Hollingworth Primary School Knowledge Organiser

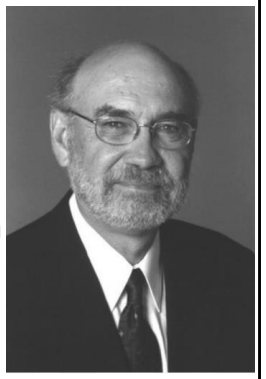
Topic: Materials and their properties

Year: 5

Strand: Chemistry

Famous scientist

Spencer Silver was born in 1941 in San Antonio, Texas, USA. He is a retired American chemist who specialised in adhesives.



In 1968 he developed a low-tack adhesive which was strong enough to hold paper together, but weak enough to allow the papers to be pulled apart without ripping.

Art Fry developed bookmarks using Silver's adhesive. Since 1980, the notes have been sold worldwide as Post-it Notes.

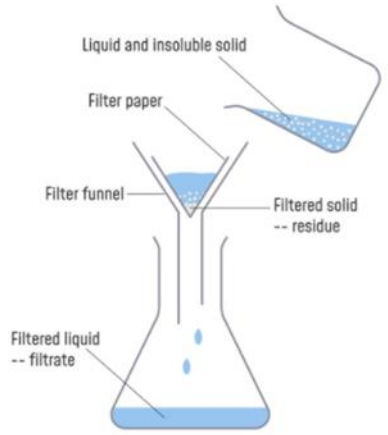
What should I already know?

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)

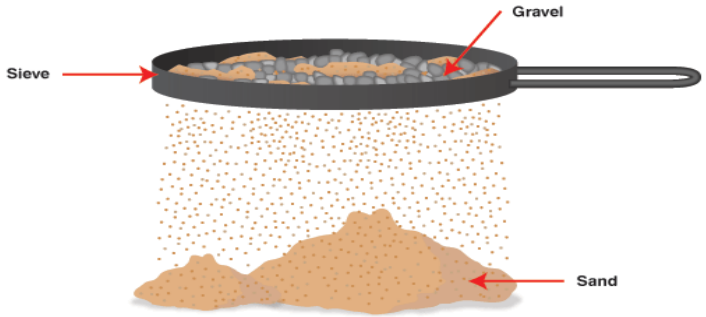
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. (Y3 - Forces and magnets)
- Compare and group materials together, according to whether they are solids, liquids or gases. (Y4 - States of matter)
- 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). (Y4 - States of matter)
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (Y4 – States of matter)

Separating materials

Filtration is used to separate solids and liquids.



Sieving is used to separate dry mixtures.



Vocabulary Dozen

burning	the consumption of a **material** producing flames and heat
dissolve	when one substance becomes incorporated into a liquid so as to form a **solution**
filter	a device for removing solid particles from a liquid or gas
insoluble	incapable of being **dissolved**
mixture	a **substance** made by mixing other **substances** together
new material	**non-reversible changes** often result in a new product being made from the old **materials,** for example **burning** wood produces ash
non-reversible change	in a non-reversible change a **new material** is formed which cannot be changed back
rusting	the chemical reaction of iron, water and oxygen resulting in the new material rust
soluble	capable of being **dissolved** in water
solution	a specific type of **mixture** where one **substance** is **dissolved** into another
substance	physical material from which something is made
change of state	the process of turning a substance to or from a solid, liquid or gas by changing its temperature

Reversible and irreversible changes.

- Chemical changes result in a new material being formed. These changes are usually irreversible.
- Physical changes result in the shape, but not the material, being changed. These changes do not result in new materials and are often reversible.