Formulas

- $\Delta Q = mC\Delta T$

- $\Delta Q = \Delta mL$

Specific Heat capacity (c)

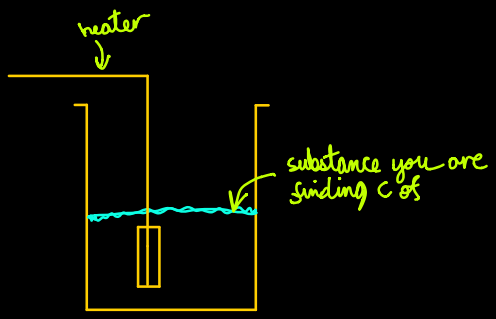
The numerical value of specific heat capacity of a substance is the quantity of heat energy required to raise the temp of a unit mass of substance by 1 degree.

The symbol for specific heat capacity is "c"

$\Delta Q = m c \Delta t$

- ΔQ: change in energy
- m: mass of substance being heated
- Δt: change in temp

- Measuring specific heat capacity of a substance



$$\Delta Q = m c \Delta T$$

$$\therefore \frac{V \times I \times t}{m \Delta t} = c$$

Latent heat

The numerical value of latent heat is the quantity of heat energy required to convert 1kg mass of a substance from one state to another without any change in temperature.

The symbol of latent heat of fusion/vaporisation is "L"

$\Delta Q = \Delta m L$

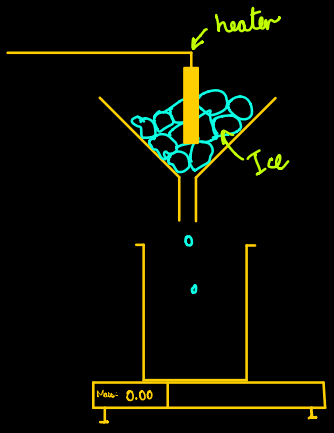
ΔQ: change in energy

Δm: change in mass of substance being heated

L_v is latent heat of vaporisation

L_f is latent heat of fusion

- Measuring L_f



$$L_f = \frac{\Delta Q}{\Delta m} = \frac{PIT}{\Delta m}$$

Heat losses

- We can use two set of experiments to eliminate "H" (heat loss)

- To do this we need to add/subtract the two equations, eliminating H

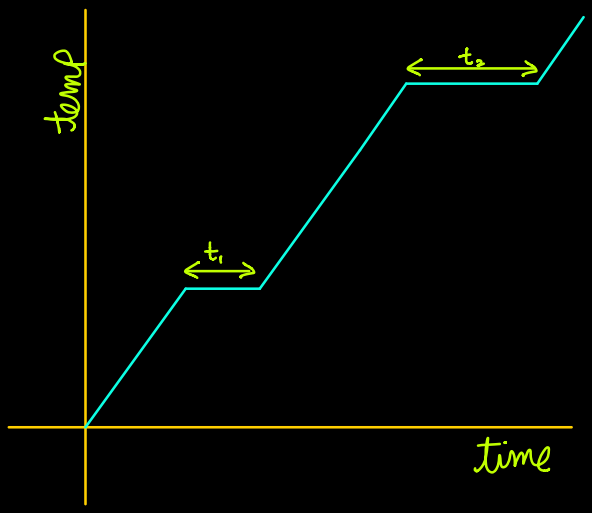
Example

$\Delta E_1 = \Delta m_1 L \pm H$

$\Delta E_2 = \Delta m_2 L \pm H$

Add or subtract the two equations depending if it $+H$ or $-H$ to eliminate it.

Time it takes



$t_2 > t_1$

Because it requires more energy to turn liquid into gas than to turn solid into liquid