

# Year 5 – Properties and changes of materials

## Key Knowledge and skills

- 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.

**Key Knowledge**  
Reversible changes, such as mixing and dissolving **solids** and **liquids** together, can be reversed by:

Sieving	Filtering	Evaporating
Smaller <b>materials</b> are able to fall through the holes in the sieve, separating them from larger particles.	The <b>solid</b> particles will get caught in the filter paper but the <b>liquid</b> will be able to get through.	The <b>liquid</b> changes into a <b>gas</b> , leaving the <b>solid</b> particles behind.

## Do you remember learning?

Identifying and comparing the suitability of materials for certain uses in year 2. In magnetism in year 3, you learned to compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. In year 4 you learned the changing states of solids, liquids and gases.

## Key knowledge

### Key Knowledge

Different **materials** are used for particular jobs based on their properties: electrical **conductivity**, flexibility, hardness, **insulators**, magnetism, solubility, thermal **conductivity**, **transparency**.

	For example, glass is used for windows because it is hard and <b>transparent</b> .	
	Oven gloves are made from a thermal <b>insulator</b> to keep the heat from burning your hand.	

<b>solid</b> particles		<b>liquid</b> particles		<b>gas</b> particles	
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### Changes of State

<b>solid</b>		The <b>solid</b> melts.		<b>liquid</b>
		The <b>liquid</b> freezes.		
<b>liquid</b>		The <b>gas</b> condenses.		<b>gas</b>
		The <b>liquid</b> evaporates.		