

Medium Term plan Science topic: Properties and changes of materials Year Group: 5 Term: Autumn

Working Scientifically Objectives which are covered in this unit:

Asking questions and recognising that they can be answered in different ways

Making observations and taking measurements

Engaging in practical enquiry to answer questions

Recording and presenting evidence

Answering questions and concluding

Evaluating and raising further questions and predictions

Communicating their findings.

National Curriculum Objectives for Science Unit

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

know that some materials will 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

Lesson sequence	Initial assessment	LO: Compare and	LO: Know that some	LO: describe how to	LO: Use knowledge of	LO: Give reasons,	LO: describe how to	LO: Give reasons,	LO: Demonstrate that	LO: Explain that
		group together	materials will	recover a substance	solids, liquids and gases	based on evidence	recover a substance	based on evidence	dissolving, mixing and	some changes
include WALTs/LOs	WS: Asking questions	everyday materials on	dissolve in liquid to	from a solution	to decide how mixtures	from comparative	from a solution	from comparative	changes of state are	result in the
and key concept:		the basis of their	form a solution		might be separated	and fair tests, for the		and fair tests, for the	reversible changes	formation of new
and key concept.	Give children a range of	<u>properties</u>				particular uses of	<u>Assessment</u>	particular uses of		<u>materials</u>
	vocabulary from prior		WS: Making	WS: Engaging in	WS: Engaging in	everyday materials		everyday materials	WS: Evaluating and	
	learning and group	WS: Recording and	observations and	practical enquiry to	practical enquiry to				raising further	
	them into	presenting evidence	taking	answer questions	answer questions	WS: Engaging in	WS: Engaging in	WS: Engaging in	questions and	
	know/unknown.		measurements			practical enquiry to	practical enquiry to	practical enquiry to	predictions	Research new
		use understanding of				answer questions	answer questions	answer questions		materials
	Then chn offer a	properties to explain		give reasons for	use knowledge of					produced by
	definition based on	everyday uses of	explain what	choice of equipment	liquids, gases and solids				describe some simple	chemists e.g.
	what they know and a	materials, for	dissolving means,	and methods to	to suggest how	Carry out	give reasons for	Carry on from	reversible and non-	Spencer Silver
	diagram.	example, how bricks,	giving examples	separate a given	materials can be	comparative and fair	choice of equipment	previopus lesson.	reversible changes to	(glue of sticky
		wood, glass and		solution or mixture	recovered from	tests involving non-	and methods to	explain the results	materials, giving	notes) and Ruth
		metals are used in	Practical task	such as salt or sand in	solutions or mixtures by	reversible changes	separate a given	from their	examples	Benerito (wrinkle
		building		water	evaporation, filtering or	e.g. What affects the	solution or mixture	investigations		free cotton)
			Explore adding a		sieving	rate of rusting? What	such as salt or sand		Explore a range of	
		create a chart or table	range of solids to			affects the amount	in water		non-reversible	
		grouping/comparing	water and other		Give reasons for choice	of gas produced?			changes e.g. rusting,	
		everyday materials by	liquids e.g. cooking		of equipment and				adding fizzy tablets to	
		different properties	oil, as appropriate		methods to separate a				water, burning.	
					given solution or					
					mixture such as salt or					
					sand in water					

Key vocabulary to be explicitly taught	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material
Cross –curricular links	Maths – presenting information using diagrams (Venn/Carrol diagram) ICT – Producing results data and presenting them using a variety of graphs English – Report writing of conclusions of an experiment Art – using a diagram to display results of an experiment