

Chapter 6 : Life processes Notes

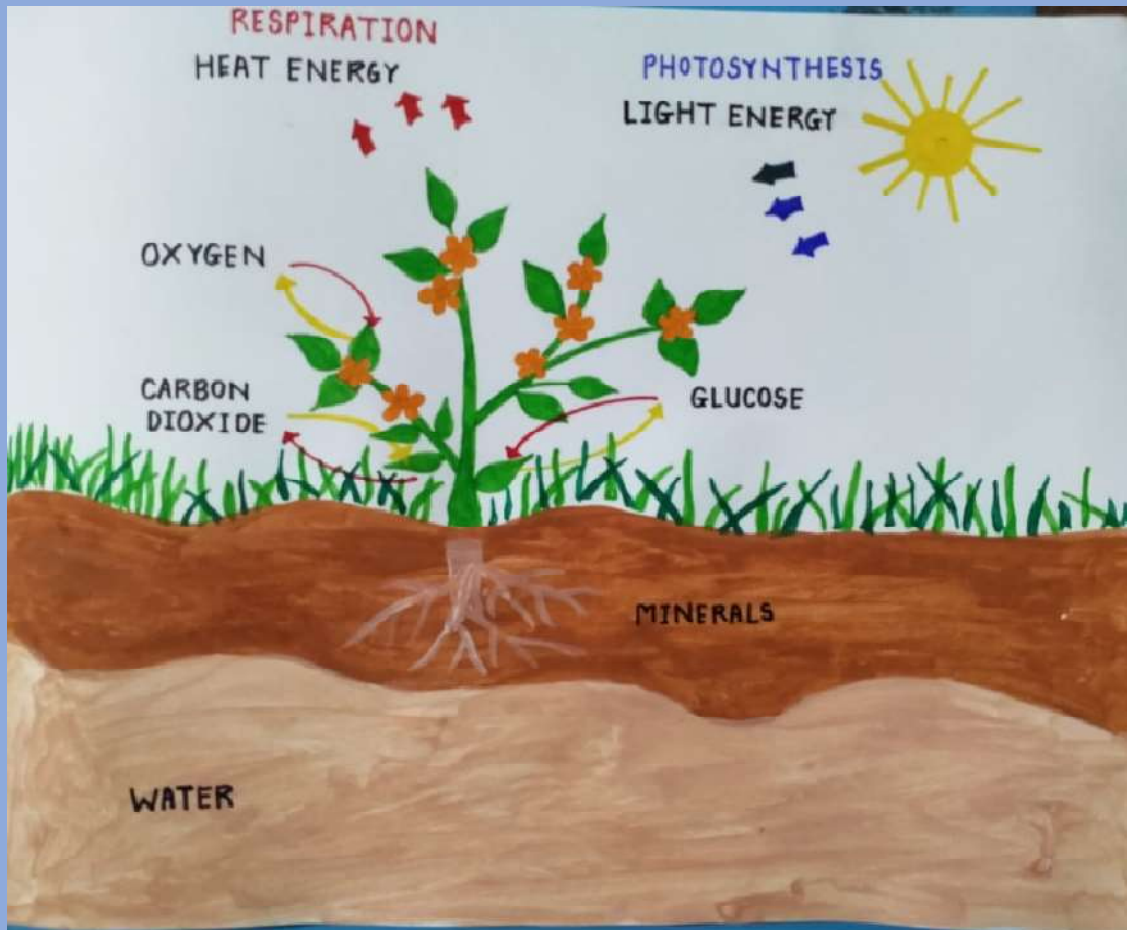
When we define a term “Life processes”, we are discussing about a collective term about all living organisms such as nutrition, digestion, movement, respiration and excretion. In general living organisms are those organisms which have growth and reproduction ability. The organism who can grow and able to produce considered as living organisms.

Nutrition: For every living organism from simplest amoeba to large animals or humans nutrition is important. To survive and to get energy every living organism require nutrients in any form such as proteins, vitamins, and lipids. This is called nutrition. The major difference between living organism major cause is mode of nutrition. On the basis of nutrition, living organisms are basically divided into two types such as autotrophs and heterotrophs.

