Name:	Class:	Teacher:

Materials and changes (information and facts)

ARE	NAPS	Materials: properties and uses	Materials: changes in state
Pre-KS 1	**S4**	Explore objects and materials provided	Change materials by physical means and observe the outcomes e.g. mixing flour and water
	S5	Match objects and materials in terms of a single feature or property e.g. temperature	Indicate the before and after of material changes
	S6	Recognise the distinctive features of an object e.g. wheels on a bike Sort materials according to a single criterion when the contrast is obvious e.g. hot and cold, dry or wet	Make predictions about everyday observable events e.g. an ice cream will melt
	S7	Identify and name a variety of materials including wood, plastic, wood, glass, water *and rock* Explore and experiment with objects made from familiar materials	-
	S8	Begin to distinguish between an object and the material from which it is made Identify objects made from wood, plastic, glass, metal Explore and experiment with a wide range of materials	-
	S9	Sort hard and soft objects, stretchy and stiff objects, bendy and rigid objects Sort transparent and opaque objects, shiny and dull objects, rough and smooth objects Sort waterproof and not waterproof objects, absorbent and not-absorbent Suggest one property of wood and on property of glass Identify other materials e.g. brick, soil, paper, elastic	-

	S10	Group a variety of everyday materials based on simple physical properties Independently use the words waterproof and not waterproof; absorbent and not absorbent Independently use the words hard and soft, stretchy and stiff, bendy and not bendy; transparent and opaque, shiny and dull, rough and smooth	-
KS1	**S11**	Confidently state the material that an object is made from Explain groupings of everyday materials based on simple physical properties Confidently identify an object that is opaque / transparent, soft / hard, shiny / dull etc Suggest a use for a material based on its properties	-
	S12	Based on their properties recognise solids, liquids and gases Recognise that solid objects are affected by simple forces e.g. squashing, bending, twisting, stretching Independently give reasons why materials are used for a specific purpose	-
Lower KS2	**S13**	Compare and group materials as solids. Liquids, gases Independently group materials based on their properties including hardness, solubility, transparency, conductivity Give reasons based on evidence for the particular uses of everyday materials including metals, wood and plastic	Understand the words dissolve and solution Use the words evaporation and condensation Recognise that some objects change state when they are heated or cooled
	S14	Recognise the Earth as a source of limited resources and the efficacy of recycling	Can use and describe filtering, sieving and evaporation Identify the part played by evaporation and condensation in the water cycle Research and / or measure the temperature at which some materials change state

			Can associate the rate of evaporation with temperature
Upper KS2	**S15**	Begin to recognise some chemical symbols and formulae for elements and compounds Use the pH scale to measure acidity / alkalinity	Describe the properties of different states of matter in terms of the particle model, including gas pressure Can demonstrate that dissolving, mixing and changes of state are reversible changes Can use and describe distillation and chromatography
	S16	Compare materials based on their properties including hardness, solubility, transparency, conductivity, and their response to magnets Become familiar with the periodic table and principles underpinning it, including periods, groups, metals, non-metals Know the difference between atoms, elements and compounds	Can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible (irreversible), including the changes associated with burning and the action of acids on bicarbonate of soda Know which common materials dissolve in liquids to form a solution Suggest how mixtures might be separated Describe changes in the state of matter in terms of the participle model Define acids and alkalis in terms of neutralisation reactions