Know the difference between seeds and bulbs.</li> <li>Design an experiment to find out what plants need to grow.</li> <li>Describe what plants need to grow and stay healthy.</li> <li>Describe the life cycle of a plant.</li> <li>Observe and record the growth of plants over time.</li> <li>Understand that plants adapt to suit their environment.</li> </ul> <p>Key vocabulary:</p>	<p>Topic overview <b>Animals including humans- Life cycles</b></p> <p>Key criteria</p> <ul style="list-style-type: none"> <li>Learn how to order the stages of the human life cycle.</li> <li>Describe the stages of life from adulthood to old age.</li> <li>Learn how to match offspring to their parent.</li> <li>Explore the life cycle of a chicken.</li> <li>Describe the life cycle of a butterfly.</li> <li>Explore the life cycle of a frog.</li> </ul> <p>Key vocabulary:</p>	<p>Topic overview <b>Living things and their habitats</b></p> <p>Key criteria</p> <ul style="list-style-type: none"> <li>Compare the differences between things that are living, dead and things that have never been alive.</li> <li>Identify and name a variety of plants and animals in a microhabitat.</li> <li>Design a suitable microhabitat where living things could survive.</li> <li>Find out what animals eat to survive in their habitats.</li> <li>Understand food chains.</li> </ul>	<p>Topic overview <b>Living things and their habitats Habitats around the world</b></p> <p>Key criteria</p> <ul style="list-style-type: none"> <li>Learn about habitats.</li> <li>Appreciate that environments are constantly changing.</li> <li>Explore the rainforest and its problems.</li> <li>Describe life in the ocean.</li> <li>Discover the Arctic and the Antarctic habitat.</li> <li>Create a model of a habitat.</li> </ul> <p>Key vocabulary: Rainforest, ocean, desert, arctic, ecosystem, endangered</p> <p>Key Scientists: Rachel Carson</p>

		<p>Key Scientists: Charles Macintosh</p> <p>Key Scientific Experiments: Which materials are best for making an umbrella for the children in Quest? (English link)</p>	<p>Nutrition, exercise, hygiene, carbohydrate, protein</p> <p>Key Scientists: Louis Pasteur</p> <p>Key Scientific Experiments: What impact does exercise have on our bodies?</p> <p>Key Enrichment Experiences: Visit from Morrisons supermarket about healthy food and a balanced diet.</p>	<p>Photosynthesis, oxygen, carbon dioxide, germination, pollination</p> <p>Key Scientists: Jane Colden</p> <p>Key Scientific Experiments: Designing an experiment to find out what plants need to grow.</p>	<p>Life cycle, reproduction, metamorphosis, transformation, offspring, foetus</p> <p>Key Scientists: Maria Sibylla Merian</p> <p>Key Enrichment Experiences: Science Week</p>	<ul style="list-style-type: none"> <li>Understand the journey food makes from the farm to the supermarket.</li> </ul> <p>Key vocabulary: Microhabitat, producer, consumer, survive, reproduce, respire</p> <p>Key Scientists: Jane Goodall</p> <p>Key Scientific Experiments: Making a microhabitat</p> <p>Key Enrichment Experiences: Visit to Woodside Wildlife Park</p>	
<p><b>Year 3</b></p>		<p>Topic overview <b>Rocks-fossils</b></p> <ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> <li>Recognise that soils are made from rocks and organic matter.</li> </ul> <p><b>Key Scientists:</b> Mary Anning</p> <p><b>Key Scientific Experiments:</b> How hard/soft is this rock? Water bottle experiment</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> sedimentary, metamorphic, igneous, erosion, transportation</p>	<p>Topic overview <b>Light</b></p> <ul style="list-style-type: none"> <li>Recognise that they need light in order to see things, and that dark is the absence of light.</li> <li>Notice that light is reflected from surfaces.</li> <li>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</li> <li>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</li> <li>Find patterns in the way that the size of shadows change.</li> </ul> <p><b>Key Scientists:</b> Albert Einstein</p> <p><b>Key Scientific Experiments:</b> Shadow hunt-Making shadows Experimenting with shadows and distance</p> <p><b>Key Enrichment Experiences:</b></p>	<p>Topic overview <b>Forces-magnets</b></p> <ul style="list-style-type: none"> <li>Compare how things move on different surfaces.</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>Observe how magnets attract or repel each other and attract some materials and not others.</li> <li>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.</li> <li>Describe magnets as having two poles.</li> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul> <p><b>Key Scientists:</b> William Gilbert</p> <p><b>Key Scientific Experiments:</b></p>	<p>Topic overview <b>Forces-magnets</b></p> <ul style="list-style-type: none"> <li>Compare how things move on different surfaces.</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>Observe how magnets attract or repel each other and attract some materials and not others.</li> <li>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.</li> <li>Describe magnets as having two poles.</li> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul> <p><b>Key Scientists:</b> William Gilbert</p> <p><b>Key Scientific Experiments:</b></p>	<p>Topic overview <b>Plants</b></p> <ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; and flowers.</li> <li>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.</li> <li>Investigate the way in which water is transported within plants.</li> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul> <p><b>Key Scientists:</b> Sir Joseph Banks</p> <p><b>Key Scientific Experiments:</b> Crime scene-plant on the floor Investigate what a plant needs to survive.</p>	<p>Topic overview <b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul> <p><b>Key Scientists:</b> Diane France</p> <p><b>Key Scientific Experiments:</b> Food groups- sorting food into the main food groups- understanding the purpose of each food group. Investigating nutritional information to achieve a balanced diet.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> Nutrition, diet, vitamins, minerals, fats, proteins, carbohydrates, healthy, energy</p>

