6th – Air Around Us

Air is all around us- a thick blanket of air called the **atmosphere**, surrounds our earth. Air is also present in thing which seem to be empty

Composition Of Air- it contains mainly nitrogen and oxygen it also contains carbon dioxide noble gases water vapour, dust particles and traces of other gases.

Nitrogen And Oxygen- Air contains about 78% nitrogen and 21% oxygen .oxygen in air supports burring whereas nitrogen does not

Carbon Dioxide- Air contains about0.03% of carbon dioxide .plant and animals take in oxygen and give out carbon dioxide during respiration

Water Vapour- The sun heats up the water in seas and oceans this water evaporates and forms water vapour

Dust And Smoke- Air contains dust. Air also contains smoke released from factories and vehicles

Supports Life- We all need air to survive. Air contains oxygen and carbon dioxide useful to plants and animals'. Plant use carbon dioxide of the air to make their own food by a process called **photosynthesis**

Oxygen: All living things breathe in oxygen. Oxygen is necessary for them to get energy from food. Since Living things need energy all the time for various Life processes, they need to breathe in oxygen all the time. The process of breathing in, getting energy from food and

breathing out is called **Respiration.** Living things on Land breathe in oxygen present in air. The air you breathe in through your nose goes into your lungs. Oxygen is absorbed from the air and used by the body. Living things that live under the soil breathe in air present in the soil. These are bubbles of air that was dissolve in water. The solubility of air reduces as the temperature goes up. .

Nitrogen: Nitrogen is required by plants for their growth. But plants are not able to absorb the nitrogen directly from the air. Nitrogen in the air is brought to earth in the form of nitric acid through Lightning and rain. Soil changes it to nitrate compounds which is absorbed by the plants. Also, nitrogen in the air is used by us to manufacture fertilizers. These fertilizers again provide the essential nitrogen to plants.

Carbon dioxide: Carbon dioxide is a very important gas for plants and animals. Plants use carbon dioxide for preparing food which in turn gives food to the entire Living world

In Plants- Plants have tiny pores called stomata found on the underside of a leaf. Air containing carbon dioxide and oxygen enters the plant through these openings where it gets used in photosynthesis and respiration. Plants have small openings called stomata on the undersides of Leaves through which air is taken in. Plant that float in water, e.g. water Lily, have stomata on the upper sides of the Leaves. Underwater plants such as tape grass have no stomata. They breathe in oxygen dissolved in water through their body surfaces

In Animals- All animals need to respire, be it a cockroach a fish or an elephant earthworms take in air through their skin surface the skin is kept moist with the help of a substance called mucous oxygen of the air gets directly absorbed through the moist skin a carbon dioxide is given out

In Aquatic Animals And Plants- most aquatic animals like fish, tadpole crab and shrimp have special organs for respiration called gill. Gills help to take in oxygen and give out carbon dioxide. Some animals that live in water, e.g. whales come up to the water surface to breathe in oxygen from the air. Others, for example, fish, breathe in oxygen dissolved in water. Fishes have organs called gills, instead of Lungs. When water passes through the gills, oxygen dissolved in the water is absorbed..

In Amphibians –Amphibians like frog newt and salamander need breathing systems for both air and water. Frogs have well developed lungs to breathe in air when on land in water, frogs breathe with the help of their moist skin.

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In Birds-birds have a pair of lungs with air sacs that remain open all the time, so that air can easily pass through them?

Balance Of Oxygen And Carbon Dioxide In The Air - The balance of oxygen and carbon dioxide in the atmosphere is maintained through respiration in plants and animals and by photosynthesis in plants. Plants produce oxygen during photosynthesis and utilize oxygen during respiration. They produce munch more oxygen during photosynthesis than they consume.

The Oxygen Cycle: Oxygen gets removed from the air during respiration and burning. However, the percentage of oxygen in the air remains almost the same. This is because oxygen is added to air during the process of Photosynthesis. Plants use oxygen for respiration during the day as well as at night. However, during the day, the oxygen released during photosynthesis is more than the oxygen used up in respiration. Therefore, there is net release of oxygen. The natural cycle of consumption of oxygen by respiration and burning, and its release by photosynthesis is called the oxygen cycle. It is a delicately balanced process. Large scale deforestation and excessive burning of fuels can upset this balance and harm us. Hence there is need to plant more trees and burn less fuel.

Uses of air: Besides breathing, air is useful to us in many other ways. The wind makes windmill rotate. The windmills are used to draw water from tube wells and run flour mills. It is now being widely used to generate electricity. Airplanes, helicopters, balloons, parachutes and yachts work because of air. Birds, insects and bats are, able to fly because of the presence of air. Air helps in the dispersal of seeds. Air helps in pollination of several flower. Air plays an important role in the water cycle.

Role of the Atmosphere: The atmosphere causes weather changes. When the sun shines brightly, it heats the earth. The air also gets heated. Hot air rises, and cold air rushes in to take its place. This is how wind blows. Blowing of storms and cyclones is also due to the movement of air. The water vapour in the air is responsible for rainfall and snowfall. Thus, the atmosphere is responsible for weather changes.

The atmosphere helps to maintain\h right' temperature on the earth'. The heat and the light of the sun fall on the earth s astrosphere . Some of it is absorbed by the atmosphere, while the rest is reflected back. This prevents the earth from becoming very hot during the day. At night, the trapped heat in the atmosphere prevents the earth from cooling down too much.

The atmosphere, thus, acts like a blanket around the earth and helps to keep the earth. surface at the right temperature for life to exist.

Air Pollution- The addition of substance in the environment in quantities that are harmful to living being is called pollution .air is getting polluted day by day because of various human activities

Effects of Air Pollution- Harmful gases present in the polluted air make breathing difficult. Air pollution leads to a lot of lung asthma. Air pollution also damages crops

There are a number of ways by which we can reduce air pollution

1. By planting more and more trees
2. Recycling plastics
3. Regular checking of vehicles for emission of harmful gases

Ozone Layer: The upper atmosphere..contains a layer of gas called Ozone. It prevents harmful rays of the sun from reaching the earth. These rays, called Ultra Violet Rays, can cause eye problems and skin cancer.

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