

In this unit: Pupils will revisit their knowledge of properties of materials including the suitability of different materials for different purposes. They will explore how to dissolve materials in different liquids and how to reverse this. They will investigate some changes that are not reversible.

Children should already know:

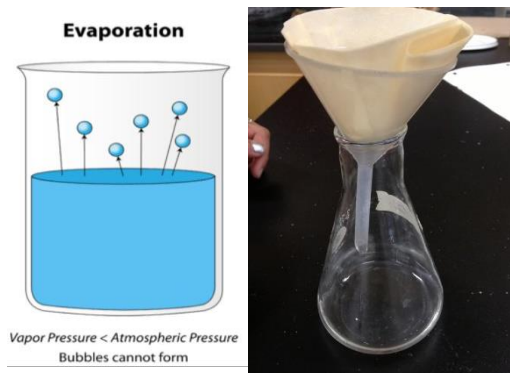
- the suitability of materials based on their properties.
- how shapes of a solid structure can be changed by squashing, bending, twisting and stretching.
- materials that are solids, liquids and gases and their particle structure.
- some materials change state when they are heated or cooled and the temperature at which this happens.
- the roles of melting, evaporation and condensation in the water cycle and the role temperature has on the rate of evaporation.

At the end of this unit, children will know:

- that materials can be grouped based on their properties using complex vocabulary.
- that thermal conductors all heat to pass through them easily.
- that thermal insulators do not let heat travel through them easily.
- that electrical conductors allow heat to pass through them easily.
- that electrical insulators have a high resistance which means that it is hard for electricity to pass through.
- that when particles of a solid mix with particles of a liquid they dissolve and these materials are known as soluble.
- that some materials can be separated after they have been mixed and this is called a reversible change.

Pupils could investigate:

- which materials are soluble.
- how materials can be retrieved after they have been dissolved.
- whether solid materials can be retrieved from all liquids.
- whether some materials cause an irreversible change.



Key Vocabulary

acid	a chemical with a pH less than 7
alkaline	a chemical with a pH greater than 7
conductor	a substance or material that heat or liquid can pass through or along
dissolve	when a solid substances disappears as it is mixed with a liquid
filtering	separating a solid from a liquid or gas by passing it through paper
hardness	the quality of being hard
insulator	a material that does not conduct electricity or heat
irreversible	not able to turn back of change back into its original state
neutral	a chemical with a pH of 7 – water
pH scale	a way of measuring the strength of chemicals
reaction	a chemical process in which substances act on each other and are changed into different substances
reversible	able to turn back or change back to its original state
sieving	a way of separating coarser from finer particles
soluble	able to be dissolved
transparency	the quality of being able to see through something

Key Questions:

- how can I get salt out of water?
- why are wires made out of copper?
- why are pans metal?
- why do wires have rubber or plastic around them?
- what happens when salt is mixed with acid?