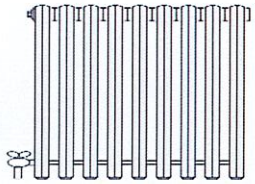
MATERIALS

KEEPING COOL

Thermal Insulators - Do not let heat travel through easily such as fabrics, wood and plastics. Can keep heat in or out.

Thermal Conductors - Lets heat travel easily through such as metals.



When things get hot, atoms start to vibrate. Heat produces energy. This could cause them to change state!

Reversible and Irreversible Changes

The following cycle is one which is *reversible*. (They can be changed back or reversed by adding heat or by cooling down).

Ice (melts into water) > Water (evaporates into steam)>
Steam (condenses into water) > Water (freezes into ice) >

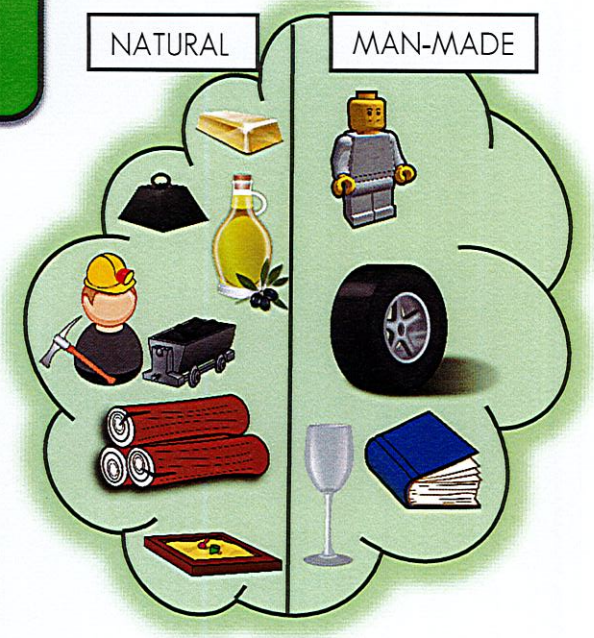
The following examples are ones which are irreversible. (They can NOT be changed or reversed by adding heat or cooling down).

cooking an egg 

burning wood 

An electrical conductor lets electricity pass through. They are often metals but it also includes water.

An electrical insulator does not let electricity pass through.



Separating Materials

SIEVING - A way to separate two solids of different sizes (e.g. flour and raisins).
FILTRATION - A mixture of liquids and solids which haven't dissolved can be filtered using paper with tiny holes (e.g. sand and water).
EVAPORATION - A solid dissolved in a liquid (solution) can be heated. Liquid evaporates and leaves behind the solid (e.g. salt and water solution).
MAGNETISM - Metal attracts to the magnet, leaving behind the other solid (e.g. paper clips and matchsticks).

Three states of matter:

SOLID: particles close together / vibrate around a fixed position
LIQUID: particles close but randomly arranged / move around
GAS: particles far apart and randomly arranged / move around

DISSOLVING

Dissolving is when the particles of solids mix with particles of liquids, often appearing like it has disappeared but it has dissolved in the liquid to make a transparent solution (e.g. mixing sugar into water). It does not always need heat to occur. If a material does not dissolve it is *insolubale*. If it does, it is *soluble*.

MELTING

Involves only solids which change into a liquid due to heat. They stay as the same material (e.g. ice to water).