Autotrophs: The autotrophs are those organisms which have ability to prepare their own food material, they do not depend on any other organism for nutrition, for example : plants. The plants can make their own food with the help of sunlight and the process called photosynthesis. The process of photosynthesis occurs in light, when these plant cells receives light and converts light energy to chemical energy.

Heterotrophs: It is regarded as second type of nutrition which can be explained as, the organisms which depend on another living organisms for their food or nutrition, they cannot prepare their own food material but instead depend on others. Heterotrophic nutrition can be divided into 3 types such as herbivores, carnivores and omnivores. The living organisms which feed on plant material called as herbivores, whereas the living organisms which feed on another animals or animal parts they are called carnivores. The omnivores are the living organisms which can eat anything, are called as omnivores.

Nutrition in plants: The plant get their nutrition by the process of photosynthesis. It is called as autotrophic mode of nutrition. It is through the process of both respiration and photosynthesis. With the help of photosynthesis plants make their food, and by respiration they exchange the gases.



Nutrition in animals: Animal nutrition is heterotrophic mode of nutrition. The heterotrophs are depend on other living organisms for nutrition. They can be saprophytic, parasitic or holozoic. The saprophytic mode of nutrition which depend on dead and decaying organic matter. Parasitic nutrition which animals feed on or live on another living animal body and get nutrition. The holozoic mode of nutrition is complete form of nutrition, which usually takes place in human which occurs in a series of stages such as ingestion, digestion, absorption, assimilation and egestion.

Nutrition in humans: The nutrition in case of humans can be changed according to habitat and environment, but process of digestion is same in all humans. It consist of digestive system. The digestive system usually made up of two components such as digestive tract and digestive glands. All the parts of digestive system such as mouth, pharynx, esophagus, stomach, small

intestine and large intestine work in co-ordinate manner and carry out the process of digestion and absorption.

Respiration: Respiration basically means exchange of gases specifically oxygen and carbon dioxide. It is the process of taking oxygen from the environment and releasing carbon dioxide in the environment. The respiration can be different in plants, animals and humans.

Respiration in plants : We know two important processes in plants that are photosynthesis and respiration. The exact reverse of photosynthesis is respiration. The respiration carried out in plant is totally different from animals, in which breakdown of sugars into small and simple compounds by a series of cycle such as glycolysis, krebs cycle and electron transport chain.

Respiration in animals : Respiration in animals by the process of inhalation and exhalation. There are two types of breathers present in animals are terrestrial and aquatic breathers. Every breathing system has advantages and disadvantages.

Respiration in humans : Human respiration contains inhalation and exhalation. The series of parts of respiratory system are involved such as nasal cavity, trachea, lungs, alveoli, etc. during inhalation and exhalation contraction and relaxation of muscles are carried out.

Transport in plants: Within plant system a major transportation is carried out which is important for survival of plant. The transport in plant is of food, water and minerals. Various conducting tissues such as xylem and phloem are responsible for conduction of nutrients. Through phloem food is transported across the plant body and by xylem water movement occurs.

Components of blood : Blood is usually made up of 55 % plasma, 44 % red blood cells and 1 % platelets and white blood cells. Each and every component of blood plays an important role. RBC contains hemoglobin, platelets responsible for blood clotting and WBC to help to prevent infection. Itself blood has many major role in body such as regulating the body temperature , pH, ions and transporting nutrients throughout the whole body.

Human circulatory system : The circulatory system can also be named as cardiovascular system. It consist of blood, heart and vessels. In human heart is made up of 4 chambers and circulate the oxygenated blood throughout the body. Vessels play an important for circulating fluid, across the organs.

Lymphatic system: Lymphatic system functions as immune system to eliminate the pathogens from the body. It is divided into two parts such as primary lymphoid organ and secondary lymphoid organ. The primary lymphoid organ contains bone marrow and thymus whereas secondary lymphoid organ contains spleen and lymph node.

Excretion : After the digestion, all the undigested left over food material enters in the excretory system. The excretory system contains 2 kidneys, 2 ureters, urinary bladder and urethra. The main structural and functional component of excretory system is nephron, which is helpful in formation of urine.