			<p><b>Key vocabulary:</b> light source, pupil, retina, opaque, translucent, transparent</p>	<p>Investigate which objects are magnetic.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> attract, repel, magnetic, magnetic field, forces, friction, surface</p>	<p>Investigate how things move on different surfaces.</p> <p><b>Key Enrichment Experiences:</b> Science Week-Sublime science</p> <p><b>Key vocabulary:</b> attract, repel, magnetic, magnetic field, forces, friction, surface</p>	<p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> pollination, fertilisation, germination, dispersal</p>	
<b>Year 4</b>	<p>Topic overview <b>States of matter-solids, liquids and gases</b></p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul> <p><b>Key Scientists:</b> Alfred Barnhard Nobel</p> <p><b>Key Scientific Experiments:</b> Does temperature have an impact on the speed of evaporation even if there is the same amount of water? Inside water cycle.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> Solid, liquid, gas, water vapour, condensation, precipitation, evaporation, collection</p>	<p>Topic overview <b>Electricity</b></p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul> <p><b>Key Scientists:</b> Benjamin Franklin Alessandro Volta</p> <p><b>Key Scientific Experiments:</b> Investigate different circuits. Making circuits and testing if materials conduct electricity. Testing if more batteries have an impact on making a circuit brighter using data loggers.</p> <p><b>Key Enrichment Experiences:</b></p>	<p>Topic overview <b>Sound</b></p> <ul style="list-style-type: none"> <li>Identify how sounds are made, associating some of them with something vibrating.</li> <li>Recognise that vibrations from sounds travel through a medium to the ear.</li> <li>Find patterns between the pitch of a sound and features of the object that produced it.</li> <li>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> <li>Recognise that sounds get fainter as the distance from the sound source increases.</li> </ul> <p><b>Key Scientists:</b> Alexander Graham Bell</p> <p><b>Key Scientific Experiments:</b> Panpipes made from straws and shorter the straw the lower the pitch. Make telephones. Investigate using tuning forks to see the vibrations.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> vibrations, source, sound wave, amplitude, particles, distance, soundproof, eardrum, vacuum</p>	<p>Topic overview <b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>Identify the different types of teeth in humans and their simple functions.</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul> <p><b>Key inventor:</b> Washington &amp; Lucius Sheffield</p> <p><b>Key Scientific Experiments:</b></p> <p><b>Key Enrichment Experiences:</b> Science Week-Sublime science</p> <p><b>Key vocabulary:</b> producer, consumer, predator, prey, herbivore, carnivore, omnivore</p>	<p>Topic overview <b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul> <p><b>Key Scientists:</b> Carl Linnaeus</p> <p><b>Key Scientific Experiments:</b> MRS Gren experiment with plants. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> movement, respiration, sensitivity, growth, reproduction, excrement, nutrition, metamorphosis</p>	<p>Topic overview <b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul> <p><b>Key Scientists:</b> Rachel Carson</p> <p><b>Key Scientific Experiments:</b> Pond dipping. An experiment to test if pesticides can pollute our oceans and harm animals.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> invertebrates, vertebrates,</p>	

