

ANNUAL CURRICULUM PLAN (2020-21)

SUBJECT: BIOLOGY

CLASS: 11

VISION:

- Students should be able to use science and technology to acquire new knowledge and to solve problems, so they may improve quality of their lives and the lives of others.
- Students should be able to address science related societal, economic, ethical and environmental issues critically.
- Students should be able to develop a rational sense of wonder and curiosity about scientific and technological endeavours.

APRIL-SEPTEMBER

Chapter	Transaction strategies/ Innovative pedagogy	Learning outcomes
<p>UNIT-1 Diversity of living organisms</p> <p>L-1 THE LIVING WORLD (upto pg no 11 for current session)</p> <p>-What is living?</p> <p>-Biodiversity, need for classification</p> <p>-Three domains of life</p> <p>-Taxonomy and systematic</p> <p>-Concept of species and taxonomical hierarchy</p> <p>-Binomial nomenclature</p> <p>-Tools for study of taxonomy- museums ,zoological parks, herbaria, botanical gardens</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, play card ,peer to peer learning • Chalk board, smart board. • Questioning • Activation and use of prior knowledge • Use of text structure • Day to day experience • Group discussion • Lab activity • Observation • Placard • Making uno card • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<p>Learner will be able to</p> <ul style="list-style-type: none"> • Enumerate the distinctive characteristics exhibited by living organisms • Define and explain the terms biodiversity, classification, identification, systematics, taxonomy and nomenclature • Enumerate the universal rules of binomial nomenclature given by the International Code of Botanical Nomenclature and ICZD • Define and explain the taxonomic categories and their hierarchy with suitable example • Explain the utility of taxonomy in agriculture, industries, forestry etc. • Understand the usage of taxonomical aids in the identification and classification of organism
<p>L-2 BIOLOGICAL CLASSIFICATION</p> <p>-Five kingdom Classification</p> <p>-Salient features and classification of Monera, Protista</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. • Opendediscussion 	<ul style="list-style-type: none"> • Describe the two-kingdom system of classification and its drawbacks. • Describe the five kingdom system of classification and mention its advantages. • Enumerate the characteristics of kingdom Monera, Protista with suitable examples.

<p>and Fungi into major groups</p> <p>-Lichens</p> <p>-Viruses and Viroids</p>	<ul style="list-style-type: none"> • Pictionary. • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Define the terms isogamy, anisogamy, oogamy, plasmogamy, karyogamy, dikaryon, mycorrhiza. • Describe the Kingdom Fungi characteristics and the basis for classifying into four classes with suitable examples. • Define and understand the terms gametophyte, sporophyte and alternation of generation with reference to plants. • Mention the distinguishing features of kingdom Animalia • Name the groups of organisms that are not included in the five- kingdom classification and describe them.
<p>L-3PLANT KINGDOM (upto Pg no 39 for current session)</p> <p>-salient features and classification of plants into major groups- algae, Bryophyta ,Pteridophyta, Gymnospermae and Angiospermae</p> <p>-Angiosperms- classification upto class</p> <p>-Characteristics features and examples</p>	<ul style="list-style-type: none"> • Lecture cum discussion • Black board, quiz bowl, peer to peer learning, self learning • Open discussion • Sharing their experiences • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Describe artificial, natural and phylogenetic system of classification and explain the differences among them • Define the terms chemotaxonomy, numerical taxonomy and cytotoxicology. • State the classification of plant kingdom into division algae ,bryophytes ,pteridophytes, gymnosperms and angiosperms. • Describe pigments, reserve food materials, thallus organisation, asexual and sexual reproduction among the different classes of algae. • Describe the thallus organisation and reproduction in liverworts and mosses and distinguish between them. • Enumerate the characteristics of pteridophytes and their classification into different classes with examples of each of the. • Explain heterospory and seed habit • Explain the vegetative and reproductive systems of gymnosperms and angiosperms and distinguish between them. • Explain double fertilisation and alternation of generations in angiosperms. • Explain the three different types of cycles exhibited by

