

Units	Sound	Living Things and Their Habitats: Conservations	Animals Including Humans	States of Matter	Living Things and Their Habitats	Electricity	Science Fair
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National Curriculum:	<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. • 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. • 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. • 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. • 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.
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<p>Working scientifically</p> <p>Statutory requirements</p> <p>During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> ▪ asking relevant questions and using different types of scientific enquiries to answer them ▪ setting up simple practical enquiries, comparative and fair tests ▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers ▪ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions ▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables ▪ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions ▪ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions ▪ identifying differences, similarities or changes related to simple scientific ideas and processes ▪ using straightforward scientific evidence to answer questions or to support their findings.
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Unit Link	Sound 	Living Things and Their Habitats: Conservations 	Animals Including Humans 	States of Matter 	Living Things and Their Habitats 	Electricity 	Science Fair Entry Enquiry Focus
Scientist	Alexander Graham Bell 	Vanessa Nakate 	Pierre Fauchard 	Anders Celsius 	Siobhan Sterling 	Benjamin Franklin 	
Area Focus	Physics	Biology	Biology	Chemistry	Biology	Physics	
Enquiry Approach	 Identifying, Grouping and Classifying  Pattern Seeking  Problem Solving	 Research  Problem Solving  Observations Over Time	 Identifying, Grouping and Classifying  Comparative/Fair Testing  Pattern Seeking	 Identifying, Grouping and Classifying  Pattern Seeking  Observations Over Time  Research  Comparative/Fair Testing  Problem Solving	 Identifying, Grouping and Classifying  Research	 Problem Solving  Pattern Seeking  Comparative/Fair Testing	
Resources	Sugar Speaker Cling film Bowls Rocks 2L plastic bottles	Research tools Index cards Petroleum jelly Decibel metres Muddy glass of water	Craft materials Whiteboards Digestive system model Mirror Coloured pencils	Rulers Kettle/stove Thermometer Mini whiteboards Butter Coconut oil	Access to pond or hedgerow Magnifying glasses Clipboards Nets Viewing pots	Batteries Bulbs Alligator clips Buzzers Bells Switches	

	<p>Balloons Wire coat hangers String Foil Cotton wool Sticky tape Bubble wrap Fabric Scrap paper Newspaper Weights Rulers Decibel metre Boxes Kitchen roll Elastic bands Rice/beans/lentils Card String Glass bottles Drinking glasses Spoons Tape measures</p>		<p>Sugary soda Energy drink Sports drink Juice Vinegar Orange juice Water Milk Clear cups Plastic wrap Rubber bands Eggs Toothbrush Toothpaste Coloured card String</p>	<p>Dark/milk/white chocolate Gummy bears Cheese Tealights Tealight stand Metal pie cases Tongs Matches (or kitchen stove) Boiling water Cups/beakers Measuring cylinders</p>	<p>Teaspoons</p>	<p>Wires Tin foil Fabric Coins Rubber Paper Wood Classroom objects Paper clips Safety pins Cardboard</p>	
<p>Key Concepts</p>	<p>Energy makes things happen and can be seen by its effects (light, sound, electricity). Energy can be transferred but is not used up.</p>	<p>Living and non-living things can be grouped in a variety of ways</p> <p>Living things depend on each other and on the environment; humans can have both a positive and negative impact</p>	<p>There is a relationship between structure and function.</p> <p>Living and non-living things can be grouped in a variety of ways.</p> <p>Living things have characteristics and requirements for life, growth and health</p> <p>Living things depend on each other and on the environment; humans can have both a positive and negative</p>	<p>There is a relationship between structure and function</p> <p>Living and non-living things can be grouped in a variety of ways</p> <p>All matter on earth exists in one of three states: solid, liquid, gas and the state of matter can change</p> <p>Energy makes things happen and can be seen by its effects; it can be transferred (but is not used up)</p>	<p>Living and non-living things can be grouped in a variety of ways</p> <p>Living things depend on each other and on the environment; humans can have both a positive and negative impact</p>	<p>Living and non-living things can be grouped in a variety of ways.</p> <p>Energy makes things happen and can be seen by its effects (light, sound, electricity); it can be transferred but is not used up.</p>	

Knowledge

Lesson 1: Identify how sounds are made

I can identify how sounds are made, associating some of them with something vibrating.

Lesson 2: Explore how vibrations from sounds travel through a medium to the ear

I can recognise that vibrations from sounds travel through a medium to the ear.

Lesson 3: Explore sound insulation

I can recognise that vibrations from sounds travel through a medium.

Lesson 4: Explore volume

I can find patterns between the volume of a sound and the strength of the vibrations that produced it.

Lesson 5: Explore pitch

I can find patterns between the pitch of a sound and features of the object that produced it.

Lesson 6: Explore sounds from near and from far

I can recognise that sounds get fainter as the distance from the sound source increases.

Lesson 1: Describe ecosystems and how they are affected by changes in the seasons

I can recognise that seasonal changes affect environments and that this can sometimes pose dangers to living things.

Lesson 2: Understand human impact on the environment through deforestation

I can recognise that deforestation affects environments and that this can sometimes pose dangers to living things.

Lesson 3: Explore air pollution

I can recognise that air pollution affects environments and that this can sometimes pose dangers to living things.

Lesson 4: Understand water pollution

I can recognise that water pollution affects environments and that this can sometimes pose dangers to living things.

Lesson 5: Understand that humans can have a positive impact on nature

I can recognise that environments can change and that this

Lesson 1: Identify the organs in the digestive system

I can identify the basic parts of the digestive system in humans.

