



structure of material

everything made from **atoms** and **molecules**

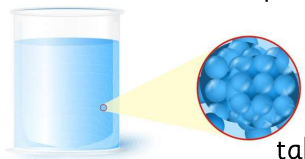
atom = smallest known part of any material

molecule = two or more atoms, bonded

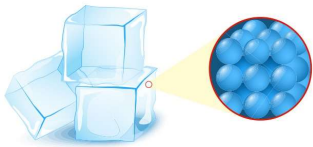
particles = atoms + molecules



gas
air-like
can flow
no fixed shape
particles **moving apart** quickly





liquid
can flow
take shape of the container
particles **very close** but not fixed




solid
own shape
can't flow
fixed volume
particles **very close** and fixed position





uses and properties of materials


conductor ↔ 
material that **allows** heat or electricity through

insulator → 
material that **does not** allow heat, electricity or sound through very well

hardness ||| 
how easily a material can be **scratched**


solubility  
how well a substance **mixes** into a liquid

transparency 
how see-through a material is
transparent  **translucent**  **opaque** 

magnetism 
when a material is attracted by **magnetic** force

physical change

generally **reversible** ↔


2 or more materials **combined** 


dissolving **melting** **freezing** **evaporating**


solid ↔ **liquid** ↔ **gas**




chemical changes

irreversible 
cannot change back

heating
frying an egg 

mixing certain materials
vinegar and bicarbonate of soda 

burning
ash and smoke 

dissolving 

solute + **solvent** = **solution**


a substance put into a liquid

the liquid that a solute is put into

mixture formed when a solute dissolves in a solvent



separating ←•→


sieving

mixture made of **solid particles**
sand from pebbles

filtering

separate mixtures **filter paper**
sand from water

magnetism

separate **magnetic** material
iron from plastic

evaporating

separate solutions **heating**
salt from water
salt left behind