



**Edu Junior**

Where Passion Meets Educations



**Class 6<sup>th</sup>**

**learnkwniy**  
**Chapter 2<sup>nd</sup>**

**SORTING MATERIALS  
INTO GROUPS**

**A thing that can be seen and touched is called an object.**

**The matter of which an object is made is called material.**

### **Classification of objects**

**The sorting of objects into groups with each group having its own characteristic properties, is called classification of objects.**

**All the objects having similar characteristic properties are placed in one group during classification.**

**And the objects having different properties are placed in different groups.**

**Objects classification gives us the following advantages:**

**(1) The classification of objects into groups makes it easier to locate them and work with them.**

**(2) The classification of objects into groups helps in understanding them. This is because if we know the properties of any one member of the group, we can get an idea of the properties of the other members of this group.**

### **Basis of Classification of Objects**

**All the objects can be classified into two main groups:**

**(i) Living objects and Non-living objects.**

**(ii) Living objects can be classified further into two groups: Plants and Animals.**

**(iii) Non-living objects can be classified into many groups on the basis of their nature of material, use, colour, shape, size, appearance, hardness, texture, etc.**

## **Classification of Objects as Living and Non-Living**

**All the living objects need food, water and air for their survival whereas non-living objects do not require these things.**

**Based on this difference, all the objects around us can be classified into two groups: living objects and non-living objects.**

### **Examples**

**Table, Toy, Dog, Clothes, Pencil, Knife, Shoes, Wool are Non living.**

**Rose, Algae, Cactus, Earthworm, Tree, Fish, are living.**

## **Classification of Living Objects as Plants and Animals**

**All the plants can make their food by using carbon dioxide, water and sunlight whereas animals cannot make their food in this way.**

**Based on this difference, all the living objects can be classified into two groups: plants and animals.**

### **Examples**

**Dog, Grasshopper, Earthworm, Fish, Hen are Animals**

**Rose, Algae, Hydrilla , Cactus, Tree are Plants**

## **Classification of Non-Living Objects**

**The non-living objects can be classified on the basis of the, their uses, colour, shape, size, appearance, hardness and texture, etc.**

### **Examples**

**Table, Nail, Beaker, Toy, Chair, Utensils, Test-tube, Ruler, Bed, Magnet, Funnel, Mug, Door, Coin, Mirror, Polythene bag, table, chair, bed and door are made of wood; nail, utensils, magnet and coin are made of metals; beaker, test-tube, funnel and mirror are made of glass toy, ruler, mug and polythene bag are made of plastics.**

## **MATERIALS**

**Anything which has mass and occupies space is called matter.**

**The matter of which an object is made is called material.**

**All the objects are made up of one or more materials.**

### **Example**

**Table is an object which is made of wood, so wood is a material.**

**Materials are of two types:**

**Natural materials and Man-made materials.**

**(i) Examples of natural materials are:**

**Wood, Coal, Rocks, Minerals, Water, Gold, Petroleum, Cotton, Wool, Silk, Leather, Sand and Soil.**

**(ii) Examples of man-made materials are: Iron, Stainless steel, Cement, Glass, Plastics, Paper, Paints, Nylon, Polyester, Sugar and Brass.**

## **CLASSIFICATION OF MATERIALS**

**The materials are classified on the basis of certain properties such as:**

**(i) Appearance**

**(ii) Hardness or Softness**

**(iii) Solubility or Insolubility in water**

**(iv) Heaviness or Lightness with respect to water**

**(v) Transparency, Translucency or Opaqueness**

## **1. Classification of Materials on the Basis of Their Appearance**

**On the basis of their appearance, all the materials are classified into two groups:**

- (i) Materials having lustre**
- (ii) Materials having no lustre.**

**Those materials which have shiny appearance are said to have lustre. All the metals like gold, silver, copper, aluminium, and iron, etc., are the materials having shiny appearance (or lustre).**

**Those materials which have dull appearance are said to have no lustre (no shine). Examples of materials having dull appearance are: Paper, Cardboard, Wood, Chalk, Cotton, Plastic, Rubber, and Sand.**

## **2. Classification of Materials on the Basis of Hardness and Softness**

**All the materials can be divided into two groups on the basis of their hardness or softness:**

- (i) Hard materials, and**
- (ii) Soft materials.**

**Those materials which cannot be easily compressed, cut, bent (moulded) or scratched, are called hard materials.**

**Example of hard materials are: Iron, Steel, Wood, Stone, Brick, Glass, Bones, and Diamond. Diamond is the hardest natural material known.**

**Those materials which can be easily compressed, cut, bent (moulded), or scratched, are called soft materials. Some of the examples of soft**

**materials are: Sponge, Cotton, Wool, Foam rubber, and Candle wax, Butter, Chalk, Clay, Flour, Feathers, Skin and Tomato.**

### **3. Classification of Materials on the Basis of Their Solubility in Water**

**Water dissolves a large number of materials but it cannot dissolve all the materials. Thus, some materials are soluble in water whereas other materials are insoluble in water.**

**All the materials can be classified into two groups on the basis of their solubility:**

- (i) Materials which are soluble in water,**
- (ii) Materials which are insoluble in water**

### **4. Classification of Materials on the Basis of Their Heaviness or Lightness With Respect to Water**

**All the materials can be classified into two groups on the basis of their density:**

- (i) Materials which are heavier than water, and**
- (ii) Materials which are lighter than water.**

**In order to find out whether a material is heavier than water or lighter than water, we put a piece of the material in a vessel containing water:**

- (i) The material which sinks in water is heavier than water.**
- (ii) The material which floats on water is lighter than water.**

## **5. Classification of Materials on the Basis of Transparency, Translucency and Opaqueness**

**All the materials can be divided into three groups on the basis of transparency, translucency, and opaqueness:**

- (i) Transparent materials,**
- (ii) Translucent materials, and**
- (iii) Opaque materials.**

**Those materials through which we can see clearly are called transparent materials.**

**Some of the examples of transparent materials are: Glass, Air, Water, Some plastics (like Polythene), Groundnut oil, Alcohol, etc.**

**Those materials through which we cannot see at all, are called opaque materials.**

**The opaque materials do not allow any light to pass through them due to which the objects kept behind them cannot be seen at all.**

**Some of the examples of opaque materials are: Cardboard, Wood, Metals, Brick, Stone, and Book, etc.**