
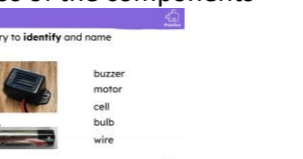
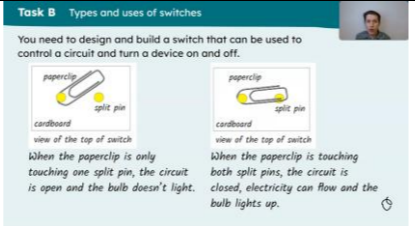
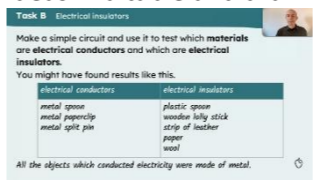
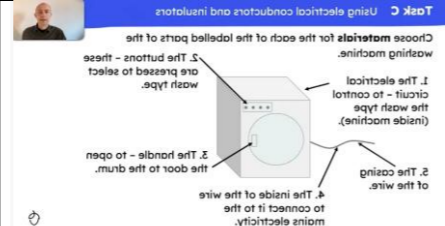
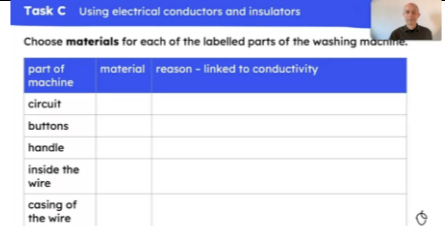


Year	Knowledge	Skills																								
Y3 / Y4 Term 1 Year B	<p><u>Focus:</u> Why do different objects make different sounds?</p> <p><u>National Curriculum Knowledge</u> ✓ Sound</p> <p><u>Prior Learning:</u> Humans and their senses</p> <p><u>Contributing towards:</u> Which bits of my body could I live without? UKS2</p>																									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"><u>Objective</u></th> <th style="width: 25%;"><u>Sticky Knowledge</u></th> <th style="width: 25%;"><u>Key Vocabulary and Definitions</u></th> <th style="width: 35%;"><u>Resources</u></th> </tr> </thead> <tbody> <tr> <td>To know what sound is</td> <td>Sounds are made when objects vibrate These vibrations enter the ear and are heard as sound</td> <td>Vibration – rapid back and forth movement</td> <td>Drum with rice on, cymbol, ruler, stretched rubber band</td> </tr> <tr> <td>To know how sound travels</td> <td>Sound travels as waves of energy through the air (or another medium) into our ear</td> <td>Medium – a substance that makes the transfer of sound possible (gas, Liquid or solid)</td> <td>Hyperlink to BBC bitesize Cup and string investigation. Discuss the need to measure sound. Why do we need to do this?</td> </tr> <tr> <td>To know what the pitch is and how it changes</td> <td>Sound changes depending on how fast or slow an object vibrates to make sound waves</td> <td>Pitch - quality of sound (high or low) depends on the speed of the vibration</td> <td>Pitch investigation with bottles of water,</td> </tr> <tr> <td>To know why some sounds are loud and others are quiet</td> <td>If the vibrations are strong the sound is loud Sound is measured in decibels</td> <td>Decibels - the unit used to measure the intensity of a sound.</td> <td>Diagram of the ear – how we hear sounds</td> </tr> <tr> <td>Investigate materials to make sound cancelling ear muffs</td> <td>Some materials are better at stopping sounds than others</td> <td colspan="2">Investigation :Give out range of materials; ask children to observe characteristics – weave, thickness, density etc. make hypotheses about which will make best earmuffs. Suggest alternatives or additional materials. How could we test materials? Use ticking clock as sound source. How can we make sure the test is fair? Discuss variables. Use post it planning board. Carry out test and record results. Children if possible to come up with method themselves.</td> </tr> </tbody> </table>		<u>Objective</u>	<u>Sticky Knowledge</u>	<u>Key Vocabulary and Definitions</u>	<u>Resources</u>	To know what sound is	Sounds are made when objects vibrate These vibrations enter the ear and are heard as sound	Vibration – rapid back and forth movement	Drum with rice on, cymbol, ruler, stretched rubber band	To know how sound travels	Sound travels as waves of energy through the air (or another medium) into our ear	Medium – a substance that makes the transfer of sound possible (gas, Liquid or solid)	Hyperlink to BBC bitesize Cup and string investigation. Discuss the need to measure sound. Why do we need to do this?	To know what the pitch is and how it changes	Sound changes depending on how fast or slow an object vibrates to make sound waves	Pitch - quality of sound (high or low) depends on the speed of the vibration	Pitch investigation with bottles of water,	To know why some sounds are loud and others are quiet	If the vibrations are strong the sound is loud Sound is measured in decibels	Decibels - the unit used to measure the intensity of a sound.	Diagram of the ear – how we hear sounds	Investigate materials to make sound cancelling ear muffs	Some materials are better at stopping sounds than others	Investigation :Give out range of materials; ask children to observe characteristics – weave, thickness, density etc. make hypotheses about which will make best earmuffs. Suggest alternatives or additional materials. How could we test materials? Use ticking clock as sound source. How can we make sure the test is fair? Discuss variables. Use post it planning board. Carry out test and record results. Children if possible to come up with method themselves.	
