

Progression of knowledge science – Materials (Chemistry)

Threshold Concepts This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5
changed.						
KS1	Use all their senses	Correctly identify	Identify what	Group different	Know that all	Compare and
Distinguish between an object	in hands on	and name an	properties a	kinds of rocks on	things are made up	group together
and the material from which it is	exploration of	object and the	material needs for	the basis of	of particles.	everyday
made.	natural materials	material from	a particular	appearance and	Know that	materials on the
Identify and name a variety of		which it is made.	purpose.	simple physical	particles are	basis of their
everyday materials, including	• Explore	 Identify and 	Name the	properties, (see	arranged	properties,
wood, plastic, glass, metal, water	collections of	name a variety of	materials from	vocabulary	differently in	including their
and rock.	materials with	everyday materials,	which different	appendix for	solids, liquids and	hardness,
Describe the simple physical	similar and/or	including wood,	objects are made.	examples).	gases.	solubility,
properties of a variety of everyday	different	plastic, glass,	Recognise	Compare	Name properties	transparency,
materials.	properties	metal, water and	suitable and	different kinds of	of solids, liquids	conductivity
Compare and group together a	Discuss the	rock.	unsuitable choices	rocks on the basis	and gases.	(electrical and
variety of everyday materials on	differences	Describe the	of materials for	of appearance and	Compare and	thermal), and
the basis of their simple physical	between materials	simple physical	particular purposes	simple physical	group materials	response to
properties.	and changes they	properties (see	based on physical	properties, (see	together according	magnets.
• Find out how the shapes of solid	notice	vocabulary	properties (see	vocabulary	to if they are solids,	Discuss the
objects made from some	 Understand 	appendix for	vocabulary	appendix for	liquids and gases,	suitability of
materials can be changed by	some important	examples) of a	appendix for	examples).	giving reasons to	everyday
squashing, bending, twisting and	processes and	variety of everyday	examples).	Name the 3 types	justify their	materials for
stretching.	changes in the	materials.	Identify and	of rock.	choices.	different
Identify and compare the	natural world	Compare a	compare the	Describe the	Observe that	purposes based
suitability of a variety of everyday	around them,	variety of everyday	suitability of a	features of each	some materials	on their
materials, including wood, metal,	including the	materials on the	variety of everyday	rock type.	change state when	properties,
plastic, glass, brick/rock, and	seasons and	basis of their	materials, including	Describe how	heated or cooled,	giving reasons,
paper/cardboard for particular	changing states of	simple physical	wood, metal,	each rock type is	and are able to	based on
uses.	matter. 1	properties.	plastic, glass, brick,	formed within the	give everyday	evidence from
	(Everyday	Group together a	rock, paper and	rock cycle.	examples of	comparative and
LKS2	materials)	variety of everyday				fair tests.



Progression of knowledge so	ience – Materials	s (Chemistry)				C PRIMAPTS
Rocks and Soils		materials on the	cardboard for	Name some	melting and	Know the
 Compare and group together 		basis of their	particular uses.	different rocks and	freezing.	difference
different kinds of rocks on the		simple physical	 Know that 	categorise them	 Understand that 	between
basis of their simple,		properties. 2 (Uses	materials can be	based on physical	melting and	reversible and
physical properties.		of everyday	either man-made	features.	freezing are a state	irreversible
 Relate the simple physical 		materials	or naturally	 Understand 	change between	changes.
properties of some rocks to their			occurring.	different uses for	solids and liquids.	Demonstrate
formation (igneous or			 Group objects 	different rocks and	 Measure or 	that dissolving,
sedimentary).			into man-made or	how they change	research the	mixing and
 Describe in simple terms how 			natural categories.	over time.	temperature at	changes of state
fossils are formed when things			 Find out how the 	 Explain simply 	which melting and	are reversible
that have lived are trapped			shapes of solid	how a fossil is	freezing occurs for	changes.
within sedimentary rock.			objects made from	formed.	some materials.	Explain that
 Recognise that soils are made 			some materials can	 Recognise that 	 Know that water 	some changes
from rocks and organic matter.			be changed by	soils are made	freezes at Ooc and	results in the
States of Matter			squashing,	from rocks and	boils at 100oc.	formation of
 Compare and group materials 			bending, twisting	organic matter,	 Understand that 	new materials,
together, according to whether			and stretching.	(living and dead)	condensation is a	and that this
they are solids, liquids or gases.				and be introduced	state change from	kind of change is
 Observe that some materials 				to different soil	a gas to a liquid.	not usually
change state when they are				types.	 Understand that 	reversible,
heated or cooled, and measure					evaporation is a	including
the temperature at which this					state change from	changes
happens in degrees Celsius (°C),					liquid to gas.	associated with
building on their teaching					 Understand that 	burning and the
in mathematics.					boiling and	action of acid on
 Identify the part played by 					evaporation are	bicarbonate of
evaporation and condensation in					the same state	soda.
the water cycle and associate					change from liquid	Understand
the rate of evaporation with					to gas but at	some materials
temperature.					different	will dissolve in
					temperatures.	liquid to form a
UKS2					 Know that the 	solution.
 Compare and group together 					speed of	
everyday materials based on					evaporation	
evidence from comparative and					depends on a	



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fair tests, including their hardness,				number of	
solubility, conductivity (electrical				variables including	
and thermal), and response to				the temperature.	
magnets.				 Describe the 	
 Understand how some materials 				water cycle.	
will dissolve in liquid to form a				 Identify the parts 	
solution and describe how to				played by	
recover a substance from a				evaporation and	
solution.				condensation in	
 Use knowledge of solids, liquids 				the water cycle.	
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, oxidisation and the					
action of acid on bicarbonate of					
soda.					

Progression of skills to KS3 are detailed on materials / trust science sheets
Links from Reception Development Matters are detailed on the Reception Termly Planning Document