

6th – Life Process Respiration



The cell is the smallest unit of a living organism. It has a structure of its own and performs many functions. Group of cells make a tissue. Tissues collectively form organs. The different organs in turn, working together for a certain major activity, form an organ system. Human, and animal, bodies are made up of many such organ systems which carry out different functions.

The following are the main organ systems of the human body:

- Digestive system
- Respiratory system
- Circulatory system
- Nervous system
- Excretory system
- Skeleton system
- Reproductive system

The Respiratory System: Respiration is the process in which oxygen is taken in, and carbon dioxide is released from, the body. During this process there is a breakdown of food that results in the release of energy) the respiratory system, in human beings, consists of the following organs:

Nasal Cavity: Air enters the nose through the nasal cavity. As air passes through the nasal cavity, it gets warmed up and also gets filtered. The hair, present in the nostrils, stop the dust and germs, from entering the respiratory system.

Pharynx: The nasal cavity leads into an organ called the pharynx. From the pharynx, air passes into a chamber called the larynx. The larynx produces sound and is also called the voice box. The opening of pharynx, into the larynx, is guarded by a valve called the epiglottis. This valve closes this opening when we take in the food; it keeps it open during breathing.

Wind Pipe: The wind pipe is a delicate muscular tube, situated in front of the food pipe, in the neck. It is about 12 cm in length and 2.5 cm in diameter. The wind pipe gets divided into two parts, called bronchi, as it enters the lungs, in the chest cavity.

Lungs: The bronchi lead into the lungs which are situated on either side of the chest cavity. Lungs contain a number of air sacs and blood vessels. When air enters the lungs, the blood vessels, around the air sacs, take in oxygen and give out carbon dioxide and water. Oxygen is carried by the blood to different parts of the body. In return, carbon dioxide and water vapour from the blood, enter the lungs and are thrown out through the nose.

Diaphragm: Lungs cannot move by themselves. It is the movement of a diaphragm, and the muscles, between the ribs of the chest wall, that causes the expansion and contraction of the lungs. Thus, breathing takes place.