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<p><u>Knowledge Skills and Understanding</u></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 pitch of a sound and features of the sound 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 source increases 																										
<p><u>Working Scientifically</u></p> <ul style="list-style-type: none"> Find how the pitch of sounds can be changed in a variety of ways Find how the volume of sounds can be changed in a variety of ways Investigate a variety of different materials to find out which would be the best insulation against sound. 																										
<p><u>Performing simple tests</u></p> <ul style="list-style-type: none"> How does the sound change if we put more water in the bottle,? How does changing the amount of water change the pitch? Does it matter if I blow or strike the bottle? Investigate a variety of different materials to find out which would be the best insulation against sound. How can we make sure the test is fair? 																										

Year	Knowledge				Skills
Y3 / Y4 Term 3 Year B	Focus: Why do materials change state? National Curriculum Knowledge ✓ Materials and their properties – States of Matter Prior Learning: Materials and their properties KS1 Contributing towards : Materials and their properties (what happens in a potions lesson at Hogwarts) UKS2				<p>Knowledge Skills and Understanding</p> <ul style="list-style-type: none"> Compare and group materials together, according to whether they are solids, liquids or gases explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container). Know that some materials change state when they are heated or cooled Know water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled. identify the part played by evaporation and condensation in the water cycle understand that there is a between the rate of evaporation with temperature <p>Working Scientifically</p> <ul style="list-style-type: none"> Find how materials change state when they are heated or cooled research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle associate the rate of evaporation with temperature <p>Performing simple tests</p> <ul style="list-style-type: none"> investigate what happens when you heat different substances – do they all change at the same temperature? what changes how fast the washing will dry? how can I keep my ice cube in my drink for longer?
	Objective	Sticky Knowledge	Key Vocabulary and Definitions	Resources	
	What are the differences between solids, liquids and gasses? Look at Examples	A solid holds its shape – it does not change shape A liquid takes the shape of the container it is in. Gases are air like substances that move around freely	Particles – everything in the world is made up of particles Matter – there are three states of matter – solid, liquid or gases	Sorting activity with solid liquids and gases Look at the arrangement of particles in each state – children to represent particles.	
	What happens when you heat a solid? observe that some materials change state when they are heated or cooled	You can change the state of some solids by adding heat – this is melting. The more heat you add the faster the particles move, the more they break apart	Melting – to become liquified by heat Boiling – when a liquid changes state to a gas by heat	Pictures of things that can melt Investigation – melting chocolate/ butter over a candle – describe properties before and after- melt ice cube	
	What happens when you heat a solid? observe that some materials change state when they are heated or cooled	You can change the state of some liquids by taking away heat – this is Freezing The more heat you add the faster the particles move, the more they break apart	Freezing – when a liquid changes shape and becomes a solid by cooling down Condensing - a gas changes state to a liquid when it is cooled	Pictures of things that can freeze. Why is Freezing things helpful? Keeps food fresh – easier to transport a gas (liquid oxygen) Investigation – boiling kettle with mirror describe properties before and after	
	How to measure temperature Describe what is meant by boiling / melting point Predict states of matter	A thermometer is used to measure temperature. Temperature is measured in Degrees Celsius. Melting point of water is 0° C Water boils at 100° C	Thermometer – a tool used to measure the temperature Celsius – the scale temperature is measured in	What state of matter will water be between the melting and boiling point? What state of matter will water be at 25°C? -4°C ? 120°C?	
identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Condensation and evaporation of puddles happen naturally. The warmer it is the faster evaporation occurs		Perform test – water on playground – different days, measure temperature, how fast does the water evaporate?		

