

# LEARNING OUTCOMES

## **Chapter 1. The living World**

The Learner....

- 1.1 Lists the difference between living and non-living.
- 1.2 Identifies the common name and scientific names of organisms.
- 1.3 Lists the various taxonomical aids and explains its importance in identification and classification.
- 1.4 Identifies and lists examples
- 1.5 Prepares flow chart showing organisms with their taxonomic categories.

## **Chapter 2. Animal Kingdom**

- 2.1 Explains the fundamental features used for classification of organisms
- 2.2 Classifies and locates the position of animals among phylum
- 2.3 Compares the salient features of various phyla
- 2.4 Compares the different habit and habitat of various organism.
- 2.5 Differentiates the salient features of animals
- 2.6 Recognizes the adaptation of animals.
- 2.7 Compares the characters present in different classes of Phylum Chordata.
- 2.8 Differentiates the salient features of various animals.
- 2.9 Recognizes the adaptations seen in chordates.

## **Chapter 3. Structural Organisation in Animals**

- 3.1 Identifies, differentiates, sketches, labels, and explains the different types of tissues
- 3.2 Explains and sketches the structure of muscles.
- 3.3 Constructs the model of neuron.
- 3.4 Recognises, explains, sketches and labels the major parts of earthworm
- 3.5 Differentiates the functions of various systems of earthworm.
- 3.6 Appraises the importance of earthworm's role in nature



- 3.7 Recognizes, explains sketches and labels the major parts of cockroach.
- 3.8 Identifies the role of cockroach in nature
- 3.9 Differentiates the functions of various systems of cockroach.
- 3.10 Recognizes, explains, sketches and labels the major parts of frog.
- 3.11 Appraises the importance of frog's role in nature.

#### **Chapter 4. Biomolecules**

- 4.1 Analyses organic and inorganic compounds in living matter and identifies its structure.
- 4.2 Differentiates primary and secondary metabolites and its role, appraises its ecological importance.
- 4.3 Recognizes why lipids come under acid insoluble fraction.
- 4.4 Identifies the structure of protein and their functions, differentiates essential and non essential amino acids
- 4.5 Recognizes identifies and differentiates different polysaccharides, nucleic acids and their role.
- 4.6 Recognizes and differentiates different nucleic acids and their role
- 4.7 Explains and identifies structure and function of proteins
- 4.8 Recognizes the various bonds found in polymers and constructs the model of DNA
- 4.9 Realizes the dynamic state of body constituents.
- 4.10 Recognizes the role of ATP and differentiates anabolism and catabolism.
- 4.11 Recognizes that steady state is a non-equilibrium state
- 4.12 Explains nature of enzyme action, factors affecting enzyme activity, classification and co-factors.
- 4.13 Identifies the role of enzymes.

#### **Chapter 5. Digestion and Absorption**

- 5.1 Describes the process of digestion

- 5.2 Identifies, sketches and labels digestive system.
- 5.3 Constructs model of teeth, digestive system and villi
- 5.4 Locates various digestive glands and their secretions
- 5.5 Appraises the importance and functions of digestive glands
- 5.6 Identifies various stages, mechanisms of absorption and areas of absorption in the digestive system
- 5.7 Identifies various digestive system disorders, healthy life styles and healthy food habits

### **Chapter 6. Breathing and Exchange of Gases**

- 6.1 Compares respiratory organs in different organisms.
- 6.2 Constructs and explains the model of human respiratory system.
- 6.3 Identifies different steps involved in respiration
- 6.4 Demonstrates mechanism of respiration using a working model
- 6.5 Recognizes, explains and differentiates various respiratory volumes and capacities.
- 6.6 Recognizes the hazardous effects of smoking on vital capacity.
- 6.7 Illustrates gas exchange and creates a table showing partial pressure difference
- 6.8 Demonstrates transport of gases with the help of chart
- 6.9 Recognises and explains the steps involved in regulation of respiration
- 6.10 Recognises and explains respiratory disorders

### **Chapter 7. Body Fluids and Circulation**

- 7.1 Identifies the importance of circulatory system
- 7.2 Describes, Demonstrates and sketches the constituents of blood.
- 7.3 Differentiates different types of blood groups and evaluates its importance in blood transfusion.
- 7.4 Illustrates the process of blood coagulation.
- 7.5 Differentiates blood and lymph and recognizes the importance of lymph as a circulatory fluid.
- 7.6 Classifies animals based on types of circulatory pathways
- 7.7 Differentiates single, incomplete double, and complete double circulation.



- 7.8 Differentiates different types of heart in vertebrates.
- 7.9 Explains the structure, Constructs a model of heart and Appraises the working of heart
- 7.10 Constructs a flow chart showing double circulation and recognizes its importance in human circulation.
- 7.11 Explains the process of regulation of circulatory system.
- 7.12 Evaluates the disorders related to heart and judges the importance of heart transplantation
- 7.13 Develops healthy habits to maintain the healthy condition of the heart.

### **Chapter 8. Excretory Products and their Elimination**

- 8.1 Explains types of nitrogenous waste materials, distinguishes animals based on different types of nitrogenous wastes.
- 8.2 Identifies, locates, sketches and labels different parts of excretory system and constructs a model of excretory system, L S of Kidney and nephron
- 8.3 Explains and differentiates steps involved in urine formation
- 8.4 Prepares a chart and explains the functions of different parts of renal tubule.
- 8.5 Appraises the effectiveness of counter current mechanism in the formation of urine.
- 8.6 Evaluates the importance of regulating the function of kidney
- 8.7 Identifies the necessity of ADH RAAS and ANF in excretion
- 8.8 Recognises the importance of micturition as a process of voiding urine from the urinary bladder
- 8.9 Recognises the excretory functions of skin lungs liver etc
- 8.10 Explains and evaluates kidney disorders. Judges the importance of Hemodialysis and Organ transplantation.
- 8.11 Develops a healthy routine to avoid type of disorders from life.

### **Chapter 9. Locomotion and Movement**

- 9.1 Compares and lists the types of movement in different animals.
- 9.2 Differentiates the types of muscles
- 9.3 Sketches and labels the structure of striated muscle fibre.

- 9.4 Prepares a model showing the structure of contractile protein.
- 9.5 Illustrates the steps in muscle contraction
- 9.6 Identifies and lists bones
- 9.7 Prepares a branching chart of skeletal system.
- 9.8 Differentiate the movement of joints.
- 9.9 Identifies and recognises the disorder of muscular and skeletal system.

### **Chapter 10. Neural Control and Coordination**

- 10.1 Recognizes sense organs are controlled and co - ordinate by nervous system.
- 10.2 Classifies organisms based on their neural system.
- 10.3 Prepares chart, sketches and labels central nervous system.
- 10.4 Constructs model of neuron.
- 10.5 Illustrates the formation and transmission of nerve impulse.
- 10.6 Realises how impulse transmission occurs along the synapse.
- 10.7 Identifies, sketches and labels the structure of brain and constructs model of brain.
- 10.8 Explains the process of reflex action and prepares a flow chart of reflex arc.
- 10.9 Explains the structure and function and constructs model of eye and ear.

### **Chapter 11. Chemical Coordination and Integration**

- 11.1 Explains the role of chemical substances as messengers which helps in co-ordination
- 11.2 Lists and prepares chart of types of organs, secretions, functions, and disorders caused by their malfunctioning
- 11.3 Explains the role of hormones secreted by tissues other than endocrine glands.
- 11.4 Dramatises mechanism of hormone action