	INDIAN SCHOOL AL WADI AL KABIR	
Class: VI	**DEPARTMENT OF SCIENCE 2020-21**	**Date of completion: 20.12.2020**
HANDOUT	**Topic: CHANGES AROUND US**	**Note: A4 FILE FORMAT**
Name of the student:	**Class & Section:**	**Roll no.**

Every day we come across different types of changes. A **change** refers to a noticeable difference in shape, size, colour, state, internal structure or any other property.
Examples-

1. A lump of clay changes into a toy by molding (shape).
2. The size of eraser reduces with repeated use (size).
3. The colour of water changes on adding tea leaves (colour).
4. Milk curdles (internal structure).

Changes are either **reversible** or **irreversible.**

Reversible change: Temporary changes can be reversed, but permanent changes cannot be reversed. Changes that can be reversed to get the original substance back are called reversible changes. Example: i) evaporation- The change of water into steam on heating is called evaporation. ii) condensation-If the steam is cooled down, it changes back into water. This process is called condensation.

Irreversible change: A change that can't be reversed to get back the original substance is called as **irreversible change.** Example- growth of living things, cooking of food, tearing a sheet of paper into small pieces.

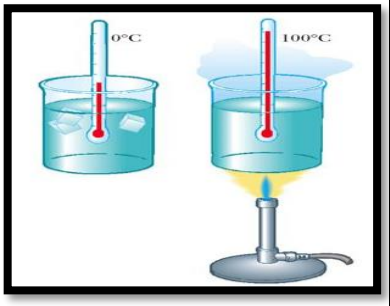
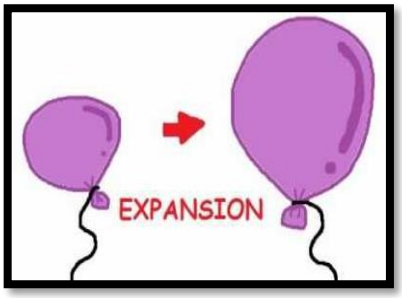
More examples:

- Take a ball of dough and roll it into a roti with a rolling pin. [Result: change in the shape of dough], Change it back into the ball of dough. [Result: dough is back to its original shape], Nature of change: Reversible.
- Take a piece of paper. Make a toy aeroplane by folding this paper. [Result: Change in the shape of paper], Unfold the paper now. [Result: Paper is back into its original shape], Nature of change: Reversible.
- Burn a piece of paper. [Result: Paper turns to smoke and ash], Nature of change: Irreversible, as the smoke and ash cannot be converted into paper.
- Roll out a roti from the ball of dough and bake it on tawa. [Result: Change in internal structure of roti], Nature of change: Irreversible, as baked roti cannot be converted into dough.

Effect of heating and cooling on materials:

Substances expand on heating and contract on cooling. The amount of expansion differs in solids, liquids and gases. Gases expand the most while solids expand the least. Expansion and contraction are reversible changes. When the cause of heating or cooling is removed, the substances return to their original state. Thus, expansion and contraction are reversible changes.

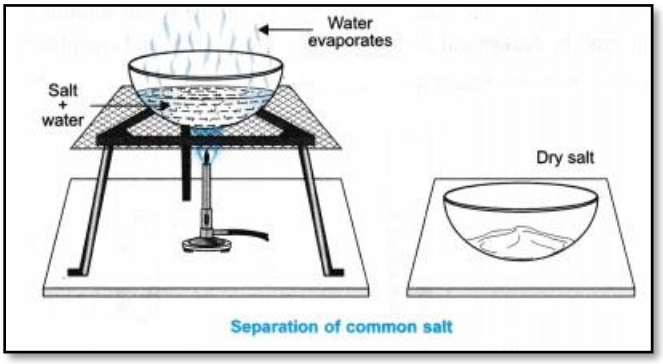
Applications of Expansion and Contraction of materials.

Expansion and contraction in solids.	**Expansion and contraction in liquids.**	**Expansion and contraction in gases.**
The iron blade of the tools has a ring in which the wooden handle is fixed. Normally, the ring is slightly smaller in size than the wooden handle. To fix the handle, the ring is heated and it expands. Now, the handle easily fits into the ring. When the ring cools down it contracts and fits tightly on to the handle.	The bulb of clinical thermometer contains liquid mercury that expands on absorbing heat from the body. Thus, level of mercury rises in the glass tube. If the bulb of thermometer is dipped in cold water, mercury contracts, and the mercury level falls.	If an inflated balloon is kept in sun for long time, it will grow in size, as the air inside it expands by absorbing heat from the sun and balloon expands. Similarly, if the inflated balloon is kept in ice water. It will shrink in size, as the air inside it contracts.
		

Causes of changes:

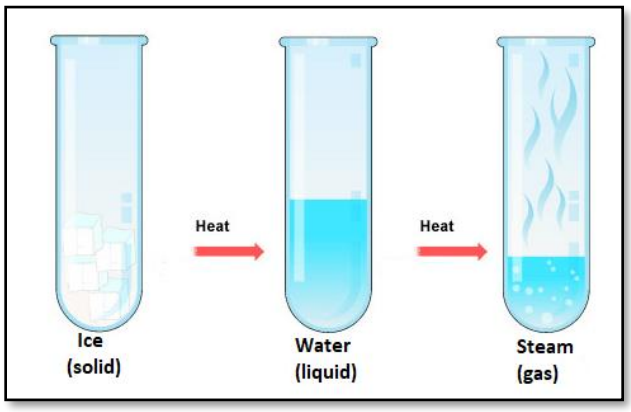
1. Mixing of two or more substances: Example-

a) When salt is added to water, it forms a salt solution. Salt can be recovered from the solution by evaporation of water.



b) A small quantity of curd is added to warm milk. In a few hours, the milk changes into curd.

2. Heating: Can bring about a change in the physical state of matter. Example- solid changes to liquid and liquid changes to gas on heating.



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