



Science Curriculum Overview CYCLE A LKS2

CYCLE A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Question	States of matter Year 4 <i>How and why do materials change their state?</i>		Living things and their habitats Year 4 <i>How can we sort and identify the incredible variety of living things around us?</i>	Animals including humans Year 4 <i>How do living things use food to survive and stay healthy?</i>	Sound Year 4 <i>How is sound created, changed, and experienced in the world around us?</i>	Electricity Year 4 <i>How does electricity flow and how do we use it to power our world?</i>
NC Reference	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		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.		<u>Sound</u> 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.	



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	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.		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. <u>Electricity</u> 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 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.
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Other NC links	English – Scientific vocabulary, explanation texts, information texts, recording investigations. Maths – Measuring, reading scales, data handling, tables, graphs, problem-solving. Geography – Weather and the water cycle. Design & Technology – Healthy eating, food preparation, electrical products and simple circuits. Computing – Understanding how technology uses electricity. Music – Pitch, volume and vibrations. PSHE – Healthy lifestyles, nutrition and wellbeing.				
SIAMS	● Exploring and appreciating the natural world. ● Caring for the environment and using resources responsibly. ● Valuing living things and each other's ideas. ● Asking questions and investigating God's world. ● Appreciating our bodies and the world around us. ● Learning through enquiry, testing and problem-solving. ● Working collaboratively and sharing scientific ideas. ● Making safe and informed choices in science investigations.				
Asking questions					
Investigating	Observe and compare solids, liquids and gases.	Observe and identify living things in different	Investigate the effect of different foods on health.	Investigate how sounds are made by vibrations.	Construct and test simple electrical circuits. Investigate how switches



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	Investigate how heating and cooling change materials. Measure temperature using a thermometer. Explore melting, freezing, evaporation and condensation. Carry out fair tests and make careful observations. Record results in tables and simple graphs. Identify patterns and draw conclusions from evidence. Use scientific vocabulary to explain findings.	habitats. Use classification keys to identify plants and animals. Compare and group living things based on observable features. Carry out habitat surveys and collect data. Record findings using tables, tally	Observe and compare different types of teeth. Explore the functions of the digestive system. Construct and interpret simple food chains. Collect, record and present data using tables and charts. Identify patterns and draw conclusions from evidence. Use scientific vocabulary to explain findings. Make predictions and ask relevant scientific questions.	Explore how pitch and volume can be changed. Compare how sound travels through different materials. Carry out fair tests and make careful observations . Measure and record results using	affect a circuit. Explore which materials are conductors and insulators. Carry out fair tests and make careful observations. Record results using tables and simple diagrams. Identify patterns and draw conclusions from evidence. Make predictions and test ideas. Use scientific vocabulary to explain findings.
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		charts and classification diagrams. Identify patterns and relationships in data. Draw conclusions using evidence from observations. Use scientific vocabulary to explain classification and habitats.		tables and charts. Identify patterns and draw conclusions from evidence. Make predictions and test ideas. Use scientific vocabulary to explain findings.	
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Identifying and Classifying	Identify and classify materials as solids, liquids or gases. Compare materials based on their properties. Group materials according to how they change state. Recognise similarities and differences between materials. Use scientific vocabulary to describe and classify observations. Sort materials using simple criteria. Explain classifications using evidence from observations. Record findings using tables and diagrams.	Identify and classify living things using observable features. Use and create simple classification keys. Group plants and animals in different ways. Compare similarities and differences between living things. Recognise how	Identify the parts of the digestive system and their functions. Classify different types of teeth by their shape and function. Group foods into healthy eating categories. Identify producers, predators and prey in food chains. Compare the diets of different animals. Use scientific vocabulary to describe and classify observations. Record findings using tables, charts and diagrams.	Identify sources of sound and how they are produced. Classify sounds by pitch and volume. Compare how different materials transmit sound. Group objects according to the sounds they	Identify and name the components of a simple electrical circuit. Classify materials as conductors or insulators. Identify electrical appliances and their power sources. Compare complete and incomplete circuits. Group materials based on their electrical properties. Use scientific vocabulary to describe and classify observations. Record findings using tables and circuit
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		classification helps identify organisms. Use scientific vocabulary to describe characteristics . Record findings using tables, charts and classification diagrams. Explain classifications using evidence from observations.	Explain classifications using evidence.	produce. Recognise patterns between vibrations and sound. Use scientific vocabulary to describe observations . Record findings using tables and charts. Explain classification s using	diagrams. Explain classifications using evidence from investigations.
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				evidence from investigations.	
Observing and measuring	Observe changes of state over time. Measure temperature using a thermometer. Compare solids, liquids and gases through careful observation. Record measurements accurately using tables and charts. Identify patterns in results. Use appropriate scientific equipment safely. Make accurate observations using scientific vocabulary. Draw conclusions from measurements and	Observe plants and animals in their habitats. Identify and compare observable features of living things. Use simple equipment to make careful observations. Measure and record data	Observe and identify the parts of the digestive system. Compare different types of teeth and their functions. Observe and classify foods into healthy food groups. Collect and record data about diets and food chains. Use simple equipment to make careful observations. Record findings using tables	Observe how sounds are made through vibrations. Compare sounds with different pitches and volumes. Measure how sound changes over distance.	Observe how simple electrical circuits work. Compare complete and incomplete circuits. Observe which materials conduct electricity. Use simple equipment to test electrical circuits safely. Record observations using tables and circuit diagrams.