Year	Knowledge				Skills
<p>Y3 / Y4</p> <p>Term 4</p> <p>Year B</p>	<p>Focus: What do we need to create power?</p>				<p>Knowledge Skills and Understanding</p> <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 <p>Working Scientifically</p> <ul style="list-style-type: none"> observe patterns, for example, that bulbs get brighter if more cells are added, asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables <p>Performing simple tests</p> <ul style="list-style-type: none"> investigate what happens when you put more than one bulb in a circuit
	<p>National Curriculum Knowledge</p> <p>✓ Electricity</p>				
	<p>Contributing towards : What is a conductor LKS2 T5</p>				
	<p><u>Objective</u></p>	<p><u>Sticky Knowledge</u></p>	<p><u>Key Vocabulary and Definitions</u></p>	<p><u>Resources</u></p>	
	<p>Identify common appliances that run on electricity</p>	<p>Electricity is made in generators by gas, coal, oil, wind or solar power. Appliances can be powered by mains electric or batteries Electricity is dangerous</p>	<p>Power – how much electrical energy is being used by a product Appliance – a product that uses electricity to perform a function Generator – it makes electrical energy</p>	<p>Electricity - BBC Bitesize Identify different types of generators and list household appliances</p>	
	<p>To understand what we use electricity for</p>	<p>Appliances convert electrical energy into Light, heat, movement and sound</p>	<p>Mains Electricity – when you plug the appliance into a socket Cell – one small ‘packet’ of electricity Battery – a ‘packet’ of electricity</p>	<p>Make a table to show what power the appliance changes electricity into eg movement – sort and group electrical / non. Battery / mains</p> 	
	<p>An electrical circuit is a closed loop that electricity can flow through to make a device work.</p>	<p>The basic elements of a circuit are called components A simple circuit has to have an electrical source eg battery, wires and a device</p>	<p>Circuit – a closed loop that electricity can travel along. Components – parts that make up an electrical circuit Device - In a circuit, a device is a component that needs electricity for a particular purpose.</p>	<p>Label photos of the components</p>  <p>Demonstrate then chd make a simple circuit draw and label</p>	
<p>To build a simple electrical circuit To develop a circuit with a switch and explain what a switch does in the circuit</p>	<p>Wires must be connected to the positive and negative end of the battery in a complete loop. A series circuit is when all the components are in the same loop. Switches can break a circuit by making a space between components where the electricity cannot flow.</p>		<p>How can you change a circuit? - BBC Bitesize Look at images of different switches on appliances (on / off, volume, kettle, programme switch) Children make a circuit with switch – troubleshoot – why won’t this circuit work?</p>		
<p>To carry out a test with different components in a circuit</p>			<p>What happens if I add another cell? What happens if I add more wires? What happens if I add more bulbs / buzzers / motors?</p>		

Year	Knowledge			Skills	
Y3 / Y4 Term 5 Year B	Focus: What is a conductor? National Curriculum Knowledge ✓ Electricity Contributing towards: Circuit Breaker or Circuit Fixer? UKS2			Knowledge Skills and Understanding <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 Working Scientifically <ul style="list-style-type: none"> note that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit. asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Performing simple tests <ul style="list-style-type: none"> investigate what happens when you put more than one bulb in a circuit 	
	Objective	Sticky Knowledge	Key Vocabulary and Definitions		Resources
	To build a simple electrical circuit To develop a circuit with a switch and explain what a switch does in the circuit	Switches can break a circuit by making a space between components where the electricity cannot flow.			Electrical components - BBC Bitesize Recap on electricity so far how to make a switch
	To sort materials into electrical conductor and electrical conductor	An electrical conductor is a material that allows electricity to pass through it easily. An electrical insulator is a material that does not allow electricity to pass through it easily.	Electrical conductor - An electrical conductor is a material that allows electricity to pass through it easily. Electrical insulator - An electrical insulator is a material that does not allow electricity to pass through it easily.		Discuss a fair test Decide what materials to use - predict
	To sort materials into electrical conductor and electrical conductor	Metals are the best materials for conducting electricity. Minerals that are dissolved in water can conduct electricity			What are conductors and insulators? - BBC Bitesize Carry out testing – record ideas in a table and draw conclusions 
Practical uses for conductors and insulators – explain your thinking	Using electrical appliances near water is very dangerous				

Year	Knowledge				Skills												
