

Abbey Hulton Primary School – Long Term Science Plan

**Upper Key Stage 2**

Year		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
5	Theme	<b>ANIMALS (inc. Humans)</b>	<b>LIVING THINGS and their HABITATS</b>	<b>PROPERTIES &amp; Changes of Materials</b>	<b>FORCES</b>	<b>EARTH and SPACE</b>	<b>ELECTRICITY (moved from Y6)</b>
	Learning Challenge	<u>What happens as we get old?</u>	<u>Can I describe a life cycle?</u>			<u>Why is the sun so important?</u>	<u>Can I make a bulb brighter?</u>
	Curriculum Objectives	describe the changes as humans develop to old age.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.  Describe the life process of reproduction in some plants and animals.	Compare and group together 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- describe how to recover a substance from a solution.  Use knowledge of solids, liquids and 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, inc. metals, wood and plastic.  Demonstrate that dissolving, mixing and changes of state	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.  Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.  Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.  Describe the movement of the Moon relative to the Earth.  Describe the Sun, Earth and Moon as approximately spherical bodies.  Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	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.

				are reversible changes.  Explain that some changes result in the formation of new materials- this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.			
<b>Learning Journey</b>	<p><b>Hook into learning</b></p> <p>Children can create a family time line – can include images. Use aging booth app to see what they look like when they are older and put into books.</p> <ol style="list-style-type: none"> <li>1. Create a human time line</li> <li>2. How do babies grow?</li> <li><b>3. Puberty</b></li> <li>4. Changes in old age</li> <li>5. Gestation periods of different animals.</li> <li>6. Life expectancy of animals and humans</li> </ol>	<p><b>Hook into learning</b></p> <ol style="list-style-type: none"> <li>1. Making new plants</li> <li>2. Mammals - describe the life cycles of different mammals.</li> <li>3. Who is Jane Goodall</li> <li>4. What is metamorphosis?</li> <li>5. Comparing life cycles.</li> </ol>	<p><b>Hook into Learning</b></p> <ol style="list-style-type: none"> <li>1. Properties of different materials</li> <li>2. Keeping cool – thermal conductors and insulators</li> <li>3. Which electrical conductors make a bulb shine brightest?</li> <li>4. Investigating which materials can dissolve.</li> <li>5. Investigating separating mixtures.</li> <li>6. Irreversible and reversible changes.</li> </ol>	<p><b>Hook into learning</b></p> <ol style="list-style-type: none"> <li>1. Identify forces acting on objects</li> <li>2. Explain the effects of gravity</li> <li>3. What is air resistance?</li> <li>4. What is water resistance?</li> <li>5. How does friction affect objects?</li> <li>6. How does a mechanism work?</li> </ol>	<p><b>Hook into Learning</b></p> <ol style="list-style-type: none"> <li>1. Explain why we know the Sun, Earth and Moon are spherical.</li> <li>2. What are the planets?</li> <li>3. I can explain how planets move in our solar system.</li> <li>4. How do we get day and night?</li> <li>5. How do we get changing seasons?</li> <li>6. How doe sthe moon move - phases of the moon.</li> </ol>	<p><b>Hook into learning</b></p> <ol style="list-style-type: none"> <li>1. Major discoveries in electricity.</li> <li>2. Circuits and symbols</li> <li>3. Volts</li> </ol> <p>Electricity investigations (3 lessons)</p>	

	<p>Vocab</p>	<p>Humans, age, growth, development, reproduction, puberty, gestation, foetus, embryo, womb, gestation, baby, toddler, teenager, elderly.</p>	<p>Life cycles, mammal, amphibian, germination, seed formation, dispersal, offspring, reproduction, insect, pollination, environment, growth, eggs, reproduction, naturalist, seed, stem, root, bulbs, pollen, stamen, stigma</p>	<p>Materials, properties, hardness, particle, insoluble, soluble/solubility, transparency, conductivity, magnetic, dissolve, liquid, gas, solid, change of state, mix/mixture, evaporate, reversible change, non-reversible change, dissolving, mixing</p>	<p>Force/forces, gravity, air resistance, surface, pulleys, gears, water resistance, leavers, effect, speed, movement, fall, Earth, mechanism, friction</p>	<p>Earth, Sun, Planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune), solar, solar system, sphere/spherical, rotate/rotation, day/night, shadow, star, celestial body, revolve, poles (north pole and south pole), seasons, constellation.</p>	<p>Bulb, bright, dim, buzzer, brightness, appliances, circuit, cells, amps, voltage/volts, components, switches, simple, short and series, resistance, conductor/insulator, currents circuit, motor</p>
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6	Theme	<b>ANIMALS (inc. Humans)</b>	<b>LIVING THINGS and their HABITATS</b>	<b>EVOLUTION and INHERITANCE</b>	<b>LIGHT</b>	<b>Famous scientists</b>	<b>Left over for catch up from SATs</b>
	Learning Challenge	<u>How does my body work?</u>	<u>Can I classify different group of living things?</u>	<u>How have I evolved from a monkey?</u>	<u>How do I see light?</u>		
	Curriculum Objectives	<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>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.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</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>	<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>		
Learning Journey	<p><b>Hook into learning</b></p> <p><b>Use human body apron to re-cap main body parts</b></p> <p>1. What are the circulatory system parts?</p>	<p><b>Hook into learning</b></p> <p>1. Classifying conundrums</p> <p>2. How are living things classified?</p> <p>3. Curious</p>	<p><b>Hook into learning</b></p> <p>Zoo trip to look at how groups of animals have evolved.</p> <p>1. What is inheritance?</p> <p>2. How do animals adapt?</p>	<p><b>Hook into learning</b></p> <p>1. How do we see? (Eye)</p> <p>2. Can I reflect light?</p>	6.		

		<p>2. What is the function of the circulatory system parts?</p> <p>3. How are water and nutrients transported?</p> <p>4. How can we live a healthy lifestyle?</p> <p>5. Exercise investigation</p> <p>6. How do drugs and alcohol impact the body?</p>	<p>Creatures</p> <p>4. Different microorganisms</p> <p>5. More about microorganisms</p> <p>6. Can I make a field guide?</p>	<p>3. Theory of evolution</p> <p>4. Evidence for evolution</p> <p>5. Human evolution</p>	<p>3. Can I refract light?</p> <p>4. Can I create a spectrum</p> <p>5. How do we see colours</p> <p>4. Can I create a shadow puppet?</p>		
	<b>Key vobab</b>	<p><b>Circulatory system, heart, aorta, ventricle, atrium, blood, blood vessels, carbon dioxide, oxygen, oxygenated, deoxygenated, respiration, pump, valve, muscle, veins, artery, pulmonary artery, pulmonary vein, nutrients</b></p>	<p><b>Classify, characteristics, similarities, organism, habitat, differences, plants, animals, classifications, vertebrates, invertebrate, fungus – fish- amphibians – reptiles – birds – mammals – arachnid – mollusc – insect – crustacean, micro-organism.</b></p>	<p><b>Fossils, offspring, characteristics, suited/suitable, adapted/adaption, genetics, evolution, parent, variation, evolve, inherit, inheritance</b></p>	<p><b>Reflect/reflective, light source, travel, dark/darkness, absorption, shadow, direction, transparent, opaque, translucent, straight lines, lens, luminous, periscope, kaleidoscope,</b></p>	7.	