Objects Around Us

Properties of Materials:

- Appearance
- Hardness and Softness
- Transparent, Translucent, and Opaque

Soluble or Insoluble

Floatation

Objects Around Us

• Objects around us have different shapes, colours and uses. They are made up of one or more materials such as paper, glass, plastic, cloth, wood, metal, mud, soil, cotton, etc.

• Different materials have different properties. Many objects differing in usage can be made from the same material.

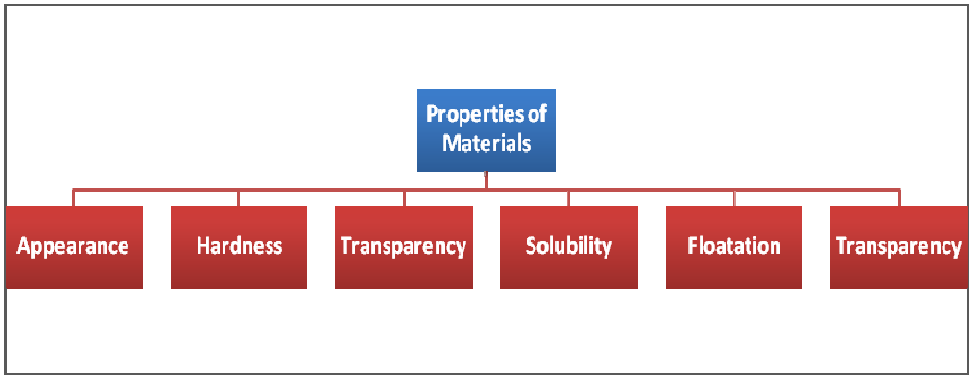
• There are so many ways to group objects. The process of sorting and grouping objects/things according to some basis is called classification.

• Materials can be grouped on the basis of their properties. Different types of materials have different properties such as appearance, solubility, transparency, conductivity and behavior towards magnet etc.

Properties of materials

The property of the material decides its usage. Like for example we use utensils made of metals because they are hard and heat resistant similarly tyres of automobiles are made of rubber. You cannot make utensils of rubber or electric wires of wood because rubber cannot withstand heat and wood is bad conductor of electricity and hence won't allow current to pass through it.

Let us discuss the various properties of materials.



Appearance

Materials which shine on exposing on light is called luster. For example gold, silver, copper etc.

Materials which do not shine on exposing on light is called non-luster or dull materials. For example wood, carbon , stone, glass etc.

Gold jewellery

Hardness and Softness


Hard iron bed

Materials which are difficult to compress are called hard. For example wood, iron copper etc.

Materials which can be compressed or scratched easily are called soft. Eg :- Cotton, sponge, rubber

Transparent

Materials that allow light to pass through them completely are called transparent materials. For example; Glass jar , Glass bottle , Clear plastic bottle , Cling-film, etc

Translucent

Materials that allow light to pass through them partially are called translucent materials. For example: Grease-proof paper, tracing paper, Coloured clear plastic, etc

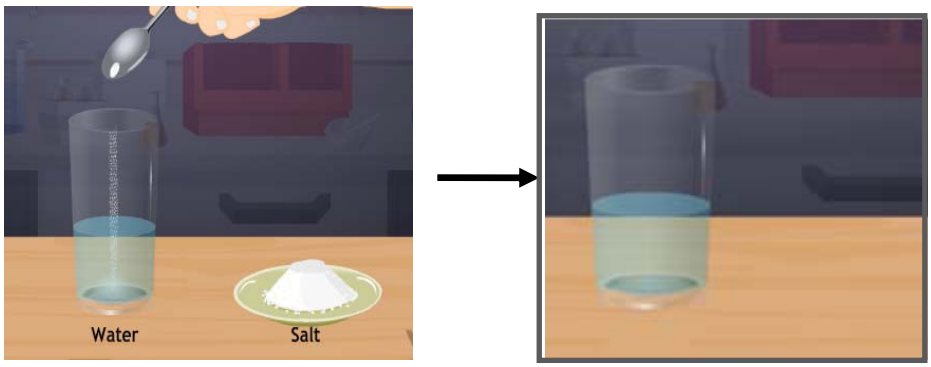
Opaque

Materials that do not allow light to pass through them are called opaque materials. For example; Tin foil, Thick paper, Paper plates , Foil plates , Cloth , Wood, etc

Solubility

Solution is made up two things i.e. solute (soluble in nature/ lesser amounts) and solvent (Substances can dissolve in it/ large amount).

Water plays an important role in our life. Some substances are soluble in water, i.e., disappear when added to water in limited quantity, e.g., salt, sugar. These are soluble in water. Substances like chalk powder, sand settle down when added to water. These are insoluble in water. Similarly some liquids mix with water, e.g., ethyl alcohol , vinegar, Liquids like mustard oil ,kerosene form a separate layer when mixed with water. These are immiscible in water. Gases like oxygen dissolve in water to a very low extent. Among insoluble substances, heavier ones sink and lighter ones float on the surface of water.



Salt dissolves in water

Floatation

You found that objects like coin and stone sank in water while empty plastic bottle, crumbled paper and vegetable oil floats. This is due to the floatation property of these materials.