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	observations.	during habitat surveys. Record findings using tables, tally charts and diagrams. Identify patterns in observations. Use scientific vocabulary to describe features and habitats. Draw conclusions from	and charts. Identify patterns in data. Draw conclusions using observations and evidence.	Use simple equipment to investigate sound. Record observations using tables and charts. Identify patterns in results. Use scientific vocabulary to describe observations . Draw	Identify patterns in results. Use scientific vocabulary to describe observations. Draw conclusions from evidence and measurements.
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		observations and data.		conclusions from evidence and measurements.	
Analysing and Concluding	Identify patterns in results. Compare observations and measurements. Draw conclusions using evidence. Explain how heating and cooling change materials. Use scientific vocabulary to justify findings. Evaluate predictions against results. Suggest improvements to investigations.	Identify patterns in observations and data. Compare living things based on their characteristics . Draw conclusions using evidence from classification. Explain how and why living	Identify patterns in diets, teeth and food chains. Compare evidence from observations and investigations. Draw conclusions using scientific evidence. Explain how food supports health and survival. Use scientific vocabulary to justify findings.	Identify patterns in pitch, volume and vibrations. Compare results from sound investigations. Draw conclusions using scientific evidence.	Identify patterns in how electrical circuits work. Compare complete and incomplete circuits. Draw conclusions using scientific evidence. Explain why some materials are conductors or insulators. Use scientific vocabulary to justify findings.



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	Communicate conclusions clearly using scientific language.	things are grouped. Use scientific vocabulary to justify findings. Evaluate predictions against results. Suggest improvements to investigations. Communicate conclusions clearly using scientific language.	Evaluate predictions against results. Suggest improvements to investigations. Communicate conclusions clearly using scientific language.	Explain how sound changes over distance and through materials. Use scientific vocabulary to justify findings. Evaluate predictions against results. Suggest improvements to investigations. Communicat	Evaluate predictions against results. Suggest improvements to investigations. Communicate conclusions clearly using scientific language.
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				e conclusions clearly using scientific language.	
Recording and Evaluating	● Record observations and results accurately using tables, charts and diagrams. ● Present findings clearly using appropriate scientific methods. ● Use scientific vocabulary to explain observations and results. ● Compare results with predictions. ● Draw conclusions using evidence from investigations. ● Evaluate the fairness and reliability of investigations. ● Suggest improvements to methods and enquiries. ● Communicate findings clearly using scientific language.				
Science Vocabulary	● Solid ● Liquid ● Gas ● Melt ● Freeze ● Evaporate ● Condense ● Water vapour ● Temperature ● Heating	● Living ● Habitat ● Environment ● Classification ● Classification key ● Vertebrate	● Digestive system ● Oesophagus ● Stomach ● Small intestine ● Large intestine ● Teeth ● Incisor ● Canine ● Molar	● Sound ● Vibration ● Pitch ● Volume ● Loud ● Quiet	● Electricity ● Circuit ● Cell ● Battery ● Wire ● Bulb (Lamp) ● Buzzer ● Switch ● Conductor



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	● Cooling ● Thermometer ● Reversible change ● Particle	● Invertebrate ● Organism ● Species ● Characteristics ● Group ● Identify ● Observe ● Compare	● Digestion ● Nutrient ● Producer ● Predator ● Prey ● Food chain	● Frequency ● Medium ● Travel ● Ear ● Sound source ● Distance ● High pitch ● Low pitch	● Insulator ● Complete circuit ● Incomplete circuit ● Appliance ● Electrical current
<i>‘Talk like a scientist ‘</i>	I observe that... I predict that... I noticed... The evidence shows...	I can identify... I classified this because... I observed that... The evidence	I observed that... I predict that... This food provides... The teeth are used for... The evidence shows...	I observed that... The vibrations caused...	I observed that... The circuit worked because... The bulb did not light because...



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	The material changed because... My conclusion is... This was a fair test because... I can explain that...	suggests... This organism belongs to... I compared... I concluded that... I can justify my answer because...	I concluded that... This animal is a... I can explain why...	The pitch changed because... The sound became louder/quieter because... The evidence shows... I predict that... I concluded that... I can explain why...	This material is a conductor/insulator because... The evidence shows... I predict that... I concluded that... I can explain why...
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