Materials used in Daily Life

1. Materials vs. Objects
It's important to distinguish between an object (the item we use) and the material (what it is made of).
 * Object: A finished item that serves a specific purpose (e.g., a chair, a spoon, a book).
 * Material: The substance or matter from which an object is made (e.g., wood, plastic, iron, paper).
 * Key Fact: An object can be made from a single material (e.g., a steel spoon) or multiple materials (e.g., a bicycle is made of metal, rubber, and plastic).
Object	Materials Used
Chair	Wood, Plastic, Metal, Fabric
Pen	Plastic, Metal
Book	Paper, Ink, Glue
Window	Glass, Wood, or Aluminium
2. Why Do We Need to Classify Materials?
Classification is the process of grouping objects based on their similarities and differences in properties. We classify materials to:
 * Organize Information: It makes the study of various materials easy and systematic.
 * Understand Properties: Grouping helps us quickly identify the properties of all members in that group (e.g., all metals are generally hard and shiny).
 * Determine Usefulness: It helps in selecting the right material for a specific purpose (e.g., we choose glass for a window because it's transparent).
3. Classification Based on Origin
Materials are often grouped into two major categories based on where they come from:
Type	Source	Examples
Natural Materials	Obtained directly from nature (plants, animals, or the earth).	Wood, Cotton, Wool, Silk, Stone, Gold, Rubber.
Man-Made Materials	Created or synthesized by humans, often from natural raw materials.	Plastic, Glass, Steel, Paper, Cement, Nylon.
Page 2: Key Properties of Materials
Materials are chosen for daily use based on their specific properties. Understanding these properties is vital for selecting the right material for the right job.
4. Properties Based on Appearance
Property	Description	Examples

| Lustre (Shine) | Materials that have a shiny or reflective surface. | Gold, Silver, Aluminium, Diamond (Lustrous). |
| Dull (Non-Lustrous) | Materials that do not shine and have a plain surface. | Wood, Chalk, Paper, Rubber. |

5. Properties Based on Light Transmission (Transparency)

Type	Description (What happens to light?)	Examples
Transparent	Materials that allow light to pass through them clearly, so we can see through them perfectly.	Clear Glass, Clean Water, Air.
Translucent	Materials that allow some light to pass through, but scatter it, so we cannot see clearly through them.	Frosted Glass, Oiled Paper, Butter Paper.
Opaque	Materials that do not allow any light to pass through them.	Wood, Metal Sheets, Cardboard, Stone.

6. Properties Based on Feel and Solubility

Property	Description	Examples
Hardness	Materials that are difficult to compress, scratch, or cut.	Iron, Stone, Steel, Diamond (Hard).
Softness	Materials that can be easily compressed, cut, or scratched.	Cotton, Sponge, Rubber, Chalk (Soft).
Solubility	The ability of a substance to dissolve in a liquid (usually water).	Soluble: Salt, Sugar, Vinegar.
Insolubility	The inability of a substance to dissolve in a liquid.	Insoluble: Sand, Oil, Chalk Powder.
Float/Sink	Determined by the material's density compared to water.	Float: Wood, Dried Leaves, Plastic. Sink: Stone, Iron Nail, Coin.

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7. Why are Materials Grouped and Used Specifically?

The unique properties of a material dictate its use:

 * Metals (Iron, Steel): Used for construction (bridges, buildings) and tools because of their hardness and strength.
 * Glass: Used for windows, lenses, and lab equipment because it is transparent and easily shaped when hot.
 * Plastic: Used for electrical insulation (covering wires) because it is a poor conductor of electricity and water.
 * Cotton/Wool: Used for clothing because they are soft and can absorb moisture.

8. Essential Exam Preparation Questions

A. Define the Following Terms

 * Material:
 * Translucent:
 * Lustre:
 * Solubility:
 * Opaque:

B. Short Answer Questions (2-3 Marks)

* Give two reasons why we group objects together based on their properties.
* Differentiate between a natural material and a man-made material with one example of each.
* Explain why a blacksmith uses iron (a metal) to make tools rather than wood.
* Classify the following into Transparent, Translucent, and Opaque: (a) Clear Glass (b) Brick (c) Fog/Mist (d) Aluminium Sheet.
* What is the difference between a hard and a soft material? Give an example of a very hard substance.

C. Long Answer Questions (4-5 Marks)

* Explain how you would test the solubility of three different substances (salt, sand, and mustard oil) in water. Present your results in a simple table.
* Explain the importance of the property of hardness and transparency for materials used in a building.
* Draw a neat table to compare any four differences between a lustrous and a dull material.
* Provide four examples of common objects and list the main material used for each, explaining why that material is chosen based on its property.

The video below offers an explanation of materials used in daily life for your class level. Class 6 | Science | Unit 10 | Materials Used in Daily Life |

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