

UNITS	Learning Outcomes
<p>I-Food and Digestion</p> <p>A- Food</p> <p>a- Kinds of food</p> <p>b- Food tests</p> <p>B- Digestion</p> <p>a- Digestive system</p> <p>b- Mechanical digestion</p> <p>c- Chemical digestion</p> <p>C- Absorption</p> <p>II- Breathing</p> <p>A- Respiratory system</p> <p>B- Respiratory movements</p> <p>C- Respiratory gas exchange</p> <p>D- Respiration in Aerial medium</p> <p>E- Respiration in aquatic medium</p>	<p>Notice that there are energy food, functional food and building food</p> <p>How to test for starch and oil</p> <p>List the organs involved in digestion and indicate the pathway of food</p> <p>Label a schematic drawing of the digestive system of a human being</p> <p>Notice that the food can be broken down into pieces with the help of teeth and muscles</p> <p>Notice that the food can be broken down by digestive juices into nutrients which can be used by the organism</p> <p>Understand that mechanical digestion speeds up chemical digestion</p> <p>Understand that absorption is the passage of nutrients into the blood and that the non-absorbed materials are eliminated as feces</p> <p>Notice that the organs involved in breathing form the respiratory system</p> <p>Label a schematic drawing of the respiratory system of a human and indicate the pathway of air</p> <p>Notice that inhalation and exhalation are needed for the renewal of air in the lungs</p> <p>Know that respiratory gas exchange is between an organism and its environment</p> <p>Notice that during gas exchange oxygen gas is used and carbon dioxide is produced</p> <p>Use the tabulated results given by an oxymeter to prove that oxygen is used</p> <p>Use the results given by Lime water to prove that carbon dioxide is produced</p> <p>Relate respiratory gas exchange to cell respiration</p> <p>Know that during cell respiration oxygen gas is needed to release the energy stored in nutrients</p> <p>Know that the carbon dioxide produced during cell respiration is exhaled outside</p> <p>Notice that gas exchange in aerial medium takes place in lungs, moist skin and tracheae</p> <p>Recall that gas exchange is done between the organism and the external medium (air)</p> <p>Know that blood transports gases except in case of insects</p> <p>Distinguish between pulmonary, cutaneous and tracheal respiration</p> <p>Understand that gas exchange takes place at the level of the alveoli</p> <p>Relate diffusion to pulmonary gas exchange</p> <p>Know the properties of alveoli that facilitate gas exchange</p> <p>Notice that gas exchange in an aquatic medium takes place in gills</p>

<p>III- Plants</p> <p>A- Nutritive needs of chlorophyllic plants</p> <p>B- Absorption and translocation Of water and minerals</p> <p>C- Photosynthesis and production of organic matter</p> <p>D-Nutritive needs of fungi</p> <p>IV- Reproduction of flowering Plants</p> <p>A- Sexual reproduction</p> <p>- Flower</p>	<p>or through moist skin</p> <p>Notice that gas exchange in an aquatic medium takes place between the organism and water surrounding it</p> <p>Know that blood transports gases</p> <p>Distinguish between gill respiration and cutaneous respiration</p> <p>Understand gas exchange at the level of gills</p> <p>Recall that chlorophyll is a green pigment that captures sunlight energy to help plants carry on photosynthesis.</p> <p>List the nutritive needs of plants (water, CO₂, light, minerals)</p> <p>Know the meaning of nutritive solution.</p> <p>Compare between a nutritive solution and fertilizers.</p> <p>Analyse experiments to prove the importance of a certain nutritive need for Photosynthesis.</p> <p>Know that absorption is necessary to obtain water and minerals from their Environment.</p> <p>Know that root hairs are well-adapted to absorption due to many factors: (thin wall, many in number, many vacuoles)</p> <p>Analyse experiments to show the upward movement of water and dissolved Substances</p> <p>Distinguish between the 2 kinds of stem tubes: xylem and phloem</p> <p>Distinguish between the 2 kinds of saps: crude sap and elaborated sap</p> <p>Recall the presence of microscopic structures in leaves to exchange gases</p> <p>Draw and label a microscopic section of stomata</p> <p>Recall that photosynthesis is the process by which plants make their own food.</p> <p>Write the chemical equation of photosynthesis</p> <p>Know that starch is the organic matter produced in leaves.</p> <p>Know how to test for the presence of starch in leaves.</p> <p>Know the uses of organic matter</p> <p>Compare between plants and fungi</p> <p>Know that fungi cant make their own food, but have to take their nutrients from their environment</p> <p>List the conditions needed for fungi to grow</p> <p>Know that some fungi are useful and some are harmful</p> <p>Understand that flower is the reproductive part of the plant</p> <p>Know that stamen is the male part and pistil is the female part of a flower</p> <p>Label a schematic drawing of a stamen and that of a pistil</p> <p>Label the parts of a flower</p>
---	---

<p>- Pollination</p> <p>- Fertilization</p> <p>- Seed</p> <p>-Germination</p> <p>- Vegetative multiplication</p> <p>V- Genetics</p>	<p>Describe the mechanism of pollination until fertilization Understand that in some plants, the flower can be self pollinated or cross pollinated by same species. Understand that the male gamete is in the pollen grain and the female gamete is in the ovule</p> <p>Understand that the union of male and female gamete forms a zygote Understand that after fertilization, the ovary changes into a fruit which contains one or more seeds</p> <p>Know that a fertilized ovule becomes a seed Know the different parts of a seed</p> <p>Know that the embryo develops into a plant using food reserves</p> <p>Understand that in some plants, vegetative parts can develop into new plants identical to the parent Compare vegetative multiplication and sexual reproduction</p> <p>Recall that chromosomes are responsible about inherited traits Know that gametes transmit genetic information to offspring Know that a zygote receives an equal number of chromosomes from each parent Know that a gene is a part of the chromosome responsible for a certain inherited trait</p> <p>Distinguish between a dominant gene and a recessive gene Distinguish between pure and hybrid Distinguish between genotype and phenotype Know how to represent a dominant gene and a recessive gene Know how to write genotype and phenotype Know how to use factorial analysis to find first filial generation</p>
---	--