Science Taboo

Melting

Move
Vibrate
Energy
Break
Solid
Liquid

Science Taboo

Freeze

Change
Cool
Vibrating
Solidify
Gas
Liquid
Forces

Science Taboo

Condense

Change
Cool
Water
Gas
Liquid

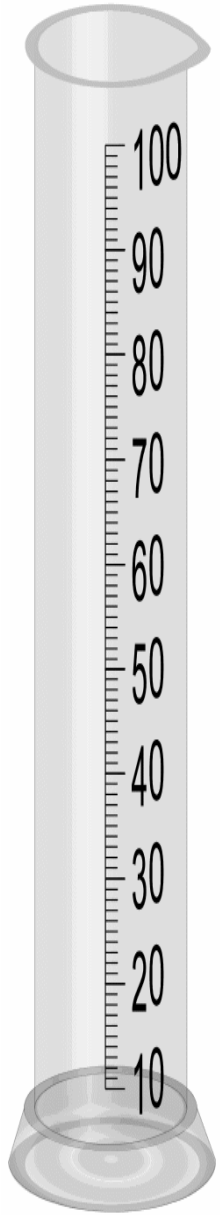
DENSITY ?

MASS (g) / VOLUME (cm3)

Marble

Mass = 20 grams

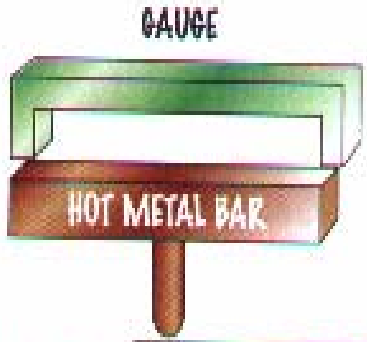
Volume?



EXPANSION OF SOLIDS EXPLAINED USING PARTICLE THEORY

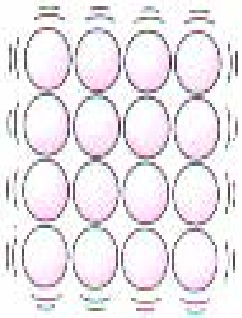
When a solid is heated, apart from its temperature increasing it also **EXPANDS** (its volume becomes bigger).

Before heating the metal bar fits in the gauge.

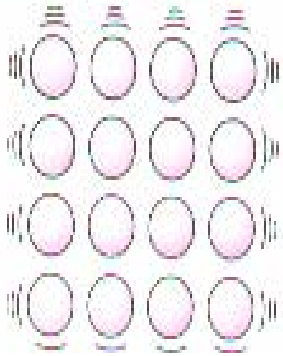


After heating the metal bar has expanded and no longer fits in the gauge.

What has actually happened to the metal bar can be explained using **PARTICLE THEORY.**

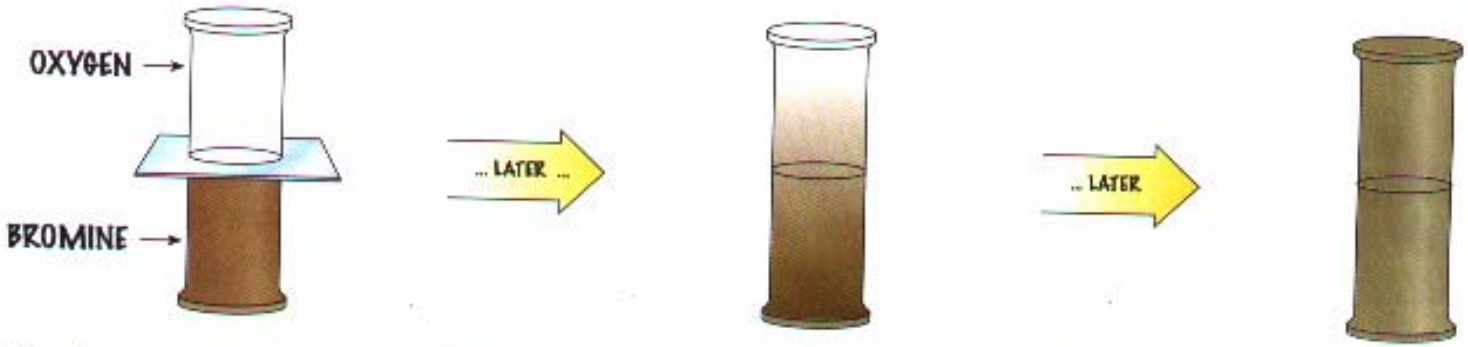


WHEN HEATED THE PARTICLES GAIN ENERGY. THEY NOW VIBRATE FASTER AND MOVE FURTHER APART. THE METAL BAR EXPANDS.

