

SUMMARY

NCERT Class 6 Science Chapter 7: Temperature and Its Measurement

Overview

Understanding temperature and how it is measured is vital in science and daily life. This chapter introduces different thermometers, temperature scales, and proper usage essential for competitive exams and general awareness.

Key Concepts

- **What is Temperature?**
 - Temperature tells how hot or cold something is.
 - It helps us compare heat levels between two objects.
 - Touch is unreliable actual measurement is needed for accuracy.
- **What is a Thermometer?**
 - A thermometer is a tool used to measure temperature accurately.
 - It shows readings in Celsius (°C), Fahrenheit (°F) or Kelvin (K).
- **Types of Thermometers**
 - **Clinical Thermometer**
 - Measures body temperature
 - Typical range: 35°C to 42°C
 - Mercury expands with heat; a kink prevents mercury from falling instantly
 - **Digital Thermometer**
 - Shows temperature on a digital display
 - Safer than mercury-based thermometers
 - **Infrared Thermometer**
 - Measures temperature without contact
 - Useful for scanning body/room temp quickly
 - **Laboratory Thermometer**
 - Measures temperature of liquids or objects in labs
 - Wider range: 10°C to 110°C

- No constriction, mercury moves freely
- **Room Thermometer**
 - Measures surrounding air temperature
- **Temperature Units Table: Celsius, Fahrenheit & Kelvin Explained**
 - Unit Name Symbol Common Usage
 - Celsius °C Most scientific purposes
 - Fahrenheit °F Medical/body temperature
 - Kelvin K Scientific & SI (International System) unit
 - Normal body temperature is approximately 37.0°C or 98.6°F
- **Key Temperature Facts**
 - Clinical thermometers are not used for hot liquids or ice
 - Always read thermometers at eye level
 - Clean thermometers before and after use
 - Body temp should be measured under the tongue (for clinical)
 - Lab thermometers are held vertically and not allowed to touch beaker sides
- **How to Use Thermometers Properly**
 - **Clinical Thermometer:**
 - Shake to bring mercury below 35°C
 - Place under the tongue
 - Wait for a beep or 1-2 minutes
 - Read the value at eye level
 - Clean before storing
 - **Laboratory Thermometer:**
 - Hold vertically
 - Immerse bulb in liquid (don't touch the container)
 - Read while immersed to avoid inaccurate readings

Application-Based Questions Competitive Exams Focus

- **Frequently Asked Concepts:**
 - Differences in thermometer types
 - Converting Celsius Fahrenheit
 - Safety & usage steps

- Real-life applications (body temp, water temp, air temp)
 - **Useful for:**
 - UPSC (CSAT): Everyday Science & Logical Reasoning
 - SSC, TNPSC: General Awareness Physics Basics
 - RRB, Police, State Exams: Measurement & Instruments
 - Olympiads, School Quizzes: Conceptual MCQs
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