NPA Knowledge Organiser: Year 5 Science – Autumn 1

Dissolve – A solid that completely mixes with a liquid and cannot be seen.

Electrical conductor – Allows electricity to pass through it.

Electrical Insulator –Does not allow electricity to pass through it.

Evaporation – Separates a soluble solid and a liquid.

Filter – Separates an insoluble solid that is mixed in a liquid.

Sieve – Separates solids of different sizes.

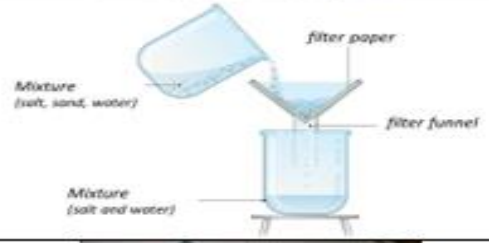
Soluble – Solids and gases that dissolve in liquids.

Insoluble – Solids and gases that do not dissolve in a liquid.

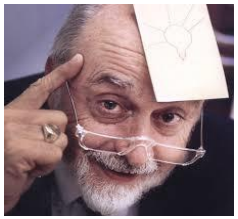
Reversible change – Changes that can be switched back and are not permanent. E.g. dissolving, melting and freezing.

Properties and Changes of Materials

Separating materials

Sieving separates the stones and twigs from the soil.	
Filtering separates the sand from the mixture.	
Evaporating separates the dissolved salt from the water.	

Spencer Silver (1941 – Present)



Spencer Silver is an American scientist who together with Arthur Fry was the inventor of Post-it notes in 1974. At the time, he was working to develop new classes of adhesives.

https://www.bbc.co.uk/bitesize/topics/zryycdm

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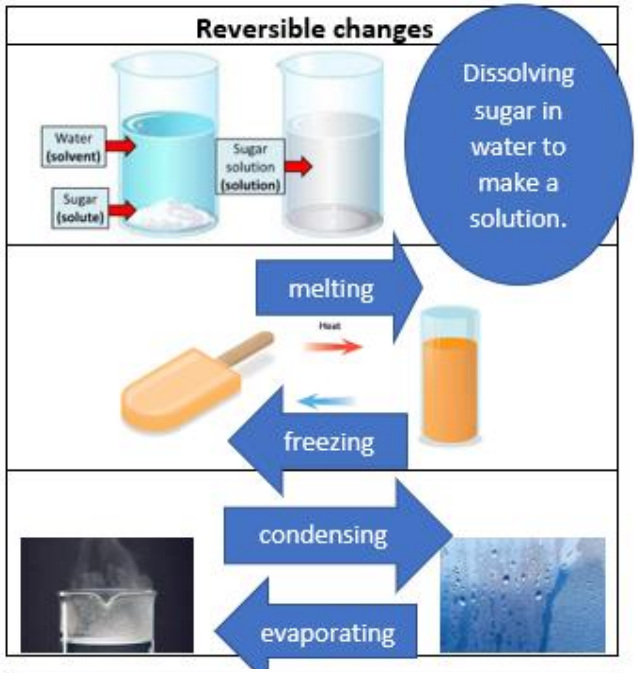

Non-reversible changes - these result in the formation of new materials

Burning	
Mixing vinegar and bicarbonate of soda	
Rusting	

Materials can be grouped together based on their properties. For example:

- **hardness**
- **solubility**
- **transparency**
- **thermal conductivity**
- **electrical conductivity**
- **response to magnets**

By the end of this unit, you will be able to:

•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, including changes associated with burning and the action of acid on bicarbonate of soda

"If I had thought about it, I wouldn't have done the experiment. The literature was full of examples that said you can't do this." –Spencer Silver