<p>Y3 / Y4</p> <p>Term 6</p> <p>Year B</p>	<p>Focus: What if you had animal teeth?</p>				<p>Knowledge Skills and Understanding</p> <ul style="list-style-type: none"> identify and name different types of teeth identify the different functions of teeth understand that the build up of plaque can damage the enamel on the outside of teeth understand what damages teeth compare the teeth of herbivore, carnivore and omnivore <p>Working Scientifically</p> <ul style="list-style-type: none"> Comparing the teeth of carnivores and herbivores and suggesting reasons for differences; Ask questions like do all animals have incisors, molars and canine teeth? What sort of teeth do omnivores have? What sort of teeth do herbivores / carnivores have? Why does a beaver have large strong incisors? What diet does this animal eat? How do you know? Can an organism be both a consumer and a herbivore? Can an animal be a predator and a consumer? Can an organism be both prey and a predator? finding out what damages teeth and how to look after them. recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables <p>Performing simple tests</p> <ul style="list-style-type: none"> investigate what damages teeth – which drinks are most damaging to teeth 												
	<p>National Curriculum Knowledge</p> <p>✓ Humans and Other Animals</p>																
	<p>Contributing towards : What is inside my body? LKS2</p>																
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	<p>To identify and name different types of teeth</p>	<p>Teeth are used to break down food before it is swallowed</p>	<p>Incisors - Incisors are sharp, flat teeth found at the front of the mouth. Canines - Canines are slightly pointed teeth that sit on each side of incisor teeth at the front of the mouth. Molars - Molars are teeth found at the back of the jaw with a rounded or flattened surface.</p>	<p>KS2 Science: Teeth - how help animals BBC Teach Use 2 different coloured playdough to make model of lower gums.</p> <p>they eat -</p>													
	<p>To identify the functions of different teeth</p>	<p>Different types of teeth have different functions, but work together to break down food to travel through the body.</p>	<p>Incisors - sharp and flat, and are used to cut and bite food. Canines - sharp and more pointed, and are used to rip and tear food. Molars - wide and bumpy, and are used to chew and grind food.</p>	<p>Have different food for children to eat and decide which teeth they used to eat – apple – incisor, crusty bread – canine. Banana – molar. Make a table to show the name, shape and function</p>													
	<p>To investigate what damages teeth and how to look after them</p>	<p>Humans have two sets of teeth in their lifetime; the teeth you have as a child are replaced by adult teeth. A build up of plaque can lead to tooth decay. Food and drink that contains lots of sugar can cause tooth decay.</p>	<p>Enamel - Enamel is the hard shiny outer layer covering the surface of a tooth. Plaque - Plaque is a sticky substance which forms a coating on teeth and gums. Decay - When teeth decay, they gradually break down and rot away.</p>	<p>Look at cross section of tooth Discuss plaque build up Set up fair test discuss how to make it fair – empty egg shell in different drinks Make a table to record results Predict</p>													
	<p>Present information - how sugar in drinks can damage teeth</p>	<p>Too much sugar in food or drink can damage teeth. Information about sugar content in drinks can be found on packaging.</p>	<p>Data - Data is information collected during an investigation. It may be numbers, symbols, pictures or text. Conclusion - In a conclusion, scientists explain what the results show or mean.</p>	<p>Observe results, order from most decay top least decay – take photos Demonstrate how to write a conclusion. Look at packet labels</p>													
<p>to compare the teeth of carnivores, herbivores and omnivores</p>	<p>Different animals have different types of teeth dependent on the types of food they eat.</p>	<p>Omnivore - An omnivore is an animal that eats both plants and other animals. Carnivore - A carnivore is an animal that eats other animals. Herbivore - A herbivore is an animal that eats only plants.</p>	<p>Teeth - BBC Bitesize Look at different images of animal and their teeth – do all animals have the same type of teeth? What diet does this animal eat? How do you know?</p>														
<p>Label and construct food chains begin to construct a foodweb</p>	<p>Energy is transferred in food chains. A food chain always starts with a producer</p>	<p>Producer – plants make their energy from the sun Consumer – animals get their energy from food Primary consumer – first consumer Tertiary consumer – third consumer</p>	<p>Arrows represent the transfer of energy. Label diagram on food chain. Make a food web</p> <table border="1"> <thead> <tr> <th>Organism</th> <th>Diet</th> </tr> </thead> <tbody> <tr> <td>Mayfly nymph</td> <td>Pondweed, microscopic algae</td> </tr> <tr> <td>Microscopic algae</td> <td>Makes its own food</td> </tr> <tr> <td>Dragonfly nymph</td> <td>Freshwater shrimp, mayfly nymph</td> </tr> <tr> <td>Freshwater shrimp</td> <td>Microscopic algae</td> </tr> <tr> <td>Brown trout</td> <td>Mayfly nymphs, dragonfly nymphs, freshwater shrimps</td> </tr> <tr> <td>Pond weed</td> <td>Makes its own food</td> </tr> </tbody> </table>	Organism	Diet	Mayfly nymph	Pondweed, microscopic algae	Microscopic algae	Makes its own food	Dragonfly nymph	Freshwater shrimp, mayfly nymph	Freshwater shrimp	Microscopic algae	Brown trout	Mayfly nymphs, dragonfly nymphs, freshwater shrimps	Pond weed	Makes its own food
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Whole School Science Curriculum

