

# Exploring Materials

Look at the non-living things around us. They are made of different materials, such as **plastics**, **wood**, **rubber**, **glass**, **fabrics**, **ceramics** and **metals**.

Different materials have different physical properties. They include:

- **strength** : A strong material can hold heavy loads without breaking.
- **exibility** : A flexible material will bend without breaking.
- **elasticity** : An elastic material will stretch when we pull it and return to its original shape when we let it go.
- **transparency** : A transparent object will allow most light to pass through and we will be able to see what is inside the object.
- **waterproof** : A waterproof material will not absorb water.
- **ability to float / sink in water** : Objects that are lighter than water will float while those that are heavier than water will sink.

Some materials are **natural materials**. These materials are made from plant or animal parts, or from substances derived from the ground, such as metal ores.

Some materials are **man-made** or **synthetic**.

Sometimes, more than one material may seem to be equally suitable to make an object. For example, a chair can be made of plastic, metal or wood. However, there will be some differences in the three chairs made.

Materials used to make a chair		
Plastic	Metal	Wood
Cheap and lightweight	Strong	Strong, but not as strong as metal
However, a plastic chair is not as durable as a wood or a metal one, especially for outdoor or long-term use.	However, it will be heavy and less convenient to move around. If it is made of iron, the chair may rust after long periods of outdoor use.	Does not rust. Suitable for both indoor and outdoor use.

As you can see, a chair made of either one of the materials has its pros and cons. It is up to the individual to decide which chair suits his / her needs best.

When deciding which material to use to make a certain object, we have to consider the characteristics of the material and whether or not it suits the intended purpose. The table below provides a list of materials, their characteristics, origins and common uses.