Lesson 2: Describe the functions of the main organs in the digestive system

I can describe the simple functions of the basic parts of the digestive system in humans.

Lesson 3: Identify the types of human teeth and their functions

I can identify the different types of teeth in humans and their simple functions.

Lesson 4: Investigate the effects of different liquids on the teeth.

I can find out what damages teeth and how to look after them.

Lesson 5: Understand food chains

I can construct and interpret a variety of food chains, identifying producers, predators and prey.

Lesson 1: Compare and group the 3 states of matter

I can compare and group materials together, according to whether they are solids, liquids or gases.

Lesson 2: Investigate melting points

I can observe that some materials change state when they are heated and measure or research the temperature at which this happens in degrees Celsius (°C)

Lesson 3: Explore freezing and boiling points

I can 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)

Lesson 4: Explore evaporation and condensation

I can observe that some materials change state through evaporation and condensation and associate the rate of evaporation with temperature

Lesson 5: Understand the water cycle

I can identify the part played by evaporation and condensation in the water cycle.

Lesson 1: Explore different habitats

I can recognise that living things can be grouped in a variety of ways.

Lesson 2: Research a habitat

I can make a guide to local living things (*non-statutory*).

Lesson 3: Explore how animals can be classified

I can explore classification keys to help group, identify and name a variety of living things in the local and wider environment.

Lesson 4: Create a classification key

I can create classification keys to help group, identify and name a variety of living things in the local and wider environment.

Lesson 5: Explore and classify pond plants (change to correlate with local environment, e.g. hedgerow, woods, field, beach, etc)

I can use classification keys to help group, identify and name a variety of living things in the local and wider environment.

Lesson 1: Explore electrical appliances and electrical safety

I can identify common appliances that run on electricity.

Lesson 2: Learn about electrical components in a series circuit

I can construct a simple series circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.

Lesson 3: Investigate electrical circuits

I can 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.

Lesson 4: Explore conductors and insulators

I can recognise some common conductors and insulators and associate metals with being good conductors.

Lesson 5: Learn about electrical switches

I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.

can sometimes pose dangers to living things.

Skills	<p>Lesson 1:  Interpreting and Communicating Results</p> <p>Lesson 2:  Observing and Measuring</p> <p>Lesson 3:  Setting up tests</p> <p>Lesson 4:  Recording data, results and findings</p> <p>Lesson 5:  Evaluating</p> <p>Lesson 6:  Setting up tests</p>	<p>Lesson 1:  Interpreting and Communicating Results</p> <p>Lesson 2:  Interpreting and Communicating Results</p> <p>Lesson 3:  Observing and Measuring</p> <p>Lesson 4:  Interpreting and Communicating Results</p> <p>Lesson 5:  Interpreting and Communicating Results</p>	<p>Lesson 1:  Interpreting and Communicating Results</p> <p>Lesson 2:  Recording data, results and findings</p> <p>Lesson 3:  Recording data, results and findings</p> <p>Lesson 4:  Observing and Measuring</p> <p>Lesson 5:  Interpreting and Communicating Results</p>	<p>Lesson 1:  Interpreting and Communicating Results</p> <p>Lesson 2:  Setting up tests</p> <p>Lesson 3:  Recording data, results and findings</p> <p>Lesson 4:  Making Predictions.</p> <p>Lesson 5:  Recording data, results and findings</p>	<p>Lesson 1:  Interpreting and Communicating Results</p> <p>Lesson 2:  Interpreting and Communicating Results</p> <p>Lesson 3:  Recording data, results and findings</p> <p>Lesson 4:  Interpreting and Communicating Results</p> <p>Lesson 5:  Observing and Measuring</p>	<p>Lesson 1:  Interpreting and Communicating Results</p> <p>Lesson 2:  Setting up tests</p> <p>Lesson 3:  Making Predictions</p> <p>Lesson 4:  Setting up tests</p> <p>Lesson 5:  Setting up tests</p>	
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<p>Vocabulary</p>	<p>vibration medium waves signals eardrum echo source vacuum particles energy materials absorb insulate defenders reflect decibel meter volume power decibels high pitch low pitch pitch sound source energy particles fade travel</p>	<p>ecosystem Northern Hemisphere Southern Hemisphere migrate monsoon recycling biodiversity rainforest deforestation drought greenhouse gases climate change pollution fossil fuels emissions sewage pesticides water treatment plant chemicals contaminate recycling endangered marine sanctuaries conservation areas protect</p>	<p>oesophagus large intestine small intestine stomach digestive system gall bladder liver absorb saliva incisors gum jaw canines molar tooth decay plaque cavity enamel fluoride consumer producer predator ecosystem prey</p>	<p>volume liquid matter solid gas particle reverse freezing boiling evaporation process condensation absorb water vapour water cycle precipitation surface run off groundwater</p>	<p>microhabitat habitat adapted camouflage conditions environment coastal grassland climate exposure species classify vertebrate invertebrate characteristics classification key organism identify criteria sub-group flowering plant non-flowering plant ecosystem</p>	<p>plug socket appliance electricity mains electricity battery circuit component series circuit cell incomplete circuit battery wire bulb complete circuit copper electrical conductor electrical insulator metal plastic control switch</p>	
<p>Career Links</p>	<p>Sound engineer</p>	<p>Marine conservationist</p>	<p>Dentist</p>	<p>Chemical engineer</p>	<p>Wetland biologist</p>	<p>Electrician</p>	