

Abbey Hulton Primary School – Long Term Science Plan

Lower Key Stage 2

Year		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
3	Theme	ANIMALS (inc. Humans)	PLANTS	ROCKS	FORCES and MAGNETS	LIGHT	Scientists and Inventors
	Learning Challenge	<u>Why do humans need to eat?</u>	<u>Why are flowers so bright?</u>				<u>Are scientists really mad?</u>
	Curriculum Objectives	<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>	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - 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 rock. - Recognise that soils are made from rocks and organic matter. 	<ul style="list-style-type: none"> - Compare how things move on different surfaces. - Notice that some forces need contact between two objects, but magnetic forces can act at a distance. - Observe how magnets attract or repel each other and attract some materials and not others. - Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. - Describe magnets as having two poles. - Predict whether two magnets will attract or repel each other, 	<ul style="list-style-type: none"> - Recognise that they need light in order to see things and that dark is the absence of light. - Notice that light is reflected from surfaces. - Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. - Recognise that shadows are formed when the light from a light source is blocked by a solid object. - Find patterns in the way that the size of shadows can change. 	

				depending on which poles are facing.		
Learning Journey	<p>Hook into learning</p> <p>I can explain how living things obtain food and state why animals, including humans, need the right type of nutrients.</p> <p>I can compare and group animals by their diet.</p> <p>I can sort animals based on their skeletons.</p> <p>I can identify and name bones.</p> <p>I can identify and explain the three main functions of a skeleton.</p> <p>I know why we need muscles to move.</p>	<p>Hook into learning</p> <p>I can name the different parts of flowering plants and explain their jobs.</p> <p>I can set up an investigation to find out what plants need to grow well.</p> <p>I can investigate plants record my observations.</p> <p>I can investigate how water is transported in plants.</p> <p>I can name the different parts of a flower and explain their role in pollination and fertilisation.</p> <p>I can understand and order the stages of the life cycle of a flowering plant.</p>	<p>Hook into learning Show a real fossil.</p> <p>I can compare different types of rocks.</p> <p>I can make systematic and careful observations and group rocks based on their properties.</p> <p>I can explain how fossils are formed.</p> <p>I can explain Mary Anning's contribution to palaeontology</p> <p>I can explain how soil is formed.</p> <p>I can look at different samples of soil and present my findings using scientific vocabulary</p>	<p>Hook into learning</p> <p>I can identify the forces acting on objects.</p> <p>I can investigate how a toy car moves over different surfaces.</p> <p>I can sort magnetic and non-magnetic materials.</p> <p>I can investigate the strength of magnets.</p> <p>I can explore magnetic poles.</p> <p>I can observe how magnets attract some materials.</p>	<p>Hook into learning</p> <p>I can recognise that I need light to see things, and that dark is the absence of light.</p> <p>I can investigate which surfaces reflect light.</p> <p>I can use a mirror to reflect light and explain how mirrors work.</p> <p>I know that light from the sun can be dangerous and that there are ways we can protect our eyes.</p> <p>I can investigate which materials block light to form shadows.</p> <p>I can find patterns when investigating how shadows</p>	<p>Hook into learning</p>

						change size.	
	VOCAB	Animal, human, nutrition, nutrients, skeleton, ribs, healthy diet, balanced diet, protection, food, muscles, bones, support, movement, spine, skull, vertebrate/invertebrate.	Root, stem/trunk, leaf/leaves, water, transported/transportation, flower/blossom, grow/growth, pollination, seed formation, seed dispersal, nutrition, air, light/dark, nutrients, structure, function, soil, life cycle, reproduction	Fossils, soils, sedimentary, stone, texture, pebble, magma, metamorphic, hard/soft, grains, crystals, formation, igneous, volcano, Earth, porous, permeable/impermeable	Surfaces, forces, magnet, push/pushing, pull/pulling, magnetic, repel/repulsion, materials, poles, strength, friction, attract, magnetic material, attract/attraction, elastic	Light, dark/darkness, reflect/reflective/reflection, translucent, protect, shadow, light source, mirror, distance, solid object, bright, transparent, opaque	
4	Theme	ANIMALS (inc. Humans)	LIVING THINGS and their HABITATS	STATES OF MATTER	ELECTRICITY	SOUND	Scientists and Inventors
	Learning Challenge	What is digestion?	Can I group an elephant and an ant? How can I group animals?				Are scientists really mad?
	Curriculum Objectives	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - Recognise that living things can be grouped in a variety of ways. - Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. - Recognise that environments can change and that this can sometimes pose dangers to living things. 	<ul style="list-style-type: none"> - Compare and group materials together, according to whether they are solids, liquids or gases. - Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) - Identify the part played by evaporation and condensation in the water 	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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 the pitch of a sound and features of the object that produced it. - Find patterns between 	

