

Measurement and Effects of Heat

Chapter 14: Measurement and Effects of Heat · Topic 1

Key Concept

Temperature, measured using a thermometer in Celsius or Fahrenheit, indicates how hot or cold an object is, different from heat itself.

Heat causes expansion in most materials when heated and contraction when cooled, a property utilised in thermometers and other devices.

Heat transfers through conduction (direct contact), convection (fluid movement), and radiation (electromagnetic waves), each with different mechanisms.

Understanding heat's effects helps explain phenomena like why metal rails have gaps, or why hot air balloons rise using convection.

Quick Revision Notes

- Heat: energy flowing hot to cold.
- Temperature measured by thermometer, Celsius/Fahrenheit.
- Heat causes expansion when heated.
- Contraction occurs when cooled.
- Transfer methods: conduction, convection, radiation.
- Conduction: direct contact.
- Convection: fluid movement.
- Radiation: electromagnetic waves.

Practice Questions

- 1 Discuss the difference between heat and temperature.
- 2 Observe an example of expansion due to heat.
- 3 Discuss conduction with a real-life example.
- 4 Discuss convection with a real-life example.
- 5 Discuss radiation with a real-life example.
- 6 Explain why metal rails have gaps.