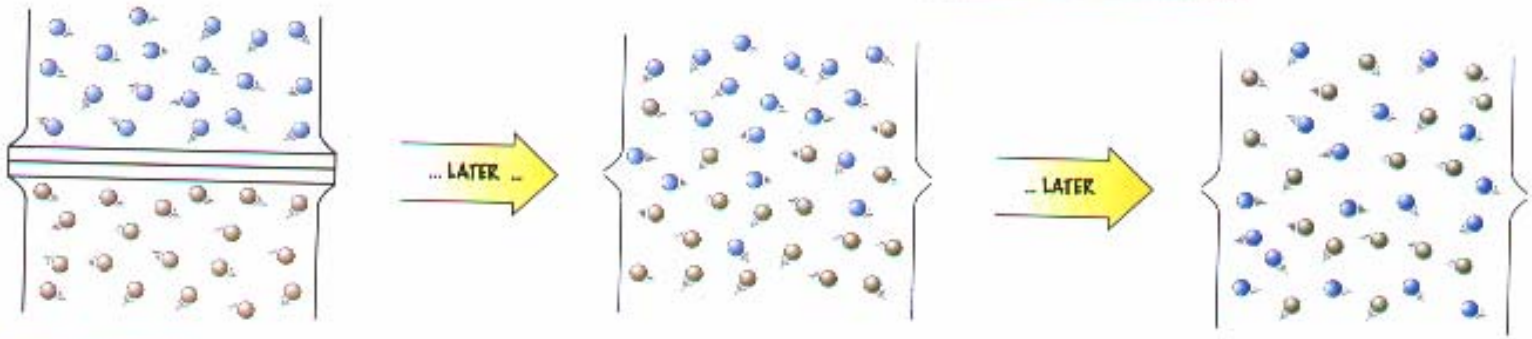


DIFFUSION IN GASES

Diffusion in gases can be demonstrated by taking two jars of gas, one containing OXYGEN and the other BROMINE, a brownish gas. To begin with the two gases are separated from each other.



What has actually happened in the two jars can be explained using **PARTICLE THEORY.**



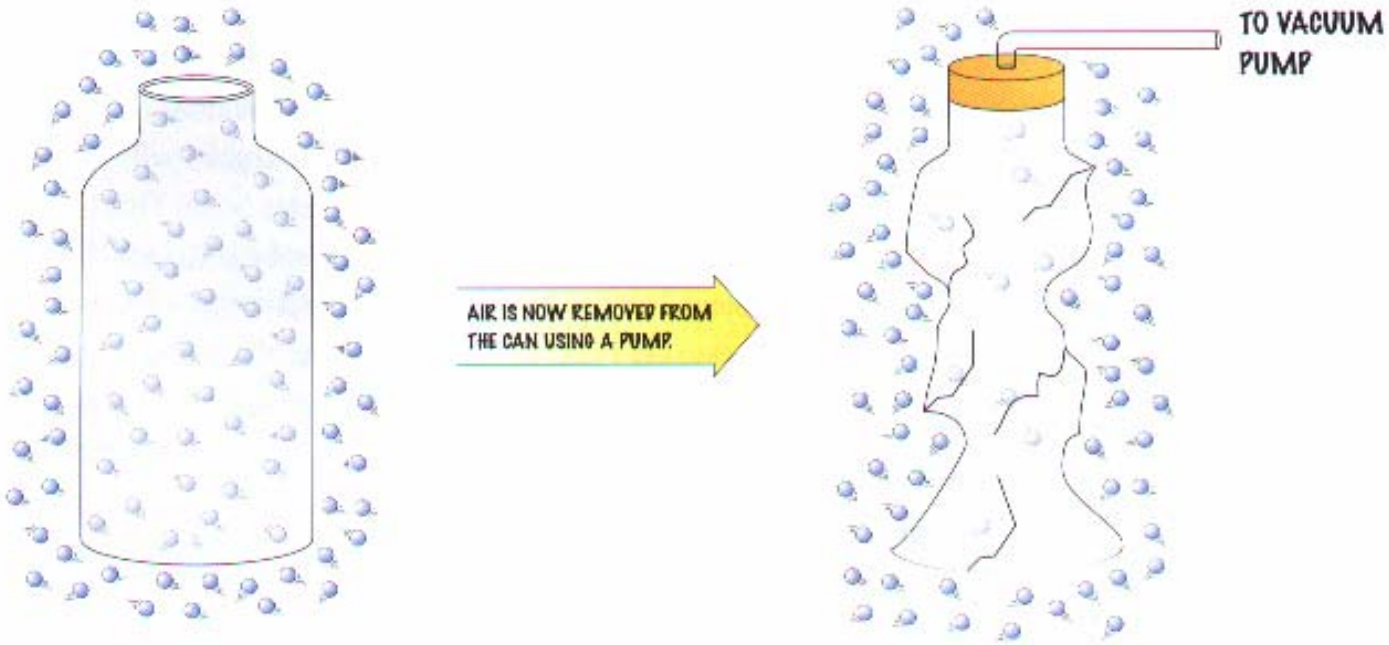
PARTICLES OF OXYGEN AND BROMINE GAS ARE MOVING AROUND VERY QUICKLY

THE SPACES BETWEEN THE PARTICLES ALLOWS THE TWO GASES TO MIX TOGETHER

EVENTUALLY THE PARTICLES ARE EVENLY SPREAD BETWEEN THE TWO JARS

COLLAPSING CAN EXPERIMENT

Here on earth we live at the bottom of a 'sea of air' .All around us gas particles are constantly hitting us and everything else in their way. The ball above would have gas particles constantly hitting its outside surface. As this experiment shows these gas particles can have a devastating effect if they are not opposed.



Normally the number of gas particles hitting the inside of the can is the SAME as the number of particles hitting the outside of the can. They cancel each other out and there is no effect on the can.

As the air inside the can is removed the number of gas particles hitting the inside of the can is LESS THAN the number of particles hitting the outside of the can. This difference causes the can to 'collapse'.

DIFFUSION

EXPANSION

GAS PRESSURE

DENSITY