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 Developes healthy habits to maintain the healthy condition of the heart.

Chapter 8. Excretary 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 Hemodyalysis 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