

# CAIE Physics A-level

## 14 - Temperature

### Flashcards

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Fill in the blanks: 'Heat flows from regions of \_\_\_\_\_ temperature to regions of \_\_\_\_\_ temperature.'



Fill in the blanks: 'Heat flows from regions of \_\_\_\_\_  
temperature to regions of \_\_\_\_\_ temperature.'

Heat flows from regions of higher temperature  
to regions of lower temperature.



Describe a system in thermal equilibrium?



## Describe a system in thermal equilibrium?

In a system in thermal equilibrium, no heat transfer occurs within the system or between the system and those adjacent. The implication is therefore that the system is isolated and has a constant internal temperature.



Give examples of some physical properties that vary with temperature.



Give examples of some physical properties that vary with temperature.

- Density of a liquid
- Volume of a gas (at constant pressure)
  - The resistance of an electrical conductor



# How do you convert from Celsius to Kelvin?





How do you convert from Celsius to Kelvin?

Add 273(.15)

Eg. 10 degrees C = ~283 K



# Why is the absolute scale (Kelvin scale) used?



# Why is the absolute scale (Kelvin scale) used?

It doesn't arbitrarily depend on the properties of a given substance (eg. water's melting and boiling point for the Celsius scale).

0K (absolute zero) means that the particles have no internal energy.



What is meant by the specific heat capacity of a substance?



What is meant by the specific heat capacity of a substance?

The amount of heat energy required to raise the temperature of 1kg of the substance by  $1^{\circ}\text{C}$ . Heat capacity has the unit  $\text{Jkg}^{-1}\text{K}^{-1}$ .



Define the specific latent heat of a substance.



Define the specific latent heat of a substance.

The specific latent heat of a substance is the heat energy required to change the state of 1kg of a substance, without changing its temperature.



What is the difference between the specific latent heat of fusion and the specific latent heat of vaporisation?





What is the difference between the specific latent heat of fusion and the specific latent heat of vaporisation?

The latent heat of fusion refers to the transition from a solid to a liquid state, where the latent heat of vaporisation refers to the transition from a liquid to a gaseous state.

