

Changes around us

Classification of changes on the basis of various aspects

Changes happen all around us, even within us. Most of such changes are reversible while many of others are irreversible changes.

Based on speed there are two changes- slow and fast changes.

- **Slow changes**- such changes occur very slowly and it takes a long period of time for such changes to complete. Example- Curdling of milk, the ripening of fruits, the growth of a child into an adult, cooking of food, etc.
- **Fast changes** - such changes occur at a very fast speed. For example- Burning of paper, Blinking of eyes, Sneezing, Burning of a match stick, etc.

Based on reversibility there are two types of changes-Reversible changes and Irreversible changes.

- **Reversible changes**- some changes can be reversed to in order to get back the original size and shape of the object. Such a change can take place in both the direction like melting of ice cream, touch me not plant gets back into its original shape after some time. Evaporation and condensation are the reverse reactions of each other, boiling and melting are the reversible processes as well, etc.
- **Irreversible changes**- such changes cannot be reversed back once completed. Irreversible changes occur in one direction only. For example - formation of omelette from the egg, the ripening of fruits, blooming of flowers, burning of paper, cooking of food, etc.

On the basis of reversibility changes can also be classified into -Permanent and temporary changes.

- **Permanent changes**- Such changes cannot be reversed back to obtain the original substance. Like any chemical change.
- **Temporary changes**- such changes can be reversed back to obtain the original substances. Like any physical change.

Based on time interval there are two changes - Periodic changes and Non- Periodic changes.

- **Periodic changes**- Such changes occur in a periodic manner which means they get repetitive after a definite interval. For example - Seasons repeating themselves each year, change in phases of the moon, beating of the heart, happening of day and night, etc.
- **Non- periodic changes**- such changes do not get repeated periodically. For example- melting of glaciers, burning of fossil fuels, freezing of water to form ice, all the natural disasters, etc.

Based on the composition there are two changes- Physical changes and chemical changes.

- **Physical changes** - such changes are temporary and here no new substance is obtained. Such changes can be easily reversed. Evaporation of water to form vapors and then its condensation in the form of water droplets is a good example of physical change. Other examples of physical change are kicking a football, cutting a paper, crushing of ice cubes, etc.
- **Chemical changes**- such changes are permanent in nature and cannot be reversed back easily. Here, a new substance is formed from the previous one after the reaction has been completed. For example - Photosynthesis, Cooking of food, Decomposition of organic matter, rusting of iron nails, etc.

Based on energy there are two types of changes- Exothermic and Endothermic changes.

- **Endothermic changes** - such changes are always accompanied by the release of heat energy. For example-

burning of wood, the formation of snow in the cloud, making of ice cubes, mixing of water and strong acid releases a lot of heat, etc.

- **Endothermic changes**- such changes are accompanied by absorption of heat energy. For example - Evaporation, melting of ice, baking of bread, photosynthesis , etc.