



Lawley Primary School – Science LKS2 progression of knowledge and skills

Happiness Responsibility Friendship Respect Courage				
SCIENCE				
Plants				
EYFS	Year 3 – How does your garden grow?		Year 4	
	Knowledge	Working Scientifically	Knowledge	Working Scientifically
	<p>I know that the roots take up water and nutrients from the soil.</p> <p>I know roots also keep plants steady and upright in the soil.</p> <p>I know the stem of a plant carries water and nutrients to different parts of the plants. <i>Practical investigation: CLEAPSS – Ink Flowers.</i> <i>Rising Stars: How is Water Transported in a Plant?</i></p> <p>I know that leaves use light from the sun along with carbon dioxide from the air and water to make food for the plant. I know that this process is called photosynthesis.</p> <p>I know that flowers are involved in plant reproduction and produce seeds from which new plants grow.</p> <p>I know the names of the parts of a plant which are used in reproduction: sepals, petals, stamen, carpel. <i>Practical investigation: CLEAPSS – Looking Closely at the parts of a flowers.</i></p>	<p>I can carry out a comparative test and draw conclusions. I can use my conclusions to ask new questions to test.</p> <p>I can ask questions about how plants make their own food.</p>	<p>Strand not taught in Year 4</p>	<p>Strand not taught in Year 4</p>



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	<p>I know that plants need space to grow.</p> <p>I know that to make a new seed a flower needs to be pollinated.</p> <p>I know that a flower only produces seeds after pollination.</p> <p>I know that seed dispersal happens in lots of different ways: wind, water (seeds that float) bird droppings, tangled in fur or feathers.</p>	<p>I can make careful observations (using magnifying glasses and tweezers) and use these to label an exploded diagram using simple, scientific language.</p>		
Animals inc. Humans				
EYFS	Year 3 – Food and our bodies		Year 4 – Teeth and Eating	
	Knowledge	Working Scientifically	Knowledge	Working Scientifically
	<p><u>Previous Knowledge:</u> <u>Carnivores, Omnivores and Herbivores (Year1)</u></p> <p>I know that animals including humans cannot make their own food.</p> <p>I know that animals including humans get their nutrition from what they eat.</p> <p>I know the main food groups: Protein, Dairy, Fats and Oils, fruit and vegetables and Carbohydrates.</p>		<p>I know the basic parts of the human digestive system.</p> <p>I know the main body parts associated with the digestive system are: mouth, tongue, teeth, oesophagus, stomach, small intestine and large intestine.</p> <p>I know that chewing is the first stages of the digestive system.</p>	<p>I can demonstrate my understanding of the digestive system 'using models and images.</p> <p>I can use resources to represent the different stages of the human digestive system.</p>