		different plant groups with suitable examples
<p>L-4 : ANIMAL KINGDOM</p> <p>-Salient features and classification of animals</p> <p>-Non chordata upto phyla level and chordates upto class level</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. • Open discussion ,Pictionary • Through museum specimen ,pictures. • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Visiting zoo or reserve to have first hand learning • Story telling • Role model • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Define/explain the following terms related to the basis of classification: radial symmetry, bilateral symmetry, asymmetry, diploblastic, triploblastic, acoelomate, pseudocoelomate, eucoelomate, metamerism, homiotherms, poikilotherms, etc. • Describe the salient features of the following phyla and give examples: Porifera, Cnidaria, Ctenophora, Platyhelminthes, Aschelminthes, Annelida, Arthropoda, Mollusca, Echinodermata, Hemichordata and Chordata.
<p>UNIT-2 Sturctural organisation in animals and plants</p> <p>L-5 MORPHOLOGY OF FLOWERING PLANTS (Pg71-78 for current session)</p> <p>-Morphology and modifications</p> <p>- Morphology of different parts of flowering plants</p> <p>-Root, stem ,leaf, inflorescence, flower, fruit and seed</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. • Open discussion, through pictures • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • State the characteristics of the stem, root and leaf. • Describe the modifications of the root, stem and leaf and identify the relationship between the modifications and their functions. • Differentiate between <ul style="list-style-type: none"> a) Tap root, fibrous root and adventitious root. b) Simple and compound leaves. c) Alternate, opposite and whorled types of phyllotaxy. d) Monocot and dicot plants • Define inflorescence and distinguish between racemose and cymose inflorescence. • Describe flower as a modified shoot. • Compare the various types of aestivation giving suitable examples and labelled diagrams. • Describe the various types of placentations with examples

		<p>and suitable diagrams.</p> <ul style="list-style-type: none"> • Describe the nature of the thalamus and the terms hypogynous, perigynous and epigynous. • Define/explain the terms floral formula, floral diagram and write or translate floral formula. • Draw or translate the floral diagram of a flower. • Compare the distinguishing features of families, Fabaceae, Solanaceae and Liliaceae and give common examples and their economic importance.
<p>L-6: ANATOMY OF FLOWERING PLANTS (deleted for current session)</p> <p>-Anatomy and functions of different tissues and tissues systems</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board, Open discussion, Pictionary • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Define tissues and classify tissues into meristematic and permanent tissue. • Define meristems, and classify meristems based on a) their position in the plant body and b) the time of origin of meristem. • Describe the different simple permanent tissues and complex permanent tissues, their location in the plant body and functions.
<p>L-7: STRUCTURAL ORGANISATION IN ANIMALS (upto Pg 105 for current session)</p> <p>-Animal tissues</p> <p>-Morphology, anatomy and functions of different systems(digestive, circulatory, respiratory, nervous and reproductive) of an insect(cockroach) in brief</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. • Open discussion ,Pictionary • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method 	<ul style="list-style-type: none"> • Define the term tissue and list the four main types of animal tissues. • Explain the basic structure, the location and functions of various simple and stratified epithelial tissues. • Draw labelled diagrams of the different types of epithelial tissues and distinguish among them. • Describe the three types of cell junctions and their functions. • List the cell types and fibres, the structure and location of various types of loose, dense and specialised forms of connective tissue and their function in the human body.

