

6th Science Lesson 9 Notes in English

9] Changes Around Us

Introduction

What is a change?

- Change is the Law of Nature. In our day - to - day life we see many changes around us.
- Weather changes periodically (daily/seasonally), Seasons changes periodically. A paper burns readily while it takes a few days for an iron nail to rust.
- It takes a few hours for milk to turn into curd but vegetables get softened in a few minutes when cooked.
- The said changes are accompanied by change in properties like shape, colour, temperature, position and composition.
- Some changes can be observed while some are not possible to notice.

Classification of Changes

- There are different types of changes observed in nature that occurs around us.
- Some changes take place very quickly while others take hours, days or even years.
- Some changes are temporary while some others are permanent.
- Some changes produce new substances while others do not. Some changes are natural while others are made by human beings.
- Some changes are desirable to us but some changes are not desirable.

We shall now try to classify changes on the basis of certain similarities and differences.

- slow and fast
- reversible and irreversible
- physical and chemical changes
- desirable and undesirable
- natural and man - made

Slow and Fast changes

Slow changes

- Changes which take place over a long period of time (hours / days / months / years) are known as Slow changes.
- Examples: growth of nail and hair, change of seasons, germination of seed.

Fast Changes

- Changes which take place within a short period of time (seconds or minutes) are known as fast changes.
- Examples: Bursting of balloon, breaking of glass, bursting of fire crackers, burning of paper.

Reversible and Irreversible changes

Reversible change

- Changes which can be reversed (to get back the original state) are known as reversible changes.
- Examples: Touch me not plant (Responding to touch), stretching of rubber band, melting of ice.

Touch me not plant



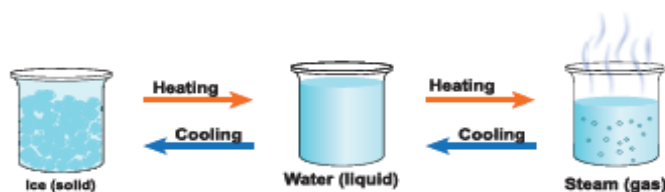
Irreversible change

- Changes which cannot be reversed or to get back the original state are known as Irreversible changes.
- Examples: Change of milk into curd, digestion of food, making idly from batter.

Physical and Chemical Changes

Physical changes

- Physical changes are the temporary changes in which there is change in the physical appearance of the substance but not in its chemical composition.
- Here no new substance is formed.
- Example: Melting of ice, the solution of salt or sugar, stretching of rubber band.
- Let us now understand the physical changes that take place in water.
- You already know that water exists in three states as solid, liquid and gas.
- Change of state takes place either by heating or cooling. By heating energy is supplied and by cooling energy is taken away. These are the reasons for the changes.
- Let us name a few processes connected with the changes in states of water.



Dissolution

The spreading of the solid particles (broken into individual molecules) among the liquid molecules is called as dissolution.

- Solvent is a substance that dissolves the solute.
- Solute is a substance that is dissolved in a solvent to make a solution.
- When solute is dissolved in a solvent it forms a solution.

**Chemical changes**

- Chemical changes are the permanent changes in which there is change in the chemical composition and new substance is formed.
- Examples: Burning of wood, Popping of popcorn, Blackening of silver ornaments, and Rusting of iron.

Physical Change	Chemical Change
No new substance formed	New substance formed
No change in the chemical composition	There is change in the chemical composition
It is a temporary change	It is a permanent change
It is reversible	It is irreversible

Desirable and Undesirable Changes**Desirable changes**

- The changes which are useful, not harmful to our environment and desired by us are known as desirable changes.
- Examples: Ripening of fruit, growth of plants, cooking of food, milk changing to curd.

Undesirable changes

- The changes which are harmful to our environment and not desired by us are known as Undesirable changes.
- Examples: Deforestation, decaying of fruit, rusting of iron.

Natural and human made changes

Natural changes

- Changes which take place in nature on their own and are beyond the control of human beings are known as Natural changes.
- Examples: Rotation of the earth, changing phases of the Moon, Rain.

Human made or artificial changes

- The changes which are brought about by human beings are known as human made or artificial changes. They will not happen on their own.
- Examples: Cooking, Deforestation, Cultivating crops, construction of buildings.

More to know:

- The change of state from solid to gas directly is called Sublimation. Example : Camphor
- Water is known as the universal solvent. It dissolves a wide range of substance.