

particles in solids, liquids and gases:

particles **take in** energy from heat, $\rightarrow$ change state.

melting is when a solid is heated, so the particles get more energy, and they vibrate more. The solid **expands**.

@ melting point, particles vibrate + break away.

boiling is when a liquid is heated, and the particles get more energy, and move faster. They collide + bounce further away. The liquid **expands**.

@ boiling point, the particles get enough energy to break away.

Heat: Stronger forces $\rightarrow$ harder to break $\rightarrow$ more energy $\rightarrow$ higher melting + boiling points.

Cooling: Gas $\rightarrow$ cools $\rightarrow$ particles lose energy $\rightarrow$ moves slower.
 $\rightarrow$ doesn't have enough energy $\rightarrow$ stay together $\rightarrow$ liquid.

Gases:

pressure depends on temperature and volume.

Heat a gas in a closed container, pressure **increases**.

Gas compressed into a smaller space, pressure **increases**.

Gas **diffuses** when particles collide

X diffuse at the same rate / time.

The **lower** the mass, the **faster** it will diffuse.

The **higher** the temperature, the **faster** it will diffuse.

mass of molecule is called its **relative molecular mass**