



Properties and Changes of Materials – Year 5 Unit – Year D

Retrieval vocab: Properties, materials, solid, liquid, gas, melting, evaporating, condensing, particles. New Vocab Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material.		Previous learning • 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 squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials) • Compare and group materials together, according to whether they are solids, liquids or gases. (Y4 - States of matter) • 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). (Y4 - States of matter) • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (Y4 - States of matter)				Links with Vision and Values. <i>Stimulate in every child a sense of curiosity and excitement about the world</i>
	Working scientifically/ enquiry focus	Curriculum Strand/ Focus	Small step objective	Previous learning within the unit.	Lesson content	Outcome
1	Identify/Classify	Properties and changes in Materials	Compare and group materials according to whether they are solids, liquids or gases and name their properties.	N/A	What are the properties of solids, liquids and gases?	The children can: Name examples of solids, liquids and gases, identifying the properties of each type of material. They will understand how states of matter change and name some of these processes.
2	Identify/ classify	Properties and changes in Materials	Describe the properties of materials using scientific vocabulary.	As above <i>name examples of solids, liquids and gases, identifying the properties of each type of material. They will understand how states of matter change and name some of these processes.</i>	How can I describe the properties of materials?	The children can: Describe the properties of materials using the scientific vocabulary taught in the lesson.



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3	Comparative/ Fair testing	Properties and changes in Materials	Investigate the thermal insulation of different materials.	<i>As above Describe the properties of materials using the scientific vocabulary taught in the lesson.</i>	Which materials make the best thermal insulators?	The children can: Plan and conduct a fair test investigation to answer a question about thermal insulation. They will interpret their results and conclude using scientific vocabulary.
4	Identify /classify Pattern seeking	Properties and changes in Materials	Compare and group materials based on their response to magnets.	<i>As above Plan and conduct a fair test investigation to answer a question about thermal insulation. They will interpret their results and conclude using scientific vocabulary.</i>	Which materials are magnetic?	The children can: Predict, test and group materials according to their magnetic properties.
5	<u>Identify/ classify</u>	Properties and changes in Materials	Explain that some materials dissolve in a liquid to make a solution.	<i>As above Predict, test and group materials according to their magnetic properties.</i>	Which materials are soluble and which are insoluble?	The children can: Understand that some materials dissolve in a liquid to make a solution. They will be able to explain the process of dissolving using scientific vocabulary (soluble, insoluble, solution) and understand that solutions have a saturation point.



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6		Properties and changes in Materials	Investigate how we can separate mixtures.	<i>As above Understand that some materials dissolve in a liquid to make a solution. They will be able to explain the process of dissolving using scientific vocabulary (soluble, insoluble, solution) and understand that solutions have a saturation point.</i>	How can we separate mixtures?	The children can: Understand that they can separate some mixed materials through various processes (evaporation, filtering, sieving or using magnets). They will be able to predict how they could separate mixtures depending on the properties of the mixed materials.
7		Properties and changes in Materials	Explain why some changes are irreversible.	<i>As above Understand that they can separate some mixed materials through various processes (evaporation, filtering, sieving or using magnets). They will be able to predict how they could separate mixtures depending on the properties of the mixed materials.</i>	What is irreversible change?	The children can: Identify the difference between irreversible and reversible change. They will be able to give examples of each type of change.