

Chapter 6

Changes around us

What is a Change?

Change means when an object or a substance varies or alters from its original form or state. Changes usually occur in the shape, size, state of the substances or objects. For example,

- A toy airplane made by folding paper indicates the change in the shape of paper.



- Growth of human beings is an example of change in size because a child has once grown up can't be turned back into a child.



Physical and Chemical Change

◆ Physical Change:

A change in which the substance undergoes a process to change its physical properties is called a physical change. It is a process that does not form a new product. For example, chopping of wood.



◆ Chemical Change:

A change in which the substance undergoes a process to change its chemical composition is called a chemical change. It is an irreversible process that forms a new product. For example, the burning of wood.



Reversible And Irreversible Change

◆ Reversible Change:

A change that can be reversed or we can get back the original substance (shape) is called the reversible change.

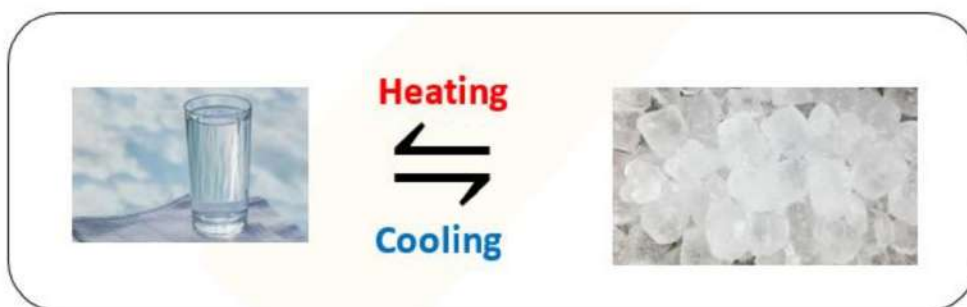
Q: What happens when,

(i). We heat ice cubes

(ii). We freeze water

A: (i). Ice changes into the water on heating.

(ii). water changes into ice on cooling.



◆ Irreversible Change:

A change that can't be reversed or we can't get back to its original stage is called an irreversible change. For example, Raw egg to boiled egg, Batter to idli, milk to curd, etc. These changes can't be reversed.



Could There Be Other Ways To Bring A Change?

◆ Effect of Heating and Cooling on Substances:

In order to make tools like an axe of iron, the iron is heated till it becomes red hot. This makes the iron soft which allows it to expand i.e. become larger in size and then allowed to cool down which contracts again i.e. become smaller in size leading to a tight fit of the handle.

* The blacksmith heats up the iron rim so that the iron rim expands in size. Then, he fits the iron rim around the wooden wheel. Then the cold water is splashed onto it, which cools down the rim, and the rim contracts and fits around the wheel.

Burning of Candle: Physical or Chemical Change?

Burning of wax is an example of both physical and chemical change.

Physical Change in burning of candle - On burning candle, the wax melts and turns into liquid wax. When we cool down melted wax it will turn into solid wax. This change is called physical change.

Chemical Change in burning candle - When we light the candle, the wax present near the wick will melt. Wick absorbs the liquid wax. The liquid wax vaporizes due the heat produced by the flame. This wax vapour near to flame burns and produces carbon dioxide and water vapour which is called chemical change.

Change in the length of the candle after burning, cannot be reversed.



Pic credit: NCERT