

Heating and cooling graphs

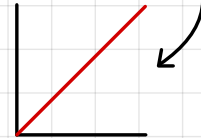
Energy changes in a system



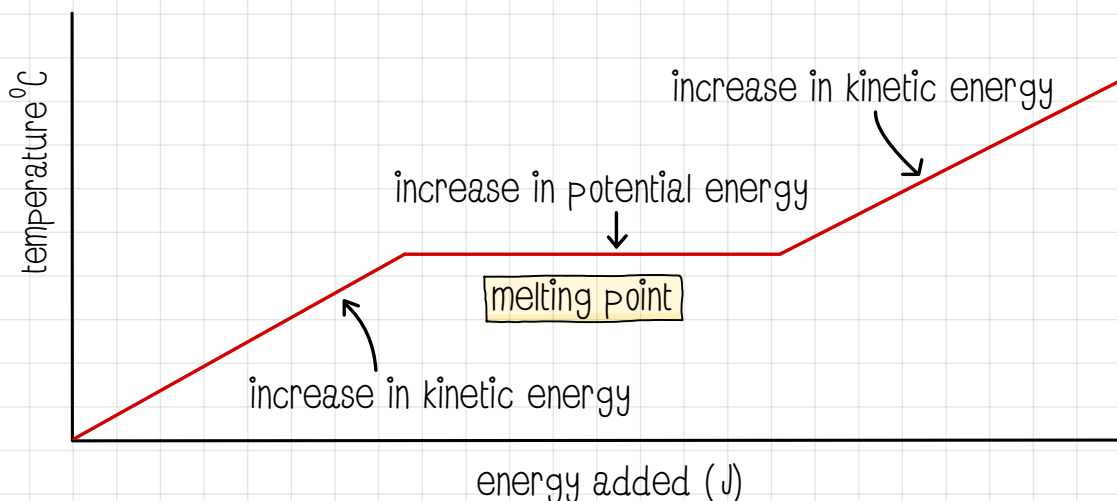
Temperature is a measure of the average **speed** of the **molecules** in a system. As you increase the energy in a system, you increase the speed of the molecules and as a result the **kinetic energy** of the molecules.



Many people think that a heating curve for water would look like this:



Instead the heating curve actually looks like this:



The energy added to the system causes an increase in the kinetic energy of the particles. This raises the temperature of the system.



However, at the **melting point** the temperature remains constant. This is because the energy is being used to break the interactions between the molecules. The energy is being transferred into the **potential energy** store and not the kinetic energy store.



A cooling curve shows the decrease in internal energy over time