	<ul style="list-style-type: none"> • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Draw labelled diagrams of the different types of connective tissues. • Differentiate among striated, non striated and cardiac muscles and draw labelled diagrams of them. • Describe briefly the neural tissues. • Describe the external morphology- the body divisions and the appendages the posses of a cockroach and distinguish between a male and female cockroach. • Describe the digestive, circulatory, respiratory, excretory, neural and reproductive systems and draw labelled diagrams of them
<p>UNIT-3 Cell: Structure and function</p> <p>L-8: : CELL: THE UNIT OF LIFE</p> <p>-Cell theory and cell as the basic unit of life</p> <p>-Structure of prokaryotic and eukaryotic cells</p> <p>-Plant cell and Animal cell</p> <p>-Cell envelop</p> <p>-cell membrane</p> <p>-cell wall</p> <p>- cell organelles- structure and functions</p> <p>-Endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles,mitochondria,ribosomes, plastids, microbodies, cytoskeleton, cilia, flagella ,centrioles (ulta structure and function) ,nucleus</p>	<ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation • Making clay model of organells • Diagram • songs 	<ul style="list-style-type: none"> • Define/describe cell, unicellular and multicellular organisms. • Explain modern cell theory and name the scientists and their contribution to the formation of modern cell theory. • Describe the general structure and composition of cell. • Describe the prokaryotic cells. • Explain the structure of plasma membrane, the fluid-mosaic model of it and the transport across the plasma membrane. • Describe the structure and functions of cell wall. • Describe the components, their structures and functions of endomembrane system. • Explain the structure and functions of chloroplasts and mitochondria and the reason why they are called semiautonomous organelles. • Describe the structure and function of cilia and flagella and centriole. • Describe the structure of and interphase nucleus, structure of chromosomes and their types. • To know interaction of cell with organs and organisms,environment and ecisystem
L-9: BIOMOLECULES	<ul style="list-style-type: none"> • Understanding, discussion cum lecture 	<ul style="list-style-type: none"> • Describe how to analyse the chemical composition

<p>-Chemical constituents of living cells</p> <p>Biomolecules-Structure and functions of proteins, carbohydrates, lipids, nucleic acids</p> <p>-Enzymes- types, properties, enzyme action</p>	<p>method</p> <ul style="list-style-type: none"> • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Day to day experience</p> <ul style="list-style-type: none"> • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching <p>Open discussion ,Pictionary</p> <ul style="list-style-type: none"> • Day to day observation • Testing and evaluation 	<p>of plants and animals tissues</p> <ul style="list-style-type: none"> • Describe structure and functions of monosaccharides ,diasaccharides, amino acids ,lipis, nitrogen bases, nucleotides and nucleosides. • Distinguish between primary and secondary metabolites • Describe the structure and functions of biomolecules- proteins, polysaccharides and nucleic acid • Explain the concepts of metabolism and living state • Define/explain the terms: enzyme, apoenzyme, coenzyme, prosthetic group, inhibition of enzyme action • Describe various factors that affects enzyme activity • Explain the classification and nomenclature of enzymes
<p>L-10: CELL CYCLE AND CELL DIVISION</p> <p>-Cell cycle</p> <p>-Mitosis</p> <p>-Meiosis</p> <p>- Significance of mitosis and meiosis</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. • Open discussion,Pictionary • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Define cell cycle and cell division • Draw a diagram to show the events that occur during cell cycle • Explain the events that occur during • interphase • Describe events and significance of mitosis and meiosis. • Distinguished between mitosis and meiosis
<p>UNIT-4 –Plant Physiology</p> <p>L-11: TRANSPORT IN PLANTS (deleted for current session)</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture 	<p>OCTOBER- FEBRUARY</p> <ul style="list-style-type: none"> • Define/explain the terms: translocation, diffusion,

