

# Science—Year 5—Properties and Changes of Materials

## Key Knowledge

- Hard materials will not be marked when scratched by a nail.
- Transparent materials will let light pass through it. Opaque objects will not.
- A material which allows electricity to pass through it is called an electrical conductor. Most metals are electrical conductors. Glass, paper, wood, card, plastic and fabric are not.
- A material which allows heat to pass through it is called a thermal conductor. Most metals are good thermal conductors. Glass, paper, wood, card, plastic and fabric are not.
- Objects that do not allow electricity or heat to pass through them are called insulators.
- Materials that are attracted to magnets are called magnetic. Iron, and stainless steel are magnetic. Glass, paper, wood, card, plastic, gold, silver and fabric are not.
- Objects are made from particular materials because of their properties. A plug is made from plastic because it is not a conductor of electricity. A green house is made of glass because it is transparent and lets light through. A sauce pan handle is made from plastic because it is a poor conductor of heat.
- Sugar and salt will dissolve in water to form a solution. Sand will not dissolve in water and this will form a mixture.
- Sand and other large particle mixtures can be retrieved through filtering, sieving, magnetism and evaporation.
- Sugar and salt can be retrieved from a water solution by evaporation. The sugar and salt particles in a water solution are too small and will pass through filter paper and sieves.
- A reversible change is **a change that can be undone or reversed**. Irreversible changes cannot be changed or reversed and often create a new material.
- Water that is frozen to make ice, dissolving salt/sugar in water, chocolate that is heated will melt are all reversible changes.
- A raw egg being cooked, a mixture of vinegar and bicarbonate of soda, the burning of a candle are all irreversible changes,.

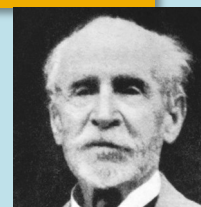
## Vocabulary

solubility	soluble	Irreversible change	strong/weak
electrical conductivity	insoluble	burning	rough
thermal conductivity	particle	gas given off	smooth
melting	mix/mixture	rusting	transparent
states of matter	filtering	hard	opaque
solid	sieving	soft	translucent
liquid	evaporating	stretchy	magnetic
gas	residue	rigid	
Change of state	condensing	flexible	
dissolve	reversible changes	waterproof	
solution	new material	absorbent	



## Key People

**Frederick Walton**  
(1834-1928): linoleum  
invented in 1860.



**Harry Brearley**  
(1871-1948) invent-  
ed stainless steel in  
1913.

