Solids, liquids and gases

Materials can be described as solids, liquids or gases. These are called the **states of matter** and each state has its own properties.

Solids

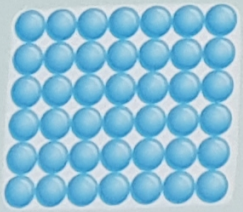
Solids keep their shape well and don't flow or spread out on their own.



Solids always take up the same amount of space. The cut-up pieces of a solid take up as much room as the solid did before it was cut.

Solids, liquids and gases are made up of tiny particles. These are so small they are invisible without the strongest microscopes.

In solids, such as metals, particles sit close together. They move a little but keep in much the same position, so solid materials keep their shape well.



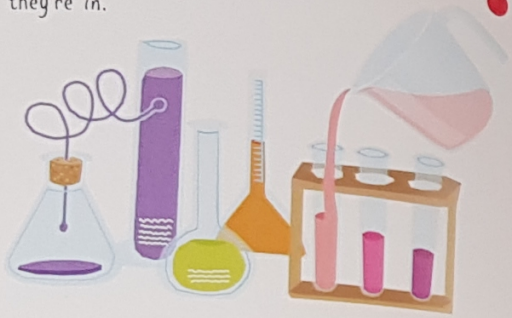
Everyday solids	
Wood	Brick
Ice	Cheese
Glass	Wax crayon
Cardboard	
Paper	



Liquids

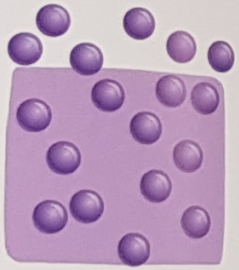
Liquids aren't firm: they flow and can be poured easily. They aren't easy to hold – if you try lifting water it will trickle between your fingers.

Liquids change their shape depending on the shape of the container they're in.



Like solids and gases, liquids are made up of tiny invisible particles. In liquids, the particles sit slightly apart from each other and they move a little.

In liquids, such as water, the particles sit slightly apart from each other and they can move around each other. This is why liquids flow and can be poured.



Everyday liquids	
Water	Syrup
Perfume	Paint
Hot chocolate	Orangeade
Shampoo	
Cough syrup	



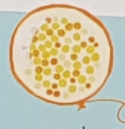
Gases

A gas has no particular shape and can drift easily from one area to another – for example hot air filling a cold room. Many gases are invisible, but we are showing them as dots to help explain how they behave.



Gases take up as much room as is available and take on the shape of whatever container they are in, such as these jars.

Gases can be squashed into a small space, such as air inside a balloon...





...or they can spread out to fill a huge space – which is why you might smell the scent of roses across a garden.

Like solids and liquids, gases are made up of tiny invisible particles. Particles in gases are far apart from each other and they are very free to move.

The greater distance between the particles in a gas allows gases such as air to spread out into larger spaces or to be squeezed into smaller ones.



Everyday gases	
Air	Oxygen
Carbon dioxide	Helium (in balloons)
Steam	Natural gas (used in cooking)
Car exhaust fumes	
Body gases (burps...)	

