

CAIE Physics IGCSE

Topic 2.1 - Kinetic Particle Model of Matter

Flashcards

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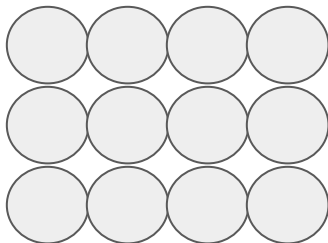
Describe the particle arrangement of a solid.



Describe the particle arrangement of a solid.

Tightly packed in a regular arrangement.

Particles cannot move, but vibrate on the spot.

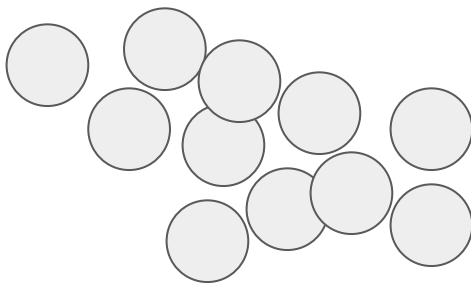


Describe the particle arrangement of a liquid.



Describe the particle arrangement of a liquid.

Close together, but irregular arrangement. They can flow past each other.



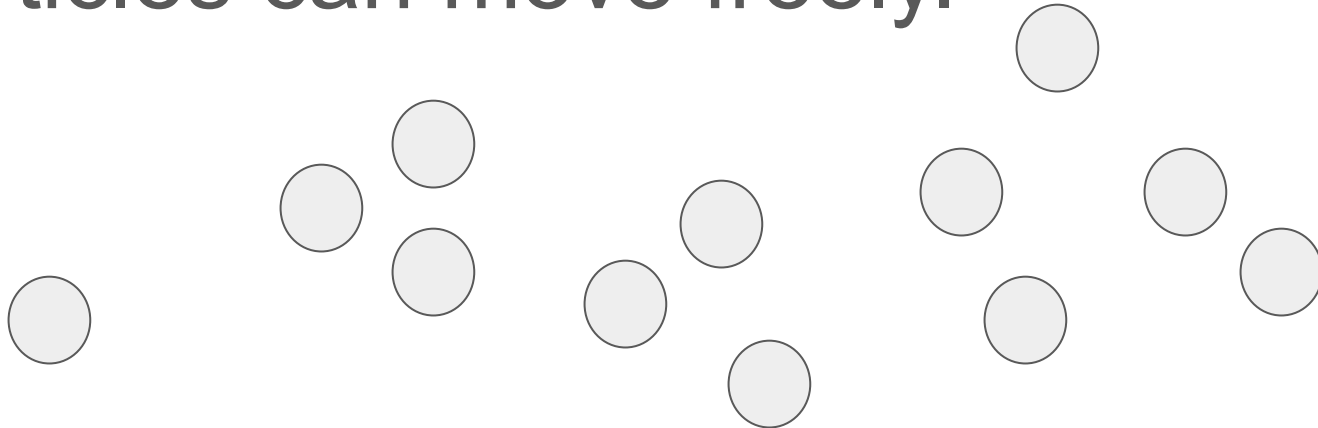
Describe the particle arrangement of a gas.



Describe the particle arrangement of a gas.

Separated, with no regular arrangement.

Particles can move freely.



How does density compare in solids,
liquids and gases?



How does density compare in solids, liquids and gases?

Solids are the most dense, then liquids, then gases



How does temperature affect the motion of particles?



How does temperature affect the motion of particles?

As temperature increases, particles have more kinetic energy, so vibrate/move more.



What is Brownian motion?



What is Brownian motion?

The constant and random movement of particles in a fluid, resulting from collisions between the particles.



What is evaporation?



What is evaporation?

The escape of higher-energy particles from the surface of a liquid to form a gas.



What happens when gases cool?



What happens when gases cool?

They lose energy and condense back into a liquid.



What happens if the volume of a fluid is decreased?



What happens if the volume of a fluid is decreased?

The pressure increases (if temperature is constant).



What happens if the temperature of a gas is increased? (at a constant volume)



What happens if the temperature of a gas is increased? (at a constant volume)

The pressure will increase.



Give an equation relating pressure and
volume at a constant temperature
(supplement)



Give an equation relating pressure and volume at a constant temperature (**supplement**)

Where...

$$pV = \text{constant}$$

p = pressure, Pa

V = volume, m^3



What is meant by absolute zero?



What is meant by absolute zero?

The lowest possible temperature, at which particles in the substance have no kinetic energy.



What is the equation to convert from degrees Celsius to Kelvin?



What is the equation to convert from degrees Celsius to Kelvin?

$$T(\text{K}) = T(^{\circ}\text{C}) + 273.15$$

