

## Science Class 9 Notes – Natural Resources

1. Life on planet earth is dependent on many factors like resources available on Earth, energy from the Sun etc. The different resources available on the Earth are land, water and air. All of these three things are required for the existence of life forms.

**Lithosphere :** The outer crust of the Earth.

**Hydrosphere :** 75% of the Earth's surface is covered with water. This water along with underground water comprises the hydrosphere.

**Atmosphere :** The air covering of earth is-called atmosphere.

**Biosphere :** The life-supporting zone of the Earth where the atmosphere, hydrosphere and the lithosphere interact and make life possible is known as the biosphere.

World Environment Day -5th June

**Biotic components :** The living things constitute the biotic components of the Biosphere.

**Abiotic components :** The non-living things air, water and soil form the abiotic components of the Biosphere.

### 2. The Breath of Life

Air is a mixture of many gases like nitrogen, oxygen, carbon dioxide and water vapour. On Venus and Mars there is no life because carbon dioxide constitutes 95-97% of the atmosphere. Carbon dioxide is produced in the atmosphere by following activities :

- (i) Breakdown of glucose in presence of oxygen by organisms.
- (ii) Combustion of fuels.

**Carbon dioxide is fixed in two ways :**

- (i) Green plants convert carbon dioxide into glucose by photosynthesis.
- (ii) Marine animals use carbonates dissolved in sea-water to make their shells.

### 3. The role of atmosphere in climate control :

Atmosphere keeps the average temperature of the earth steady during the day and whole year. Atmosphere prevents sudden increase in temperature during daytime and fall of temperature during night. Moon has no atmosphere, its temperature ranges from — 190°C to 110°C.

The rate of atmosphere in climate control is the movement of Air, Rain, Air pollution, Water

**4. Water pollution :** The addition of undesirable substances to water and removal of desirable substances from water is called water pollution.\_

The main causes of water pollution are as follows:

- (i) Addition of harmful substances to water
- (ii) Removal of desirable substances from water
- (iii) Change in water temperature

**5. Mineral richness in the soil :** Soil is the most important natural resource which supplies nutrients to the life forms. Soil is formed by weathering of rocks in thousands of years. Following factors are responsible for making soil from rocks.

A. Sun

B. Water

C. Wind

D. Some organisms like lichen and mosses grow on the surface of rocks and they release certain substances that cause weathering of rocks and a thin layer of soil is formed.

**Humus :** The decayed living organisms present in soil is called humus. Humus makes the soil porous and allows water and air to penetrate deep underground.

**6. Soil pollution :** Removal of useful components from the soil and addition of other substances, which adversely affect the fertility of the soil and kill micro-organisms living in it is called soil pollution. Fertilizers and pesticides destroy the soil structure.

Mosses or Bryophytes are indicator of soil pollution.

**7. Soil erosion :** Removal of topmost layer of soil by wind, water or other activities is called soil erosion. Roots of plants prevent soil erosion by firmly holding the soil particles.

**8. Chipko Movement :** It is a movement related with forest conservation led by Shri. Sunder Lal Bahuguna in Garhwal Himalayas.

**9. Biogeochemical cycles :** Various biogeochemical cycles exist in the nature which represent interaction between biotic and abiotic components of the biosphere to make a stable system.

- (A) Water cycle
- (B) Nitrogen cycle
- (C) Carbon cycle
- (D) Oxygen-cycle

**10. Green House Effect :** Greenhouse gases such as carbon dioxide, methane, nitrogen oxide and Chlorofluorocarbons present in atmosphere prevents the escape of heat falling on Earth's surface rather than absorbing it. This keeps the Earth warm and the phenomenon is known greenhouse effect.

An increase in these greenhouse gases such as carbon dioxide in the atmosphere would cause more heat to be retained by the atmosphere and leads to global warming.

Green house effect will give rise to global warming due to which the average temperature will increase by 10 or 2° worldwide. Due to increased temperature the ice-caps would melt, there is rise in the sea-level and it is feared that coastal areas would be destroyed by floods. Uncertain climatic conditions are also the effect of global warming.

**11. Ozone layer :** Three molecules of oxygen combine to form ozone. Ozone layer is found in stratosphere. It acts as a ozone shield and protects. Earth from harmful effect of ultraviolet radiation. However many man-made components like CFCs (Chloro fluorocarbons) reacts with ozone releasing molecular oxygen, causing ozone depletion. Ozone depletion has been marked in Antarctic region where ozone layer thickness has dropped to 94 DU in 1994 from 285 DU. This depletion of ozone layer thickness is called ozone hole.