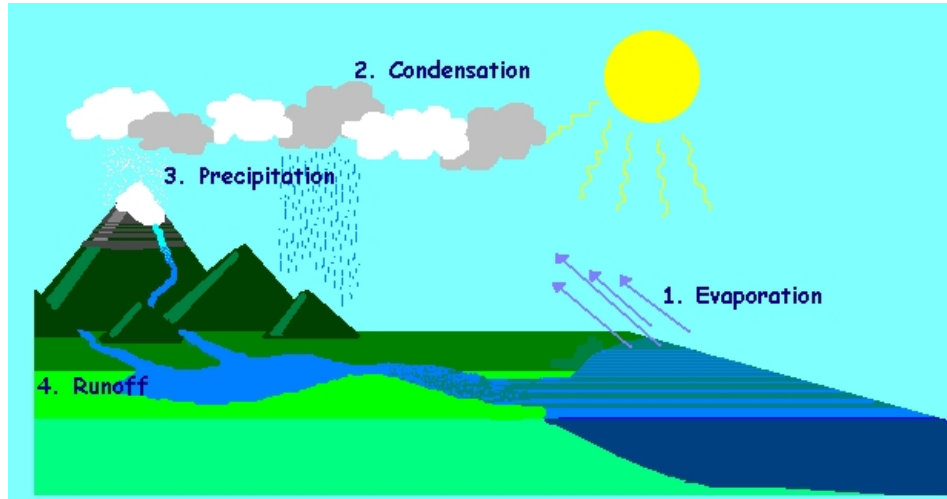


How is Liquid Converted into Vapour?



It is commonly observed during the rainy season that water falling on roads and streets disappears after a few hours. Similarly, in summer, wet clothes dry up very soon. Do you know where this water goes? This water gets converted into vapor and goes into the atmosphere. Conversion of water into vapor is called evaporation.

How does evaporation take place? Every substance is made up of very small particles called molecules. These molecules are held together by strong forces of attraction called cohesive forces. These forces are opposed by the repulsive forces caused due to the motion of molecules. As long as the cohesive forces are far greater than the repulsive forces, the substance remains in the solid state. When the substance is heated up, it absorbs heat energy due to which the molecules are set in rapid motion. This motion starts counterbalancing the cohesive force, that is, this force tries to separate them apart. When the repulsive force generated by the motion of molecules equals the cohesive force, matter changes from solid to liquid. If the liquid is continued to be heated, the molecules move still faster and when the force due to the increased motion exceeds the cohesive force, the molecules of the liquid become free and escape into the air. This is how liquid is converted into vapor. The liberation of the molecules from the liquid surface into the air is called evaporation. Evaporation takes place at all temperatures.

This explains the drying up of clothes in air. The rate of evaporation increases with the rise in temperature. Wet clothes put in the sun dry up faster than in shade because at higher temperature the motion of molecules becomes faster and the evaporation is also faster. It also takes place more rapidly when the air is dry. That is why clothes dry up more quickly on a dry sunny day than on a damp cloudy day.