

TERM	1	2	3	4	5	6
Topic Title (Threshold Concept) NC Reference	Electricity (Electricity) 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.	Sound (Sound and Hearing) 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 produces 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 sounds source increases.	States of Matter (Substances and Properties) 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. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.		Living things and their habitats (Living Things & Their Habitats) Recognise that living things can be groups 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.	Animals, including humans (Animals & Humans) 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.
Prior learning	Not covered before	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials) • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials) • Find out how the shapes of solid objects made from some materials can be changed by		Describe and compare the structure of a variety of common animals (Y1 - Animals, including humans) • Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans) 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. (Y3 - Animals, including humans)

			squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)		
	<p>An electrical circuit consists of a cell or battery connected to a component using wires. If there is a break in the circuit, a loose connection or a short circuit, the component will not work. A switch can be added to the circuit to turn the component on and off. Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead).</p>	<p>A sound produces vibrations which travel through a medium from the source to our ears. Sound cannot travel through a vacuum. The vibrations cause parts of our body inside our ears to vibrate, allowing us to hear (sense) the sound. The loudness (volume) of the sound depends on the strength (size) of vibrations which decreases as they travel through the medium. A sound insulator is a material which blocks sound effectively. Pitch is the highness or lowness of a sound and is affected by features of objects producing the sounds. For example, smaller objects usually produce higher pitched sounds.</p>	<p>A solid keeps its shape and has a fixed volume. A liquid has a fixed volume but changes in shape to fit the container. A liquid can be poured and keeps a level, horizontal surface. A gas fills all available space; it has no fixed shape or volume. Granular and powdery solids like sand can be confused with liquids because they can be poured, but when poured they form a heap and they do not keep a level surface when tipped. Melting and freezing are changes of state. The freezing point of water is 0oC. Boiling is a change of state from liquid to gas. Water boils when it is heated to 100oC. Evaporation is the same state change as boiling (liquid to gas), but it happens slowly at lower temperatures and only at the surface of the liquid. Evaporation happens more quickly if the temperature is higher, the liquid is spread out or it is windy. Condensation is the change back from a gas to a liquid caused by cooling. Pupils need to explain the water cycle with reference to changes of state.</p>	<p>Living things can be grouped (classified) in different ways according to their features. Classification keys can be used to identify and name living things. Living things live in a habitat which provides an environment to which they are suited (Year 2 learning). These environments may change naturally e.g. through flooding, fire, earthquakes etc. Humans also cause the environment to change. This can be in a good way (i.e. positive human impact, such as setting up nature reserves) or in a bad way (i.e. negative human impact, such as littering). These environments also change with the seasons; different living things can be found in a habitat at different times of the year. There are 5 types of vertebrate (animals with backbone: mammals, fish, reptiles, amphibians, birds)</p>	<p>Food enters the body through the mouth. Digestion starts when the teeth start to break the food down. Saliva is added and the tongue rolls the food into a ball. The food is swallowed and passes down the oesophagus to the stomach. Here the food is broken down and other chemicals are added. The food passes into the small intestine. Here nutrients are removed from the food and leave the digestive system to be used elsewhere in the body. The rest of the food then passes into the large intestine. Here the water is removed for use elsewhere in the body. What is left is then stored in the rectum until it leaves the body through the anus. Humans have four types of teeth: incisors for cutting; canines for tearing; and molars and premolars for grinding (chewing) Living things can be classified as producers, predators and prey according to their place in the food chain.</p>
<p>Working Scientifically</p> <p>(These are suggested WS areas that complement unit - also refer to and highlight WS milestones as cover and ensure all covered over year/phase)</p>	<p><u>Identify, classify and group</u> Classify materials as conductors and insulators.</p> <p><u>Pattern Seeking</u> Investigate how different types of switches operate.</p> <p><u>Comparative and fair testing</u> Compare different materials to replace wires in a circuit.</p>	<p><u>Identify, classify and group</u> Classify materials according to sound insulation.</p> <p><u>Pattern Seeking</u> Find patterns between volume and strength of vibration causing it</p> <p>Find patterns between pitch of a sound and features of the instrument producing it.</p> <p><u>Comparative and fair testing</u></p>	<p><u>Identify, classify and group</u> Group materials as solid, liquid or gas.</p> <p><u>Observing over time</u> Observe how states of matter change over time, observe ice melting and evaporation.</p> <p>Observe the boiling of water, what happens at boiling point and change of state.</p> <p><u>Pattern Seeking</u> Describe the water cycle. Identify examples condensation and where they come from.</p>	<p><u>Identify, classify and group</u> Use fieldwork to investigate types of human impact in the local area Use classification keys to identify unknown living things</p> <p><u>Observing over time</u> Observe local wildlife habitats</p> <p><u>Secondary sources</u> Find out about how environments may naturally change. Find out about human impact, both positive and negative, on environments.</p>	<p><u>Identify, classify and group</u> Classify types of teeth and their functions</p> <p>Classify animals as predators and prey, create food chains and webs Identify the organs and processes in the human digestive system</p> <p><u>Pattern Seeking</u> Explore eating different types of food to identify which teeth are being used for cutting, tearing and grinding (chewing).</p>

		Investigate how size of sound changes as distance from source increases	<u>Comparative and fair testing</u> Investigate the best places to dry washing.		Identify patterns of energy in food chains
End of unit task	Investigate electrical circuits Make, draw and describe the components of an electric quiz board.	Investigate sound and hearing Suggest a way to prove the relationship between size of instrument and pitch. True or false? Smaller instruments create higher pitched sounds	Investigate states of matter Summarise, using scientific terminology, the relationship between temperature and states of matter. Explain the water cycle using the appropriate terminology.	Classify living things Summarise the key similarities and differences of animals in different groups. Adapt a classification key to include different criteria.	Explain food chains Demonstrate and explain how food chains begin with sunlight Explain how water is essential in a food chain.