<p>-Movement of water, ,gases and nutrients</p> <p>-Cell to cell transport</p> <p>-diffusion</p> <p>-osmosis</p> <p>-plasmolysis</p> <p>-long distance transport of water</p> <p>-absorption,apoplast,symplast</p> <p>-Transpiration pull</p> <p>-Root pressure and guttation</p> <p>-Transpiration</p> <p>-opening and closing of stomata</p> <p>-Uptake and translocation of mineral nutrients</p> <p>-Transport of food, phloem transport</p> <p>-Mass flow hypothesis</p>	<p>method</p> <ul style="list-style-type: none"> • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<p>facilitated diffusion, active transport and compare each one of them</p> <ul style="list-style-type: none"> • Explain water potential and its components • Define the term osmosis, plasmolysis, • deplasmolysis, turgor pressure, flaccid cell, hypotonic, isotonic. • Explain active and passive absorption of water, and its transport-symplastic and apolplastic pathways. • Explain root pressure and transpirational pull theory of translocation of water. • Explain uptake and transport of mineral ions in plants • Explain phloem transport and pressure flow hypothesis. • Importance of plants in maintaining the hydrological cycle
<p>L-12: MINERAL NUTRITION (deleted for current session)</p> <p>-Essential minerals</p> <p>-Macro and micronutrients and their role</p> <p>-Deficiency symptoms</p> <p>-Mineral toxicity</p> <p>-Elementary idea of hydroponics as a method to study mineral nutrition</p> <p>-Nitrogen metabolism</p> <p>-Nitrogen cycle</p> <p>-Biological nitrogen fixation</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Explain hydroponics • Criteria of essentiality of mineral nutrients • Define and describe the role of micro and macronutrients in the life of plants. • Describe the deficiency symptoms of macro and micronutrients. • Explain toxicity of micronutrients. • Describe nitrogen cycle, nitrogen fixation in root nodules,explain formation of root nodules. • Importance of plants in providing nutrients to other living organisms
<p>L-13: PHOTOSYNTHESIS IN HIGHER PLANTS</p> <p>-Photosynthesis as means of autotrophic nutrition</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart 	<ul style="list-style-type: none"> • Describe early experiments that led to the understanding of photosynthesis and explain the structure of chloroplast

<p>-Site of photosynthesis</p> <p>-Pigments involved in photosynthesis</p> <p>Photochemical and biosynthetic phases of photosynthesis</p> <p>-cyclic and non cyclic photophosphorylation</p> <p>-chemiosmotic hypothesis</p> <p>-Photorespiration</p> <p>-C3 andC4 pathways</p> <p>-Factors affecting photosynthesis</p>	<p>board. Open discussion,Pictionary</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Define and explain the term action and absorption spectrum of photosynthesis • Explain the mechanism of photochemical or light reactions, electron transport and formation of ATP through chemiosmosis. • Explain C3 and C4 pathways • Explain photorespiration. • Explain the law of limiting factors and effects of various environmental and internal factors on photosynthesis. • Importance of plants for survival of other living organisms
<p>L-14: RESPIRATION IN PLANTS</p> <p>-Exchange of gases</p> <p>-Cellular respiration</p> <p>-Glycolysis</p> <p>-Fermentation</p> <p>-TCA cycle and electron transport system</p> <p>-Energy relation- number of ATP molecules generated</p> <p>-Amphibolic pathways</p> <p>-Respiratory quotient</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion ,</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Define cellular respiration and respiratory substrate • Reason why plants have no specialised respiratory system as in animals • Describe the process of glycolysis • Describe alcohol and lactic acid fermentation • Describe kerb cycle, explain and draw schematic representation of ETS. • Describe respiration is an amphibolic pathway • Explain respiratory balanced sheet and calculation of net gain of ATP • Define respiratory quotient and show the respiratory quotient for various metabolic substrate.
<p>L-15: PLANT GROWTH AND DEVELOPMENT (Pg no 247-251 for current session)</p> <p>-Seed germination</p> <p>-Phases of plant growth and plant growth rate</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion,Pictionary</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion 	<ul style="list-style-type: none"> • Define seed germination,explain plant growth is unique i.e.indeterminate and open. • Differentiate between primary and secondary growth. • Explain geometric and arithmetic growth. • Define the term

