

Heat and Energy

Chapter 6: Heat and Energy · Topic 1

Key Concept

Heat flows from hotter to colder objects until they reach the same temperature (thermal equilibrium), a fundamental principle of thermodynamics.

Specific heat capacity measures how much heat energy is needed to raise a substance's temperature, varying between different materials.

Heat causes thermal expansion in most materials, where substances expand when heated and contract when cooled.

Understanding heat and energy transfer explains everyday phenomena, like why metal feels colder than wood at the same temperature, or how thermometers work.

Quick Revision Notes

- Heat flows from hotter to colder objects.
- This continues until thermal equilibrium.
- Specific heat capacity varies by material.
- It measures heat needed to raise temperature.
- Heat causes thermal expansion.
- Substances expand when heated, contract when cooled.
- This explains why metal feels colder than wood.
- It also explains how thermometers work.

Practice Questions

- 1 Discuss why heat flows from hot to cold objects.
- 2 Research the specific heat capacity of water.
- 3 Explain thermal expansion with an example.
- 4 Discuss why metal feels colder than wood.
- 5 Research how a thermometer uses thermal expansion.
- 6 Explain thermal equilibrium in your own words.