		producers, predators and prey.		cycle and associate the rate of evaporation with temperature.	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.	the volume of a sound and the strength of the vibrations that produced it. - Recognise that sounds get fainter as the distance from the sound source increases.	
	Learning Journey	Hook into learning I can identify and name parts of the human digestive system. I can explain the functions of the digestive system. I can identify the types and functions of teeth. I can investigate tooth decay.	Hook into learning I can use a range of methods to sort living things. I can generate questions to use in a classification key. I can identify vertebrates by observing their similarities and differences. I can use a key to identify invertebrates.	Hook into learning I can sort and describe materials. I can investigate gases and explain their properties. I can investigate materials as they change state. I can explore how water changes state. I can investigate how water evaporates.	Hook into learning I can explain what electricity is. I can identify electrical appliances and the types of electricity they use. I can identify complete and incomplete circuits. I can identify and sort materials into electrical	Hook into learning I can describe and explain sound sources I can explain how different sounds travel. I can explore ways to change the pitch of a sound. I can explore how sounds change over distance. I can investigate	To recognise that environments can change and that this can sometimes pose dangers to living things by exploring Gerald Durrell's conservation work in Madagascar. • I can explore deforestation and conservation in Madagascar. To recognise that vibrations from sounds travel through a medium to the ear in the context of Alexander Graham Bell's invention of the telephone. • I can describe Alexander Graham Bell and his

		<p>I can construct and interpret food chains.</p>	<p>I can create a classification key.</p> <p>I can recognise positive and negative changes to the local environment.</p> <p>I can describe environmental dangers to endangered species.</p>	<p>I can identify and describe the different stages of the water cycle.</p>	<p>conductors or insulators.</p> <p>I can explain how a switch works and why they are needed.</p> <p>I can investigate switches and record and report my findings.</p>	<p>ways to absorb sound.</p> <p>I can make a musical instrument and explain how it works.</p>	<p>inventions.</p> <p>To compare and group materials together according to whether they are solids, liquids or gases by exploring the discovery of oxygen.</p> <ul style="list-style-type: none"> • I can describe the properties of oxygen gas <p>To 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) by exploring Kelvin's discovery of absolute zero.</p> <ul style="list-style-type: none"> • I can explain what Lord Kelvin called 'absolute zero'. <p>To identify changes related to scientific ideas and processes by exploring Thomas Edison's work with electricity.</p> <ul style="list-style-type: none"> • I can describe how Thomas Edison's inventions changed people's lives. <p>To identify the different types of teeth in humans and their functions by finding out about the invention of</p>
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							toothpaste. • I can identify ways to look after our teeth.
	Vocab	Humans, oesophagus, large intestine, stomach, digestion, system, nutrition/nutrients, mouth, teeth (canines, incisor, molar, pre-molar), tongue, rip, tear, chew, grind, cut., herbivore, carnivore	Classification, classification key, keys, environment, danger, habitat, identify, plants, animals, grouping, flowering/non-flowering, human impact, vertebrate/invertebrate, fish, amphibians, reptiles, birds, mammals	Solid, liquid, gas, material, heated/cooled, melt/melting point, ice/water/steam, oxygen, condense/condensation, freeze, temperature/degrees Celsius, evaporation, boil, precipitation, states of matter, water cycle, transpiration, melt, evaporate/evaporation, condensation, boiling point, particles	Electricity, electrical circuit, series circuit, appliances, complete circuit, cells, wires, bulb, switches, buzzers, lamp, battery, conductors, insulators, mains, plug, metal, simple circuit	Sound, vibrate/vibration, ear, sound source, noise, pitch, tone, volume, strength of vibration, distance, size, thickness, insulation, solid, liquid, gas, tune, travel, volume	