

CURRICULUM

Grade-8-  
Biology

Cycle:Intermediate  
Textbook: Life and Earth Science (National Textbook)

| UNITS  | Learning Outcomes   |
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| <b>The Immune Response</b><br>Self and non-self  | Know how does the body recognize foreign particles<br>Understand the importance of HLA molecules in grafting<br>Distinguish between HLA of two identical twins and two different organisms<br>Give examples on self and non-self molecules<br>Define antigen  |
| Cells, molecules and organs of the immune system | Understand the meaning of cancer<br>Know the parts of the immune system<br>Recall the job of the leukocytes<br>Know the different kinds of leukocytes<br>Differentiate between the properties of different kinds of the leukocytes<br>Know what are antibodies<br>Specify the job of the antibodies<br>Understand that antibodies are of huge diversity and they are specific |
| Non-specific immune response                     | Know the job of the bone marrow and the thymus<br>Understand the meaning of non-specific immune response<br>Know that natural barriers, inflammatory reaction, and phagocytosis are involved in non-specific immune response<br>List the natural barriers<br>Describe the signs of the inflammatory reaction<br>Know the meaning of phagocytosis                              |
| Specific immune response                         | Determine the cells that are phagocytes<br>Understand the meaning of specific immune response<br>Understand that T- and B- cells are the effectors of specific immune response<br>Know that there are 2 kinds of specific immune response: cell-mediated and humoral specific immune response   |
| Cell-mediated specific immune response           | Understand the mechanism by which T-cells destroy target cells<br>Know that graft rejection and cancer are two examples on cell-mediated specific immune response   |
| Humoral specific immune response                 | Know that rejection of blood transfusion is an example on humoral specific immune response<br>Know the meaning of agglutinogens and agglutinins<br>Know the 4 blood groups A, B, AB, and O<br>Know the rule for blood transfusion   |
| Characteristics of the specific immune response  | Know that specific immune response is more important and efficient than non –specific immune response<br>List the three characteristics of specific immune response<br>Understand the meaning of immunological memory   |

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| Primary and secondary immune responses                        | <p>Understand the meaning of specificity</p> <p>Know the meaning of amplification</p> <p>Define primary and secondary immune response</p> <p>Differentiate between primary and secondary immune responses</p>   |
| <b>Methods of anti-microbial prophylaxis and therapeutics</b> | <p>Define vaccination</p> <p>Define serotherapy</p> <p>Use documents to understand the mechanism of vaccination</p> <p>Differentiate between vaccination and serotherapy</p> <p>Know the importance of vaccination in protecting the body and preventing diseases</p> <p>Know the importance of serotherapy in providing immediate immunity</p>   |
| Antisepsis, Asepsis, Chemotherapy, and Antibiotherapy         | <p>Define asepsis, antisepsis, chemotherapy, and antibiotherapy</p> <p>Understand that antisepsis and asepsis are prophylactic</p> <p>Understand that chemotherapy and antibiotherapy are therapeutic</p> <p>Recall history of antibiotics</p> <p>Know that antibiotics may be natural or synthetic</p> <p>Know that antibiotics are specific</p>   |
| <b>Heredity</b>   | <p>Recall the meaning of a dominant and a recessive gene</p> <p>Recall the meaning of pure and hybrid</p> <p>Recall the meaning of genotype and phenotype</p> <p>Know that sperms are male gametes and ova are female gametes</p>   |
| <b>Mitosis</b>  | <p>Understand how to use factorial analysis to find first filial generation</p> <p>Know the meaning of cell division</p> <p>Know the importance of cell division</p> <p>Know the importance of interphase</p> <p>Specify the importance of duplication of chromosomes</p> <p>List the phases of mitosis in order</p> <p>Describe briefly the phases of mitosis</p> <p>Know that mitosis is a conformed reproduction</p> |
| <b>Circulatory System</b>                                     | <p>List the parts of the circulatory system</p>   |
| Heart   | <p>Recall the job of the heart</p> <p>Draw and label the parts of the heart</p> <p>Know the difference between auricles and ventricles</p> <p>Define a septum and specify its importance</p>  |
| Valves  | <p>Define a valve and specify its role</p> <p>Know the kinds of valves</p>  |
| Blood vessels   | <p>List the kinds of blood vessels and specify the role of each</p>   |
| Blood circulation   | <p>Indicate the pathway of a drop of blood as it circulates between the heart, lungs and body parts</p>   |
| Double circulation  | <p>Know that blood circulation is a double circulation</p>  |
| Pulmonary Circulation   | <p>Know that pulmonary circulation is between heart and lungs and that pulmonary arteries and veins are involved in small circulation</p> <p>Indicate the importance of small circulation</p>   |
| Systemic Circulation  | <p>Know that systemic circulation is between heart and body parts and that aorta and venae cavae are involved in big circulation</p> <p>Indicate the importance of big circulation</p>  |

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| <p><b>Digestion</b></p> <p>Digestive system</p> <p>Digestion</p> <p>Mechanical digestion</p> <p>Chemical digestion</p> <p>Digestive juices</p> <p>Enzymes</p> <p>Nutrients</p> <p>Absorption</p> <p>Bile</p> <p>Properties of enzymes</p> | <p>Draw and label the parts of the digestive system</p> <p>List in order the parts of the digestive system through which food passes</p> <p>Name the parts of the digestive system through which food doesn't pass</p> <p>Recall that digestion is breaking down of food</p> <p>Recall that mechanical digestion is breaking down by muscles and teeth</p> <p>Know that peristalsis is the muscular contraction that pushes the food down the digestive system</p> <p>Recall that chemical digestion is breaking down food with the help of digestive juices</p> <p>Recall that chemical digestion is a chemical transformation</p> <p>Know the kinds of digestive juices</p> <p>Know the enzymes present in the mouth, the stomach, and the small intestine</p> <p>Know that nutrients are the simplest molecules obtained from the complete digestion of food</p> <p>Know that water, vitamins, and mineral salts are easily absorbed into blood</p> <p>Know that the passage of the nutrients from the small intestine into blood is referred to as absorption</p> <p>Specify the role of bile in lipid digestion</p> <p>Define a substrate</p> <p>Define chemical medium and Ph</p> <p>Indicate that enzymes act on specific substrate, in a specific chemical medium and at a suitable temperature</p> |
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