Good day children, today I am going to teach you the next part of the chapter i.e. Physical change & Chemical Change.

6. PHYSICAL CHANGE & CHEMICAL CHANGE :-

**PHYSICAL CHANGE :-**

*Characteristics*

- A physical change is temporary.
- It is easily reversible.
- No new substances are formed.
- Heat may be given out or absorbed.
- No alteration in mass takes place.

*Examples*

- a. Melting of ice.
- b. Breaking a glass.
- c. Chopping wood.
- d. Dissolving sugar in water.
e. Sublimation of camphor.

**CHEMICAL CHANGE :-**

**Characteristics**
- A chemical change is permanent.
- It is irreversible.
- New substances are formed.
- Accompanied with change in energy in the form of heat, light or sound.
- Change in weight takes place during a chemical change.

**Examples**
- a. Ripening of fruits.
- b. Baking of cake.
- c. Electrolysis of water.
- d. Charring of sugar.
- e. Radioactive decay.

**EXAMPLES OF PHYSICAL AS WELL AS CHEMICAL CHANGES :-**

**Burning of candle**
When the wax melts - it is physical change.
While melting the wax liberates carbon-dioxide & water vapour it is a chemical change.

**Sublimation of Ammonium Chloride**
When ammonium chloride is heated it changes from solid to gaseous state and when cooled it changes back to solid state - it is a physical change.
And when ammonium chloride is heated it forms ammonia gas and hydrogen chloride gas - it is a chemical change.

**DIFFERENCE BETWEEN PHYSICAL CHANGE & CHEMICAL CHANGE :-**

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<th>PHYSICAL CHANGE</th>
<th>CHEMICAL CHANGE</th>
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1. Change is temporary. 1. Change is permanent.
2. Reversible change. 2. Irreversible change.
3. No new substances formed. 3. New substances are formed.
4. Heat or light may not be given out. 4. Heat or light both are generally given out.
5. There is no loss or gain of weight. 5. There is a change in weight.

FERMENTATION:
It is a change where chemical breakdown of a substance takes place by microorganisms, involving effervescence and giving off heat.

ENERGY CHANGES INVOLVED DURING CHEMICAL CHANGE:
- Exothermic change - A change where heat is evolved is called exothermic change.
  E.g.- a) Burning of matchstick.
        b) Glowing of an electric bulb.
- Endothermic change - A change where heat is absorbed is called endothermic change.
  E.g.- a) Melting of ice.
        b) Evaporation of spirit.

With reference to the above discussions answer the following questions:
1. How can you say tearing a sheet of paper is a physical change?
2. How can you say cooking of food is a chemical change?
3. Define FERMENTATION.
4. Differentiate between: - a ) Physical & chemical change, b) exothermic & endothermic change.
5. When platinum wire is heated no new substance is formed. The wire becomes white hot, but it is still platinum. What would you say about this change?