<p>-Differentiation, Dedifferentiation and Redifferentiation</p> <p>-Sequence of developmental processes in a plant cell</p> <p>-Growth regulators-auxins, gibberellins, cytokinins, ethylene, ABA</p> <p>-Vernalisation</p> <p>-Photoperiodism</p>	<ul style="list-style-type: none"> • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<p>differentiation, dedifferentiation and redifferentiation and give example.</p> <ul style="list-style-type: none"> • Explain the sequence the developmental process in plants. • List the plant growth regulators and their physiological effects of each of them plant growth and development. • Define photoperiodism and describe LDP, SDP, and DNP. • Define vernalisation, seed dormancy and describe ways of breaking the seed dormancy.
<p>UNIT-5 –Human Physiology</p> <p>L-16: DIGESTION AND ABSORPTION (deleted for current session)</p> <p>-Alimentary canal and digestive glands</p> <p>-Role of digestive enzymes and gastrointestinal hormones</p> <p>-Peristalsis</p> <p>-Digestion, absorption and Assimilation of carbohydrates, proteins and fats</p> <p>-Calorific values of proteins, carbohydrates and fats</p> <p>-Egestion</p> <p>-Nutritional and digestive disorders-PEM</p> <p>-Indigestion, constipation, vomiting, jaundice, diarrhoea</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion, Pictionary</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • List the organs of alimentary canal and their parts. • List the glands, their secretions associated with digestion • Describe briefly the histology of gut. • Describe the process of digestion occurring in different parts of alimentary canal. • Describe absorption of food. • Describe the neural and hormonal regulation of activities of gastrointestinal tract. • Explain cause and symptoms of disorders like jaundice, vomiting, diarrhoea, constipation and indigestion • Explain two forms of PEM and distinguish between them. • Importance of balanced diet
<p>L-17: BREATHING AND EXCHANGE OF GASES</p> <p>-Respiratory organs in animals</p> <p>-Respiratory system in humans</p> <p>-Mechanism of breathing and its regulation in humans</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion, Pictionary</p> <ul style="list-style-type: none"> • Day to day experience 	<ul style="list-style-type: none"> • List the organs of breathing/respiration in different group of animals • List the organs of respiration in humans. • Explain the steps and mechanism of respiration. • List and explain different respiratory volume and respiratory capacities.

<p>-Exchange of gases,transport of gases and regulation of respiration -Respiratory volumes</p> <p>-Disorders related to respiration-asthma, emphysema, occupational respiratory disorders.</p>	<ul style="list-style-type: none"> • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation • Model making <p>Drawing painting</p>	<ul style="list-style-type: none"> • Explain transport and exchange of various respiratory gases. • Explain briefly regulation of respiration. • Describe disorders of respiratory system like asthma, emphysema, occupational d disorders. • Spreading the awareness of harmful effects of smoking
<p>L-18: BODY FLUIDS AND CIRCULATION</p> <p>-Composition of blood, blood groups</p> <p>-Coagulation of blood</p> <p>-Composition of lymph and its function</p> <p>-Human circulatory system</p> <p>-Structure of human heart and blood vessels</p> <p>-Cardiac cycle,cardiac output,ECG, duble circulation</p> <p>-Regulation of cardiac activity</p> <p>-Disorders of circulatory system</p> <p>-Hypertension, Coronary artery disease, Angina pectoris, Heart failure</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion,Pictionary</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation • Model making • drawing 	<ul style="list-style-type: none"> • Describe briefly the composition of blood and its functions • Explain ABO blood grouping and Rh factor • Describe the events in clotting of blood. • Describe the circulatory pathways and explain the terms: open and closed circulatory system, incomplete and complete double circulation. • Describe the structure of human heart and events of cardiac cycle. • Explain ECG,regulation of cardiac activity. • Describe disorders associated to circulatory system. • Reduction of saturated fats in diet and exercise to maintain good heart
<p>L-19: EXCRETORY PRODUCTS AND THEIR ELIMINATION</p> <p>-Modes of excretion-ammonotelism, ureotelism, uricotelism</p> <p>-Human excretory system-structure and function</p> <p>-Urine formation, osmoregulation</p> <p>-Regulation of kidney function- renin, -angiotensin,atrial natriuretic factor</p> <p>-ADH and diabetes insipidus</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion,Pictionary</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Learningby making model or hands on 	<ul style="list-style-type: none"> • Define/explain the terms: ammonotelism, ureotelism and uricotelism with examples. • List excretory organs of different group of animals. • Describe structure and function of kidney • Explain structure of nephron and formation of urine. • Explain the role of counter current mechanism in concentrating the urine. • Explain regulation of kidney function.

