Properties and changes of materials – Year 5

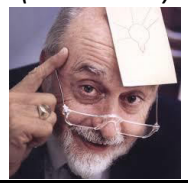
Key vocabulary	
thermal insulator	Does not allow heat to pass through it easily.
thermal conductor	Allows heat to pass through it easily.
electrical insulator	Does not allow electricity to pass through it.
electrical conductor	Allows electricity to pass through it.
dissolve	A solid that completely mixes in with a liquid and cannot be seen.
solution	A mixture of a liquid with a dissolved solid or gas.
soluble	Solids and gases that dissolve in liquids.
insoluble	Solids that do not dissolve in a liquid.
sieve	Separates solids of different sizes.
filter	Separates an insoluble solid that is mixed in a liquid.
evaporation	Separates a soluble solid and a liquid.
reversible change	Changes that can be switched back and are not permanent. E.g. dissolving, melting, freezing
non-reversible change	Changes that can not be reversed back to their original state. E.g. burning, rusting

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

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

Significant scientists

Spencer Silver *(born 1941)*

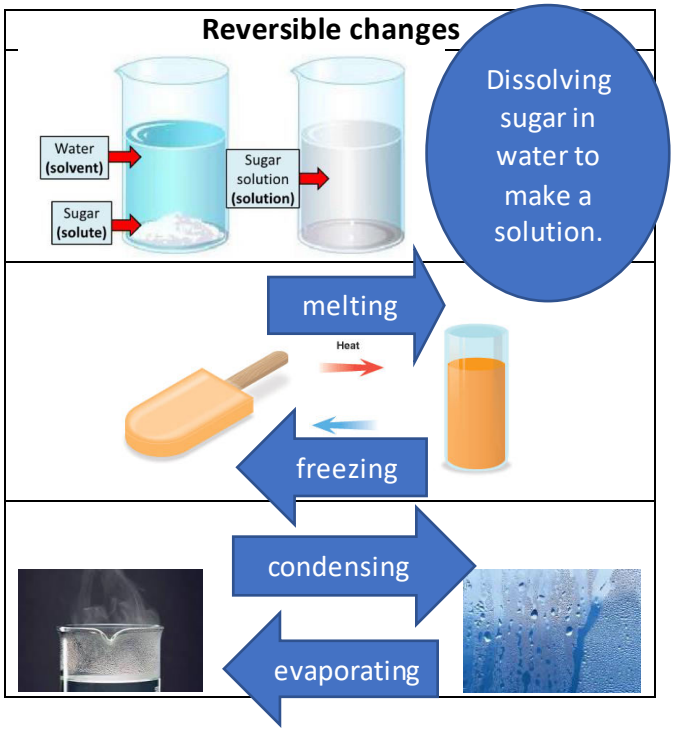


Spencer Silver is an American scientist who together with Arthur Fry was the inventor of Post-it notes in 1974. At the time, he was working to develop new classes of adhesives.

Joe Keddie

Joe Keddie is a professor of Soft Matter Physics at the University of Surrey. He is interested in the fundamental processes of soft matter, especially polymer thin films and nanoparticles.

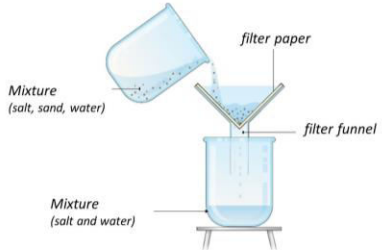
Reversible changes



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.

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

Burning	
Mixing vinegar and bicarbonate of soda	
Rusting