6th - Water & Its Importance - I

Water available for use-about three -fourth of the earth surface is covered with water that is why it is also called the water planet. About three-fourths of the earth's surface is covered with water. Water is found in puddles, ponds, rivers, lakes and oceans. It is present under the ground and in glaciers in the form of ice. It is also present in air in the form of water vapour.

1) 97.40% of the available water is in seas and oceans which cannot be directly used by us because of its high salt content. A lot of fresh water is frozen in glaciers and in the polar ice caps. Thus, only O.O1% of the water on the earth is available to us for consumption.

2) Water is not evenly spread on the earth— there may be floods at some places and complete lack of rain for years at other places.

3) Groundwater is an important source of fresh water for us. However, humans have interfered with the natural renewal processes of groundwater. As a result the water table (level of groundwater) in cities and towns is constantly going down and there is a shortage of groundwater.

4) Pollution of sources of water, such as rivers, lakes and groundwater has resulted in deterioration of the quality of water available to us.

Use Of Water- about 70% of the total water available is used for agriculture, 20-22% by industries and only 8% is used for personal or domestic needs

Agricultural Needs- farmer rely on water to. sustain their agricultural crops example-wheat paddy etc. many a times rain fall is not sufficient to water these crops and farmer have to use artificial watering systems referred to as irrigation

Industrial Needs-factories use a large amount of water every day -as raw material for cleaning heating cooling generating

Personal Needs -water that is suitable for drinking is called potable water. We also need water to bathe wash clothes and dishes clean our house, and to water plants.

Importance of Water For Sustaining Life: Water is essential for life. The bodies of all pants and animals have large amounts of water. Several life processes in humans and animals, such as digestion of food, absorption of nutrients by the body, distribution of nutrients to various parts of the body, or getting rid of body wastes, need the presence of water.

We take in water through food and drink, and lose it in the form of urine, sweat and exhaled air. Water that evaporates from the surface of our body in the form of sweat takes away a lot of heat and thus cools the body.

In plants, water is essential for germination of seeds and their growth as well It also helps to transport nutrients from the soil, and food from the leaves to different parts of the plants.

Plants use water, along with carbon dioxide from the air, to make food in the presence of sunlight.

Water is useful to us in many other ways:

- It is essential for cooking and washing.
- It is used in dams to generate electricity.
- A large amount of water is used in agriculture and industries.
- Water is also used as a medium of transport. Water is also the home for several plants and animals.

States of water: water exists in three states liquid, gas, solid. Ice is water in solid state. Water that we drink is in liquid state. Steam is water in the gaseous state.

Evaporation: the process by which a liquid is converted to its vapor is called evaporation

Condensation: the process by which the vapor of substance is converted to its liquid from is called condensation.

Cloud Formation: When the temperature of air increase, it expands this makes the air lighter and it rises up in the atmosphere, taking water vapors with it. As the air rises, it begins to cool. The water vapors condense on dust particles present in the atmosphere to form millions of tiny droplets.

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Change of state: The state of water can be changed by changing the temperature, i.e. by heating or cooling.

Water freezes to form ice: Fill an ice tray with water and keep it in the freezer of a refrigerator to coot it. Take out the tray after 2—3 hours. When water is cooled, it forms ice. This is known as freezing of water.

Ice melts to form Liquid water: Keep a few ice cubes in a plate outside the refrigerator. When ice is heated, it melts quickly to form water. This is known as melting of ice.

Water evaporates to form water vapour: When water is heated, it changes to form water vapour, a gas. This is known as evaporation. Though some evaporation takes place at all temperatures, a hot liquid evaporates faster than a cold liquid. Wet clothes become dry because the water in the clothes slowly evaporates. Heat water in a pan-till it boils. Steam is formed and the quantity of water reduces quite rapidly.

Water vapour condenses to form water: Take water in a beaker and add a few ice cubes to it to make the water cold. As the air in contact with the tumbler cools down, the water vapour present in the air condenses to form water. Thus, when water vapour is cooled, it changes back to water. This is known as condensation.

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