

Chapter 4

Sorting materials into groups

Objects Around Us

◆ Materials:

- Anything which has a weight and occupies space around us is called matter.
- For example, a chair, a bullock cart, a cycle, cooking utensils, books, clothes, toys, water, stones, metals, plastics, wood, cotton, paper, mud, etc and many other objects.



◆ Characteristics of materials:

- Different materials have different properties, e.g. we make a tumbler from material such as glass, plastics, or steel.
- All these materials have the property of water or other liquids.
- We can't make tumblers from a piece of cloth that can't hold water.

◆ Why do we need to group objects?:

We group objects so that it becomes easy for us to study their pattern and property. We often group objects in order to store similar objects together in order to use them in the future.

Appearance Of Materials

- The appearance of material can be divided into two types, shiny and dull.
- Materials with shiny properties used to have a gentle and soft glow.



Gold

Q: Why do materials like gold, copper, aluminum, iron, etc. usually, lose their shine after some time?

A: Materials like gold, copper, aluminum, iron, etc. lose their shine after some time due to the action of moisture and air on it.

Hardness and Softness of Materials

- Material that can be compressed or scratched easily is called soft materials. For example, cotton or sponge is soft material.



Cotton Flower

- Material that can't be compressed or scratched easily is called hard materials. For example, Iron, stone, etc. are hard materials.



Diamond

Solubility And Insolubility Of Materials

- Materials that completely dissolve in water are called soluble materials. For example, sugar completely dissolves in water.

- Materials that do not dissolve are called insoluble material. For example, sand, chalk powder, etc. do not dissolve are called insoluble material.

* Tip: Not just solid materials, even liquids have the property of being soluble or insoluble. For example, Lemon juice can easily dissolve in water while oil does not dissolve and suspends over water.

Object May Float Or Sink In Water

- Some materials do not mix with water and floats on the surface. Example - Leaves and wooden cork floats on the surface of water.

- Some materials like stones and coins sink to the bottom of the water.



Transparency

◆ Transparent:

A transparent object or material through which we can see clearly is known as a transparent object. For example, glass, clear water, and some plastics are called transparent materials.

◆ Translucent:

A translucent object or material lets the light pass through, but we cannot see the objects on the other side clearly. For example, Butter paper is a translucent object.

◆ Opaque:

An opaque object through which we can't be seen is called an opaque object or material. For example, metal, wood, and cardboard are opaque objects through which we can't see.

