

Materials	Key learning	Possible evidence	Knowledge at end of unit	Vocabulary at end of unit	
Year 1	1. distinguish between an object and the material from which it is made 2. identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock 3. describe the simple physical properties of a variety of everyday materials 4. compare and group together a variety of everyday materials on the basis of their simple physical properties	Can label a picture or diagram of an object made from different materials Can name different materials by touch Can match a material to its name Can describe the properties of different materials Can state which materials would be most appropriate for a particular task Can group and sort objects that are made from different materials.	All objects are made of one or more materials. Some objects can be made from different materials e.g. plastic, metal or wooden spoons. Materials can be described by their properties e.g. shiny, stretchy, rough etc. Some materials e.g. plastic, can be in different forms with very different properties but still categorised as plastic Can identify and name everyday materials according to its characteristics and group accordingly e.g. wood, plastic, etc	Object Material Wood plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool,	hard, soft, stretchy, stiff, bendy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, transparent opaque
Year 2	1. identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses 2. find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Can name an object, say what material it is made from, identify its properties and make a link between the properties and a particular use Can label a picture or diagram of an object made from different materials For a given object can identify what properties a suitable material needs to have Whilst changing the shape of an object can describe the action used Can use the words flexible and/or stretchy to describe materials that can be changed in shape and stiff and/or rigid for those that cannot Can recognise that a material may come in different forms which have different properties	All objects are made of one or more materials that are chosen specifically because they have suitable properties for the task. For example, a water bottle is made of plastic because it is transparent allowing you to see the drink inside and waterproof so that it holds the water. When choosing what to make an object from, the properties needed are compared with the properties of the possible materials, identified through simple tests and classifying activities. A material can be suitable for different purposes and an object can be made of different materials. Objects made of some materials can be changed in shape by bending, stretching, squashing and twisting. For example, clay can be shaped by squashing, stretching, rolling, pressing etc. This can be a property of the material or depend on how the material has been processed e.g. thickness.	As year 1 + Opaque transparent and translucent, flexible rigid Shape twist/twisting squash/squashing Bend/bending stretch/stretching properties suitability	

Year 4	1. compare and group materials together, according to whether they are solids, liquids or gases 2. 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) 3. identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Can create a concept map, including arrows linking the key vocabulary Can name properties of solids, liquids and gases Can give everyday examples of melting and freezing Recognise that different solids melt at different temperatures; that different liquids freeze at different temperatures and take longer to melt etc. Can give everyday examples of evaporation and condensation Can describe the water cycle using labelled diagrams	Know a solid keeps its shape and has a fixed volume. A liquid has a fixed volume but changes in shape to fit the container. A liquid can be poured and keeps a level, horizontal surface. A gas fills all available space; it has no fixed shape or volume. Granular and powdery solids like sand can be confused with liquids because they can be poured, but when poured they form a heap and they do not keep a level surface when tipped. Each individual grain demonstrates the properties of a solid. Know melting is a state change from solid to liquid. Freezing is a state change from liquid to solid. The freezing point of water is 0°C. Boiling is a change of state from liquid to gas that happens when a liquid is heated to a specific temperature and bubbles of the gas can be seen in the liquid. Water boils when it is heated to 100°C. Evaporation is the same state change as boiling (liquid to gas) but it happens slowly at lower temperatures and only at the surface of the liquid. Evaporation happens more quickly if the temperature is higher, the liquid is spread out or it is windy. Condensation is the change back from a gas to a liquid caused by cooling. State stages in the water cycle. Water at the surface of seas, rivers etc. evaporates into water vapour (a gas). This rises, cools and condenses back into a liquid forming clouds. When too much water has condensed the water droplets in the cloud get too heavy and fall back down as rain, snow, sleet etc. and drain back into rivers etc. This is known as precipitation.	Solid, Solidifying Particles Thermometer liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle precipitation condensation water vapour
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Year 5	1. 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 2. know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution 3. use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 4. give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 5. demonstrate that dissolving, mixing and changes of state are reversible changes 6. 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	Can compare materials according to their properties Can explain what dissolving means, giving examples Can name equipment used for filtering and sieving Can use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving Can use understanding of properties to explain everyday uses of materials. For example, how bricks, wood, glass and metals are used in buildings Chn know when reversible changes are likely to occur and how to regain the original materials. State that when irreversible changes happen that the original materials are combined or burned, chemical changes occur.	Materials have different uses depending on their properties and state (liquid, solid, gas). Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets. Some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment. Mixtures can be separated by filtering, sieving and evaporation. Know materials are chosen for particular jobs based on their properties such as conductivity, flexibility, magnetism etc Some changes to materials such as dissolving, mixing and changes of state are reversible, but some changes such as burning wood, rusting and mixing vinegar with bicarbonate of soda result in the formation of new materials and these are not reversible.	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/irreversible change, burning, new material /new product solid, gas evaporating transparency evaporation
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