

Sorting Materials into Groups

Objects Around Us

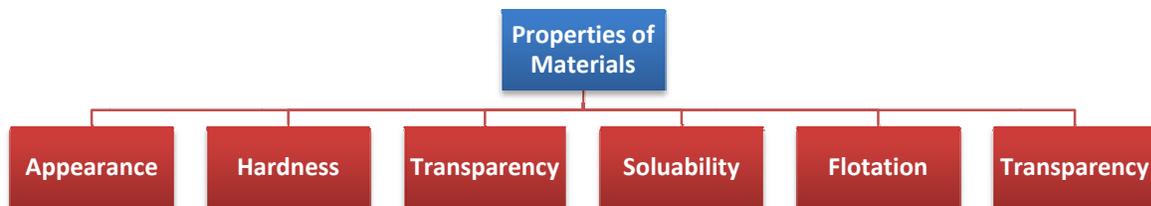
Objects around us are made of one or more materials. These can be categorized on the basis of the materials from which they are made.

Materials	Objects made of these materials
Wood	Chair, desk, pencil
Plastic	Toys, bottles, pen
Leather	Bag, shoes,
Paper	Books, newspaper, bags

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

Take a gold earring, an eraser, a plastic box and wooden block. Now rub them with sandpaper. What do you see? The earring shines while the other items don't. It shines because it has luster. This property is found only in materials made of metals. Sometimes due to moisture they may lose luster but if you cut the metal or rub it with sandpaper you can see it shining.



Gold jewellery

Hardness

What will you do if you're told to sleep on any iron bed without mattress? Definitely you would say no. You cannot sleep on an iron bed because it is **hard** and does not compress while the mattress is made of **soft** material that compresses on applying pressure. Likewise, touch a stone, its surface is **rough** but the sponge will be very soft.



Hard iron bed

Solubility

Substances (solute) that dissolve in a solvent like water are called soluble. Like for example salt, sugar while substances that do not dissolve in water are called insoluble. For e. g. chalk powder, sand. Some liquids like milk, lemon juice dissolve in water. There are also liquids that don't dissolve like kerosene and oil.



Soluble lemon juice

Flotation

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



Oil floating in water

Transparency

Wear a pair of spectacles. You are able to see through them because spectacles are made of materials which allow us to see through them. These materials are called transparent materials. Now try to see through a wooden door. The wooden door is made of wood and does not allow us to see through it. These materials are called opaque materials. There is another type of material



Transparent Spectacles

through which you are not able to see properly like wax paper, spray bottle. Objects appear blurred. These materials are called as translucent material.

Materials are grouped according to their similarity. It is necessary to group materials as it becomes easier to identify and study them.
