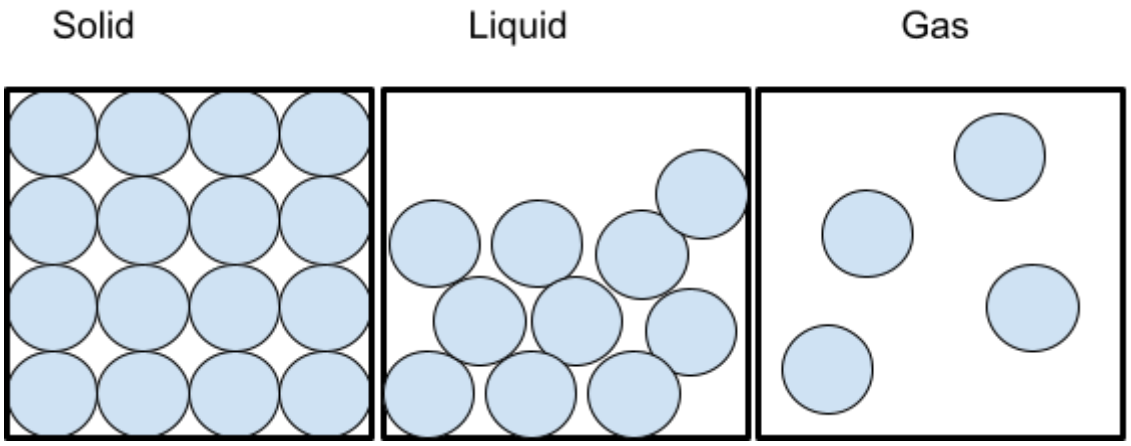

The three states of matter are solid, water and gas.

Multiple choice questions

which of the following statements best describes the arrangement of particles in a…

Solid- Option 3: They have a regular arrangement where all of them are touching
Liquid- Option 4: They have a random arrangement but all particles are still touching
Gas- Option 1: They have a random arrangement where none of them are touching.

Quick-Fire questions

Which state of matter has particles that are able to move around in all different directions at different speed?
Gas

Which state of matter has particles that vibrate in a fixed position?

Solid

Which state of matter has particles that are able to move around each other
Liquid

State of Matter	Arrangement of particles	Movement of particles
Solid	A regular arrangement of particles that are all touching	Vibrates in a fixed position
Liquid	A random arrangement of particles where all are touching	Moves around each other
Gas	A random arrangement of particles where none are touching	Moves around in all different directions and speeds

Compare the movement and arrangement of particles in a gas and in a solid

Particles in a solid are arranged in a regular pattern where all of the particles are touching. However, particles in a gas are arranged randomly and they usually don't touch each other. The movement of particles in a solid involves vibrating in a fixed position whereas the movement of particles in a gas involves moving around freely, in all different directions and speeds.

Properties match up activity

Can be compressed -> Gas
Changes shape to fit its container -> Gas and Liquid
Has a fixed shape -> Solid

High density -> Solid
Low density -> Gas
Changes volume to fill the room -> Gas
Cannot be compressed -> Solid and Liquid

The main state found in an empty water bottle is gas. It would be possible to compress this bottle because there are big spaces between the particles in gas. However, the main state of matter in a full water bottle is water. You cannot compress this bottle because all the particles in water are touching, and cannot be pushed closer together.