			<p><b>Key vocabulary:</b> series circuit, conductor, components, insulator</p>				
<p><b>Year 5</b></p>		<p>Topic overview <b>Forces</b></p> <ul style="list-style-type: none"> <li>· Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> <li>· Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</li> <li>· Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul> <p><b>Key Scientists:</b> Sir Isaac Newton Archimedes</p> <p><b>Key Scientific Experiments:</b> Can you identify the effects of friction, that acts between moving surfaces? (cars) Scientific enquiry into forces (fulcrum) Astrolabe Moon phase clock</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> gravity, gravitational pull, buoyancy, streamlined, air resistance, upthrust</p>	<p>Topic overview <b>Earth and Space</b></p> <ul style="list-style-type: none"> <li>• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</li> <li>• Describe the movement of the Moon relative to the Earth.</li> <li>• Describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.</li> </ul> <p><b>Key Scientists:</b> Copernicus Galileo Valentina Tereshkova Guion Bluford</p> <p><b>Key Scientific Experiments:</b> Order the fruit to show the planets.</p> <p><b>Key Enrichment Experiences:</b> Planetarium</p> <p><b>Key vocabulary:</b> orbit, planets, revolve, sphere, satellite, axis, rotate</p>	<p>Topic overview <b>Properties and changes of materials.</b></p> <ul style="list-style-type: none"> <li>· 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.</li> <li>· Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>· Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</li> <li>· Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>· Demonstrate that dissolving, mixing and changes of state are reversible changes.</li> <li>· Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</li> </ul> <p><b>Key Scientists:</b> Marie Curie</p> <p><b>Key Scientific Experiments:</b> Investigate if different materials will dissolve when</p>	<p>Topic overview <b>Properties and changes of materials.</b></p> <ul style="list-style-type: none"> <li>· 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.</li> <li>· Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>· Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</li> <li>· Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>· Demonstrate that dissolving, mixing and changes of state are reversible changes.</li> <li>· Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</li> </ul> <p><b>Key Scientists:</b> Marie Curie</p> <p><b>Key Scientific Experiments:</b> Balloon and bottle experiment to show gas can</p>	<p>Topic overview <b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>· Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>· Describe the life process of reproduction in some plants and animals.</li> </ul> <p><b>Key Scientists:</b> Charles Darwin Sir David Attenborough Jane Goodall</p> <p><b>Key Scientific Experiments:</b> Observing the growing and movements of caterpillars, as well as the chrysalis stage.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> egg, larva, pupa, nymph, adult</p>	<p>Topic overview <b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>• Describe the changes as humans develop to old age.</li> </ul> <p><b>Key Scientists:</b> Dr Alexa Irene Canady Elizabeth Blackwell</p> <p><b>Key Scientific Experiments:</b> Timeline of human life.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> reproduce, baby, toddler, adolescent, adult</p>

				<p>mixed in water and form a solution. Oozing Oobleck</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> solution, particles, suspensions, reversible, irreversible</p>	<p>be created from a reaction between materials. Decide how mixtures might be separated, including through filtering, sieving and evaporating. Investigate reversible and irreversible.</p> <p><b>Key Enrichment Experiences:</b> Science Week-Sublime science</p> <p><b>Key vocabulary:</b> sieve, filter, evaporate, condense, magnetic</p>		
<b>Year 6</b>	<p>Topic overview <b>Light</b></p> <ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines.</li> <li>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.</li> <li>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.</li> <li>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul> <p><b>Key Scientists:</b> Sir David Brewster</p> <p><b>Key Scientific Experiments:</b> Predict and then measure the width of each shadow and try to find what kind of set-up produces the widest shadows. Investigation-children learn that a periscope is a device made from 2 angled mirrors that enables the user to see around obstacles. Investigate what happens to its shadow when an object is moved towards a light source.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b></p>	<p>Topic overview <b>Electricity</b></p> <ul style="list-style-type: none"> <li>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>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.</li> <li>Use recognised symbols when representing a simple circuit in a diagram.</li> </ul> <p><b>Key Scientists:</b> James Watt Alessandro Volta Benjamin Franklin Thomas Edison</p> <p><b>Key Scientific Experiments:</b> Investigate the effect of changing the number and voltage of cells in an electrical circuit. Create a set of electrical traffic lights.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b></p>	<p>Topic overview <b>Evolution and Inheritance</b></p> <ul style="list-style-type: none"> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. <ul style="list-style-type: none"> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> </ul> </li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul> <p><b>Key Scientists:</b> Charles Darwin</p> <p><b>Key Scientific Experiments:</b> Sticky dogs. Bird beaks investigation. Mr Men inheritance investigation. Switchzoo.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> reproduction, offspring, parents, siblings, characteristics, inheritance,</p>	<p>Topic overview <b>Classification (Living things and their Habitats)</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>Give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p><b>Key Scientists:</b> Carl Linnaeus Evelyn Cheesman</p> <p><b>Key Scientific Experiments:</b> Grouping and classifying into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</p> <p><b>Key Enrichment Experiences:</b> Science Week-Sublime science</p> <p><b>Key vocabulary:</b> amphibian, bacteria, micro-organism, microscope, species</p>	<p>Topic overview <b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Key Scientists:</b> Marie M Daly</p> <p><b>Key Scientific Experiments:</b> Measure heart rates. Blood experiment.</p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> veins, arteries, pulse, clotting, blood vessels, oxygenated blood, deoxygenated blood, capillaries, plasma</p>	<p>Topic overview <b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Key Scientists:</b> Alexander Fleming</p> <p><b>Key Scientific Experiments:</b></p> <p><b>Key Enrichment Experiences:</b></p> <p><b>Key vocabulary:</b> caffeine, nicotine, alcohol, cannabis, cocaine</p>	

		incident ray, reflected ray, refraction, light source.	volts, voltage, circuit, symbol, cell, current, electrons, resistance	adaptation, variation, evolution, evolve			
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