<p>-Role of organs in excretion</p> <p>-Disorders-Uremia, Renal failure, Renal calculi, Nephritis, Dialysis and artificial kidney, kidney transplant</p>	<p>activity</p> <ul style="list-style-type: none"> • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Describe the role of lung, liver and skin in excretion. • List and describe disorders of the urinary system. • Importance of drinking enough water for good functioning of kidneys
<p>L-20: LOCOMOTION AND MOVEMENTS (upto Pg 308 for current session)</p> <p>-Types of movement- ciliary, flagellar, muscular</p> <p>-Skeletal muscle</p> <p>-Contractile proteins and muscle contraction</p> <p>-Skeletal system and its functions</p> <p>-Joints</p> <p>-Disorders of muscular and skeletal system- Myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion, placard singing</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Word parts • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • List the different types of movements • Describe different types of muscles based on their location in the body. • Describe the structure of muscle and mechanism of muscle contraction. • List the division of human skeletal system • Define terms joints and list types of joints and give suitable example. • List the disorders, their cause and symptoms of the disorders related to muscle and skeletal system. • Importance of calcium in diet for good bones
<p>L-21: NEURAL CONTROL AND COORDINATION (upto pg 321 for current session)</p> <p>-Neurons and nerves</p> <p>-Nervous system in humans- central nervous system, Peripheral nervous system and visceral nervous system</p> <p>-Generation and conduction of nerve impulse</p> <p>-Reflex action</p> <p>-Sensory perception</p> <p>-Sense organs</p> <p>-Elementary structure and function of eye and ear</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion, Pictionary</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • By quilling technique • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • List the function of neural system. • Describe and differentiate between the structure and function of central nervous system and peripheral nervous system. • Explain the mechanism of conduction of nerve impulse across the synapse. • Explain reflex action and reflex arc with suitable example. • Describe the structure of human eye, ear and mechanism of their working. • Describe how nose and tongue function as organ of olfaction and taste.
<p>L-22: CHEMICAL COORDINATION AND</p>	<ul style="list-style-type: none"> • Understanding, discussion cum lecture method 	<ul style="list-style-type: none"> • List the names of endocrine and their corresponding function.

<p>INTEGRATION</p> <p>-Endocrine glands and hormones</p> <p>-Human endocrine system- hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads.</p> <p>-Mechanism of hormone action</p> <p>-Role of hormones as messengers and regulators</p> <p>-Hypo and hyperactivity and related disorders</p> <p>-Dwarfism, Acromegaly, Cretinism, Goitre, Exophthalmic goitre, Diabetes, Addison disease</p>	<ul style="list-style-type: none"> • Quiz, playcard, peer to peer learning • Chalk board, smart board. <p>Open discussion, Pictionary</p> <ul style="list-style-type: none"> • Day to day experience • Group discussion • Lab activity • Observation • Problem solving method • Hands on learning • Science text card • Flow chart • song <ul style="list-style-type: none"> • Cross over learning • Peer to peer teaching • Testing and evaluation 	<ul style="list-style-type: none"> • Describe location, structure and function of: hypothalamus, pituitary, pineal, thyroid, parathyroid, thymus, pancreas, kidney and gonads. • List and describe functions of hormones from heart, kidney and gastrointestinal gland. • Explain the chemical nature and mechanism of action of hormones. • Awareness of lifestyle diseases and their prevention
---	---	---