

Class 4 Science: Autumn Term 1 - 2026

Focus area in Nat Curriculum	States of matter		
NC objectives - key knowledge to learn	- 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; - Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.		
Enquiry Types	Identifying and classifying – sort materials into solids, liquids & gases Comparative tests – on which material does an ice cube melt fastest; what are the best conditions to dry washing Observe over time – how mass of ice cube changes over time Research - temperatures at which different materials melt; find out about the water cycle		
Relevant prior learning		<i>Prior learning</i>	<i>Teaching points/notes</i>
	Y1	Everyday materials: 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.	
	Y2	Uses of 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; Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	
	Y3	Rocks: Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties; Describe in simple terms how fossils are formed when things that have lived are trapped within rock; Recognise that soils are made from rocks and organic matter.	(Less relevant for this unit - other than principle of being able to classify and group on basis of different criteria)
	Y4	Recognise some common conductors and insulators, and associate metals with being good conductors.	New learning for 10 x Y4s in class. Ensure everyone is clear what a material is in science (Y1/2 learning).

	Y5		Note: Year 5s previously did this Y4 Unit when in Y3 because of the 2-year cycle. Re-cap prior learning and assess/ clarify any misconceptions. Adapt previous lessons so teaching / experiments are not repeated exactly but learning objectives are still met.
Enrichment opportunities	• Reading comprehension lessons looking at States of Matter • Homework - researching and answering questions about melting points of different materials • Use Explorify to spark curiosity - on which material would an ice cube melt fastest • Opportunities for cross-curricular writing eg create cartoon strip story of a water droplet (water cycle) or explanation text		
Assessment of learning	• Vocabulary - pre and post Unit assessment • Bath Spa Assessment - children plan an investigation to find the best conditions for drying materials (eg socks / fabric). Children meeting the objective would be able to explain or show how to set up the test, controlling some of the variables, for example, size of the material and amount of water. • Low-stakes quizzing and retrieval activities at start of lessons • Discussions - highlight misconceptions and clarify • Use of vocabulary when writing up investigations / ability to present data clearly in tables and graphs • Possible quiz at the end of topic		
Vocabulary	Link to Document		

Class 4 Science: Autumn term 2 - 2026

Focus area in Nat Curriculum	Properties and changes of materials		
NC objectives - key knowledge to learn	• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets; • Explore how some materials dissolve in liquid to form a solution, and describe how to recover a substance from a solution; • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating; • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic; • Demonstrate that dissolving, mixing and changes of state are reversible changes; • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.		
Enquiry Types	Identifying and classifying – classifying and sorting different materials Fair and Comparative tests – best materials as thermal insulators for a cup of tea; factors affecting speed for solids to dissolve (TAPS assessment) Observe over time – how different materials do / don't dissolve over time; what happens to nails left in salt water; observing filtering and evaporating as methods to separate mixtures; reversible / irreversible changes such as observing a fizzy tablet and melted chocolate. Research – investigate properties of different materials and why used for particular purposes. Homework - research chemists who create new materials.		
Relevant prior learning		<i>Prior learning</i>	<i>Teaching points/notes</i>
	Y1	Everyday materials: 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.	
	Y2	Uses of 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; Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	
	Y3	Rocks:	(Less relevant for this unit - other than principle of being able to

		Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties; Describe in simple terms how fossils are formed when things that have lived are trapped within rock; Recognise that soils are made from rocks and organic matter.	classify and group on basis of different criteria)
	Y4	States of Matter: 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; Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Electricity: Recognise some common conductors and insulators, and associate metals with being good conductors.	All children have just completed this unit in Autumn 1. 10 x current Y4s not yet covered Electricity. When/if sorting materials on basis of their conductivity, will need to pre-teach this concept.
	Y5		Year 5s covered electricity when in Y3. Initial lesson as assessment opportunity for all children - explore different materials in school environment and their properties; discuss different ways to sort materials - recap on key vocab and address any misconceptions.
Enrichment opportunities	• Homework - further research about properties of different materials and why they are used for particular purposes • Homework - research a scientist and what their invention was e.g. Spencer Silver, who invented glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton; polymers, super-sticky and super-thin materials. • Reading comprehension activities - properties of materials • Link to DT Unit on Cam Toys - which materials are best for each part of our design and why		
Assessment of learning	• Vocabulary - pre and post Unit assessment • Bath Spa Assessment - children plan a fair test to investigate factors affecting the speed at which solids dissolve in water. Record results and interpret. Those meeting the objective would plan a fair test identifying one thing to change, one thing to measure/observe and important factors to keep the same. • Low-stakes quizzing and retrieval activities at start of lessons • Discussions - highlight misconceptions and clarify • Use of vocabulary when writing up investigations eg. observe, variables, prediction, conclusion / ability to present data clearly in tables and graphs • Possible end of unit quiz		
Vocabulary	Link to Document		