

Science

Scientific Knowledge and Conceptual Understanding: Year 4 Expectations

Please Note: There should be plenty of opportunities throughout the year for children to use the school/local environment to observe and identify how a habitat changes. This could include a focus on the relationships between the plants and animals within a habitat. This could be done through an ongoing/monthly nature journal to observe, record and review over a period of time.

Environment – Living Things and Their Habitats		Animals – Teeth, Eating and Digestion
<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"> Use and make identification keys for plants and animals. 		<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 (<i>NB Link with types of teeth and eating in this unit but this concept could be developed further in the yr4 Environment / habitats unit</i>). Describe how teeth and gums have to be cared for in order to keep them healthy.
Material Properties and Changes – States of Matter	Sound	Electricity
<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 cycle and associate the rate of evaporation with temperature. <ul style="list-style-type: none"> Solids, liquids and gases can be identified by their observable properties. Solids have a fixed size and shape (the size and shape can be changed but it remains the same after the action). Liquids can pour and take the shape of the container in which they are put. Liquids form a pool not a pile. Solids in the form of powders can pour as if they were liquids but make a pile not a pool. Gases fill the container in which they are put. Gases escape from an unsealed container. Gases can be made smaller by squeezing/pressure. Liquids and gases can flow. 	<p>Vibrations</p> <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 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. <ul style="list-style-type: none"> Recognise that sounds can be made in a variety of ways (pluck, bang, shake, blow) using a variety of things (instruments, everyday materials, body). Sounds travel away from their source in all directions. Vibrations may not always be visible to the naked eye. <p>Pitch</p> <ul style="list-style-type: none"> Find patterns between the pitch of a sound and features of the object that produced it. <ul style="list-style-type: none"> Sounds can be high or low pitched. The pitch of a sound can be altered. Pitch can be altered either by changing the material, tension, thickness or length of vibrating objects or changing the length of a vibrating air column. <p>Muffling/blocking sounds</p> <ul style="list-style-type: none"> Recognise that vibrations from sounds travel through a medium to the ear. <ul style="list-style-type: none"> Sounds are heard when they enter our ears (although the structure of the ear is not important key learning at this age phase). Sounds can travel through solids, liquids and air/gas by making the materials vibrate. Sound travel can be reduced by changing the material that the vibrations travel through. Sound travel can be blocked. 	<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. <ul style="list-style-type: none"> Electricity can be dangerous. Electricity sources can be mains or battery. Batteries 'push' electricity round a circuit and can make bulbs, buzzers and motors work. Faults in circuits can be found by methodically testing connections. Drawings, photographs and diagrams can be used to represent circuits (although standard symbols need not be introduced until UKS2).