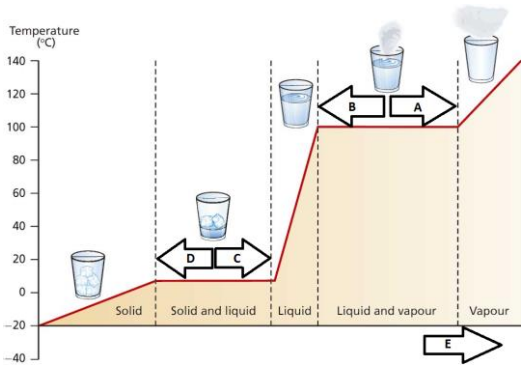
Physics Topic 3: Particle model

1. Density

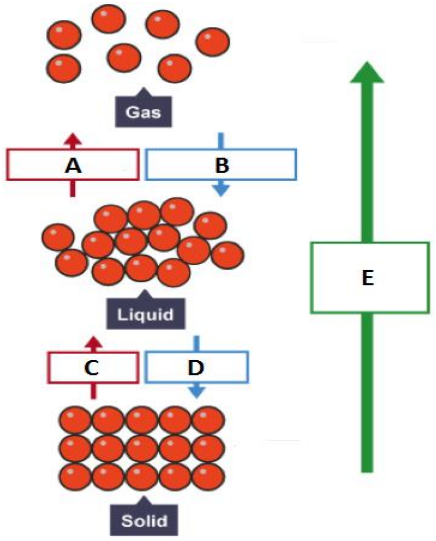
$$\rho = \frac{m}{V}$$

Symbol	Meaning	Unit
ρ	density	kg/m^3
m	mass	kg
V	volume	m^3

2. Changes of state



A. Evaporation/ Vaporisation
B. Condensation
C. Melting/ Fusion
D. Freezing
E. Increasing internal energy



3. The specific heat capacity

Energy transferred, ΔE (joules, J) = **mass, m** (kilograms, kg) x **Specific heat capacity, c** (joule per kilogram per degree Celsius, J/kg°C) x **Temperature change, Δθ** (degree Celsius, °C)

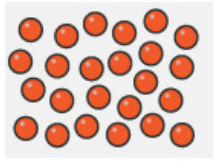
To find the specific heat capacity of a substance the equation can be rearranged to: $c = \frac{\Delta E}{m\Delta\theta}$

4. The specific latent heat

Energy transferred, ΔE (joules, J) = **mass, m** (kilograms, kg) x **Latent heat, L** (joule per kilogram J/kg)

To find the specific latent heat of a substance the equation can be rearranged to: $L = \frac{\Delta E}{m}$

5. Gas properties

Diagram	
Arrangement of particles	Randomly arranged Far apart
Movement of particles	Brownian motion
Energy of particles	Very high energy
Density of substance	Very low density