

Science- Substantive Knowledge Map

Unit	Year 4	Vocabulary	Retrieval Opportunities
Animals Including Humans	<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 producers, predators and prey. 	<p>Human digestive system: digestion, mouth, tongue- mixes, moistens, saliva, oesophagus, transports, stomach, acid, enzymes, small intestine- absorbs water, vitamins, large intestine- compacts, colon</p> <p>Teeth: incisors- cutting, slicing canines- ripping, tearing molars- chewing, grinding floss, brush</p> <p>Food chain: sun, producers, prey, predators, carnivore herbivore, omnivore</p>	<p>Homework activities based upon current topic</p> <p>Resources: window shelf greenhouse and garden, books, nutrition wall/different food groups, electrical components, circuit kits, fossil and rock display.</p>
Living things and their habitats	<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. 	<p>environment, flowering, non-flowering, plants, animals, vertebrate, environment, dangers</p> <p>Vertebrate: fish, amphibians, reptiles, birds, mammals</p> <p>Invertebrate: snails, slugs, worms, spiders, insects</p> <p>Plants: flowering plants (including grasses) non-flowering (including mosses and ferns)</p> <p>Human impact: positive- mature reserves, ecologically planned parks, garden ponds, negative- population, development, litter, deforestation</p>	<p>Activities: Plant doctor (looking after plants), world watch (threats to environment), Jurassic Park (fossils), Magnetic ice (freezing magnets)</p>
States of matter	<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). 	<p>solid, solidify, iron, ice, melt, freeze, liquid, evaporate, condense, gas container, changing state, heated, heat, cooled, cool, degrees Celsius °C, thermometer, water cycle, evaporation, condensation, temperature, melting, warm/cool, water, water vapour.</p>	

	<ul style="list-style-type: none"> Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 		
Electricity	<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 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. 	appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, sign insulators: wood, rubber, plastic, glass conductors: metal, water switch, open, closed	
Sound	<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 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. 	vibrate, vibration, vibrating, air, medium, ear, hear, sound, volume, pitch, faint, fainter, loud, louder, string, percussion, woodwind, brass, insulate	