

SUMMARY

NCERT Class 6 Science Chapter 6: Materials Around Us

Overview

This chapter explores the types and properties of materials that make up the world around us. It helps learners understand how materials are classified, their physical properties, and how this knowledge is useful in real life and competitive exams.

Key Concepts

· What Are Materials?

- Everything around us is made up of materials like wood, glass, plastic, metal, cloth, etc.
- A material is any substance used to make an object.
- One object can be made from different materials (e.g., a chair can be wood, plastic, or metal).

· Classification of Materials

- Classification = Grouping materials based on common properties.
- Helps in understanding patterns and making decisions (e.g., shopkeepers, doctors, scientists use classification daily).

· Properties of Materials

– Appearance

- Lustrous (shiny): metals like iron, copper, aluminium.
- Non-lustrous: wood, paper, rubber, etc.
- Not all shiny things are metals (some are polished or coated).

– Hardness and Softness

- Hard: Difficult to compress or scratch (e.g., iron, stone).
- Soft: Easily compressed/scratched (e.g., rubber, sponge).
- These properties are relative (rubber is harder than sponge but softer than iron).

– Transparency

- Transparent: Can see clearly through (e.g., glass, water, air).
- Translucent: Can see, but not clearly (e.g., frosted glass, butter paper).

- Opaque: Cannot see through (e.g., wood, metal, cardboard).
- **Solubility in Water**
 - Soluble: Materials like sugar, salt dissolve in water.
 - Insoluble: Materials like sand, sawdust, chalk powder don't dissolve.
 - Water is a universal solvent dissolves many substances.
- **Mixing with Water (Liquids & Gases)**
 - Some liquids (e.g., vinegar) mix well with water.
 - Others (e.g., oil) form separate layers.
 - Gases like oxygen dissolve in water essential for aquatic life.
- **Mass (Heaviness)**
 - Mass = amount of matter in an object (measured in g/kg).
 - More mass = heavier object.
- **Volume (Space Occupied)**
 - Volume = space occupied (measured in mL/L).
 - All matter has mass and volume, including gases like air.
- **What is Matter?**
 - Anything that has mass and occupies space is called matter.
 - Units:
 - Mass: gram (g), kilogram (kg)
 - Volume: litre (L), millilitre (mL), cubic metre (m³)

Application-Based Questions Competitive Exams Focus

- **Frequently asked concepts:**
 - Which materials are transparent/opaque?
 - Which are hard/soft?
 - What is soluble in water?
 - Identify lustrous vs non-lustrous items.
 - Examples of classification in daily life (kitchen, shop, school).
- **Useful for:**
 - UPSC (CSAT): Logical classification, observation skills
 - SSC: General Awareness Everyday science
 - TNPSC/RRB/School exams: Application of material properties

– Olympiads & Quizzes: Concept clarity and identification

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