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	<p>I know I need the right food types and amounts in order to stay healthy.</p> <p>I know that carbohydrates give us energy. I know that fruit and vegetables give us vitamins and fibre. I know that proteins build healthy muscles and allow our bodies to grow and repair. I know that dairy gives us calcium for strong teeth and bones. I know fats and oils act as an energy store.</p> <p>I know that humans and some animals have a skeleton for support (<u>Vertebrates and invertebrates covered in Year 4</u>).</p> <p>I know that the skeleton bends at joints and joints are where two or more bones join together.</p> <p>I know that skeletons give humans and some animals protection.</p> <p>I know the skull protects the brain. <i>Practical investigation: Rising Stars: Protecting the Brain.</i></p> <p>I know the ribs protect the main organs: heart and lungs.</p> <p>I know that muscles are used for movement (scientific language: contract and relax) I know that muscles work in pairs (Triceps and biceps) <i>Practical investigation: Rising Stars: Make a Model of a Muscle.</i></p>	<p>I can ask relevant questions use a scientific enquiry to answer them.</p> <p>I can explain my findings using a range of scientific language. E.g: skeleton, organs, protect, support.</p>	<p>I know the different types of teeth in humans and their simple functions.</p> <p>I know and can construct a variety of food chains, identifying producers, predators and prey. <i>Practical activity: CLEAPSS – Garden food chains.</i></p> <p>I know plants are the beginning of the food chain.</p> <p>I know that carnivores only eat meat.</p> <p>I know that omnivores eat meat and plants.</p> <p>I know that herbivores only eat plants.</p>	<p>I can create a food chain and talk about carnivores, omnivores and herbivores within it.</p>
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States of Matter (follows on from Materials in KS1)				
EYFS	Year 3		Year 4 – Looking at States	
	Knowledge	Working Scientifically	Knowledge	Working Scientifically
	Strand not taught in Year 3	Strand not taught in Year 3	<p>I know that everything in the world is made up of matter.</p> <p>I know that matter exists in three states – solid, liquid and gas.</p> <p>I know that some materials change state when they are heated. <i>Practical activity idea: Rising Stars – It's melting.</i></p> <p>I know that changes of state from a liquid to a solid happen because substances freeze and this happens at the melting point.</p> <p>I know that evaporation is when a liquid changes state into a gas.</p> <p>In know that condensation is when a gas changes state into a liquid.</p> <p>I know that evaporation is the opposite of condensation and that this is a reversible process. <i>Practical activity idea: Rising Stars – Evaporation.</i></p> <p>I know the part played by evaporation and condensation in the water cycle.</p>	<p>I can describe the characteristics of states of matter with increasing accuracy.</p> <p>I can compare and group materials together, according to whether they are solids, liquids or gases</p> <p>I can estimate the melting point of a material based on scientific facts.</p> <p>I can measure temperature with a thermometer.</p> <p>I can plan and carry out a comparative test. I can record and explain my results in relation to scientific processes.</p>



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			<p>I know that the rate of evaporation is associated with temperature. <i>Supporting resource:</i> https://www.stem.org.uk/resources/elibrary/resource/30642/what-stuff-does</p>	<p>I can set up a practical enquiry to demonstrate a process.</p>
Living Things and their Habitats				
EYFS	Year 3		Year 4	
	Knowledge	Working Scientifically	Knowledge	Working Scientifically
	Strand not taught in Year 3	Strand not taught in Year 3	<p>I know that living things can be grouped in a variety of ways.</p> <p>I know that classification keys are used to help group, identify and name a variety of living things.</p> <p>I know that animals with a backbone are called vertebrates.</p> <p>I know that animals without a backbone are called invertebrates. <i>Practical investigation: Rising Stars – vertebrates and Invertebrates (balloon invertebrates)</i></p> <p>I know some different features of leaves for classification.</p>	<p>I can use and explore classification keys.</p> <p>I can create my own classification key to classify living things, using scientific language.</p> <p>I can use the features to ask questions and group my leaves.</p>
Rocks				
EYFS	Year 3 – Rocks and Soils		Year 4	



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	Knowledge	Working Scientifically	Knowledge	Working Scientifically
	<p>I know some simple physical properties of rocks; hardness, colour, cleavage, lustre, crystalline and friable.</p> <p>I know that a sedimentary rock is when sediment / rock is deposited from air, ice, wind or water</p> <p><i>Practical investigation: Rising Stars: Sedimentary sandwiches.</i></p> <p>I know that soils are made from rocks and organic matter.</p> <p>I know worms are vital to soil health and to plants growing in it.</p> <p>I know worms transport nutrients and minerals from below to the surface via their waste.</p> <p><i>Practical investigation: Observe wormery in wildlife area.</i></p>	<p>I can observe and classify rocks according to their properties.</p> <p>I can compare rocks according to their properties.</p> <p>I can answer questions through research and communicate my findings.</p> <p>Enrichment opportunity: Shropshire Wildlife Trust – Rocks Schools Shropshire Wildlife Trust</p>	<p>Strand not taught in Year 4</p>	<p>Strand not taught in Year 4</p>



