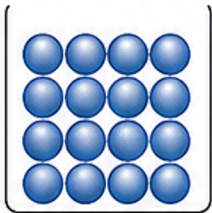


PARTICLE MODEL CARDS

Cut out the cards and use them to explore and explain matter.

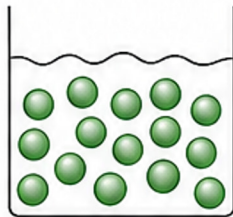


SOLID



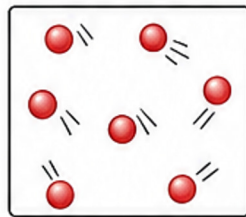
- Particles are close together in a fixed arrangement.
- Vibrate about a fixed position.
- Fixed shape and volume.

LIQUID



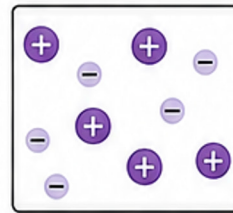
- Particles are close together but not fixed.
- Slide past one another.
- No fixed shape. Fixed volume.

GAS



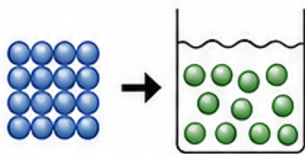
- Particles are far apart.
- Move freely and quickly in all directions.
- No fixed shape or volume.

PLASMA



- Gas with charged particles.
- Ions (+) and electrons (-) move freely.
- Conducts electricity.
- No fixed shape or volume.

MELTING

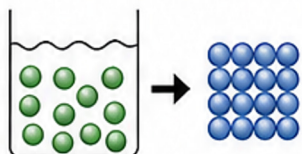


Solid to liquid.
Particles gain energy and move more.



ENERGY IN ↑

FREEZING

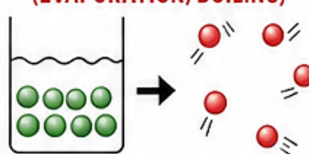


Liquid to solid.
Particles lose energy and lock into place.



ENERGY OUT ↓

VAPORISATION (EVAPORATION/BOILING)

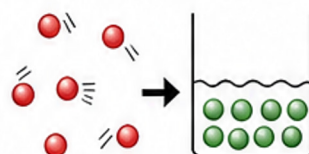


Liquid to gas.
Particles gain energy and spread out.



ENERGY IN ↑

CONDENSATION



Gas to liquid.
Particles lose energy and come closer together.



ENERGY OUT ↓

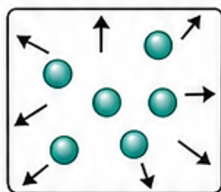
TEMPERATURE



A measure of the average kinetic energy of the particles.

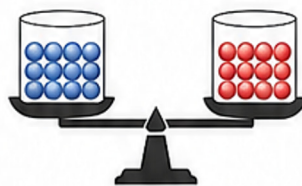
Higher temperature = more energetic particles.

PRESSURE



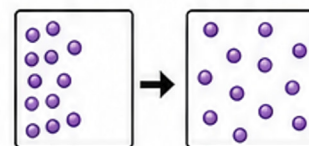
Caused by particles hitting the walls of their container. More frequent or forceful collisions increase pressure.

DENSITY



Mass of particles in a given volume. More particles in the same space = higher density.

DIFFUSION



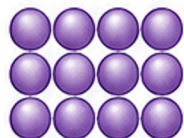
Particles spread from an area of high concentration to an area of low concentration. Continues until evenly distributed.

KINETIC ENERGY



The energy of motion. Faster particles have more kinetic energy.

POTENTIAL ENERGY



Stored energy due to position or arrangement of particles.

SPACING



SOLID LIQUID GAS

The gaps between particles affect how matter behaves.

MODEL LIMITATION



Particle models are simplified. Real particles are much smaller than shown and have more complex behaviour.