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Light				
EYFS	Year 3 – Light and Shadows		Year 4	
	Knowledge	Working Scientifically	Knowledge	Working Scientifically
<p>I know light travels through a transparent material.</p> <p>I know light casts a shadow.</p>	<p>I know that I need light (light source) in order to see things.</p> <p>I know that dark is the absence of light. <i>Practical investigation: Rising Stars: Darkness Box.</i></p> <p>I know that smooth and shiny surfaces reflect light. <i>Practical investigation: Rising Stars: Shiny and Dull.</i></p> <p>I know that light from the sun can be dangerous and how to protect my eyes.</p> <p>I know that shadows are formed when light is blocked by an opaque object.</p> <p><i>Practical investigation: CLEAPSS – Making and measuring shadows.</i></p>	<p>I can carry out a simple test.</p> <p>I can draw conclusions.</p> <p>I can use scientific language to explain my results.</p> <p>I can recognise changes in size of shadows and relate this to simple scientific theory.</p>	<p>Strand not taught in Year 4</p>	<p>Strand not taught in Year 4</p>
Forces and Magnets				
EYFS	Year 3		Year 4	



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	Knowledge	Working Scientifically	Knowledge	Working Scientifically
<p>I know what a magnet picks up.</p>	<p>I know how things move on different surfaces. <i>Practical investigation: Rising Stars – Moving things on different surfaces.</i></p> <p>I know that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>I know the difference between contact and non-contact forces. <i>Practical investigation: Rising Stars – Do magnets work through different materials?</i></p> <p>I know that magnets can attract and repel each other.</p> <p>I know that magnets have two poles.</p> <p>I know magnets can attract some materials and not others.</p> <p>I know that some materials are magnetic.</p>	<p>I can carry out a fair test, graph my results and draw a conclusion about which surface a car travels furthest on.</p> <p>I can plan and carry out a comparative test.</p> <p>I can predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>I can compare and group together a variety of everyday materials based on whether they are attracted to a magnet.</p>	<p>Strand not taught in Year 4</p>	<p>Strand not taught in Year 4</p>
Sound				



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EYFS	Year 3		Year 4 – What’s that Sound?	
	Knowledge	Knowledge	Knowledge	Working Scientifically
I know vibration causes sound.	Strand not taught in Year 3	Strand not taught in Year 3	<p>I know how sounds are made and can associate some of them with something vibrating. <i>Practical activity idea: Rising Stars – Sounds travelling through different materials.</i></p> <p>I know that vibrations from sounds travel through a medium to the ear.</p> <p>I know that there is a pattern between the pitch of a sound and features of the object that produce it.</p> <p>I know that there is a pattern between the volume of a sound and the strength of the vibrations that produce it.</p> <p>I know that sounds get fainter as the distance from the sound source increases.</p> <p>I know the terms vibrate, vibration and vibrating. <i>Practical activity idea: Rising Stars – Feeling and seeing the vibrations.</i></p>	<p>I can apply my understanding of sound and materials to draw conclusions and suggest new questions to test.</p> <p>I can name sounds and say what the source of the sound is.</p>
Electricity				



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	Year 3		Year 4 – Power it up	
	Knowledge	Knowledge	Knowledge	Working Scientifically
	Strand not taught in Year 3	Strand not taught in Year 3	<p>I know that electricity can be dangerous and how to take precautions for keeping safe.</p> <p>I know some common appliances that run on electricity.</p> <p>I know that electricity flows in a circuit.</p> <p>I know the basic parts of a circuit and can name them: cells, wires, bulbs switches and buzzers.</p> <p>I know that a switch opens and closes a circuit. <i>Practical activity idea: CLEAPSS - Making and understanding switches in circuits</i></p> <p>I know that a lamp will only light up if the circuit is complete.</p> <p>I know some common conductors and insulators.</p> <p>I know that metals are good conductors. <i>Practical activity idea: Rising Stars – Conductors.</i></p>	<p>I can ask relevant questions and suggest ways to avoid accidents.</p> <p>I can build a simple circuit that makes a lamp light up.</p> <p>I can draw a simple circuit and label it using scientific language.</p> <p>I can set up a simple practical enquiry. I can use my results to ask and answer new questions.</p>