

NO. OF PERIOD	TOPIC	SUB-TOPIC	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT / ACTIVITIES	LEARNING OUTCOMES
35	DIVERSITY IN THE LIVING WORLD	The living world	Concept of living ,introduction of classification, taxa, nomenclature and other taxonomic categories, taxonomic aids	To prepare a herbarium	Students will understand the basis of classification and its applications
		Biological classification	Characteristics of five kingdom classification, and two kingdom classification, Detailed study of various kingdoms	To prepare a chart showing diversity in organisms	Basis of classification and its various attributes
		Plant kingdom	Study of various thallophyta, byrophyta, pteridophyta, gymnosperms and angiosperms and their characteristics	To prepare a chart work on contrasting features of thallophyta, bryophyta and pteridophyta.	Structure of various lower plants, their evolution with respect to modern day plants
		Animal kingdom	Study of various organisms on various basis, categorisation of chordates and non chordates their structure and appearance and occurrence	Lab activities to demonstrate the various contrasting features of various organisms on the basis of the specimens provided	Contrasting features of various phylum and their comparative study.

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30	CELL: STRUCTURE AND FUNCTION	Cell , the unit of living	Introduction about cell, its discovery, and its various cell organelle, the roles of various cell organelle, and cell theory	Study of fluid mosaic model of plasma membrane	Learning of various cell organelles and their role
		Biomolecules	Study of macro and micromolecules, structure of carbohydrates, proteins, fats and nucleic acids, concept of enzyme action.	Demonstration of various structure of proteins.	Learning of all the important components of cell
		Cell cycle and cell division	Various phases of cell cycle, phases of cell division, mitosis and meiosis	to show the various phases of mitosis and meiosis	Importance of various phases of cell division.
25	STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS	Morphology of flowering plants	To study the various morphological aspects of plants. Study of root, shoot, leaves, their region, modifications and uses. Parts of flower, floral formula, structure of seed.	To study the modifications of , stem and root and their applications	Learning of various parts of a plant and their importance and modifications
		Anatomy of flowering plants.	Structure of various types of tissues, concept of simple and permanent tissues, various tissue system, Anatomy of dicot and monocot root, stem and leaf, Secondary growth in plants.	To study the structure of monocot and dicot root and stem	Basis understanding of all the tissues and their role.
		Structural organisation in animals	Various types of animal tissues and their structure, anatomy of earthworm, cockroach and frog.	To make a project on various types of animal tissues	Various types of tissues and their role

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50	PLANT PHYSIOLOGY	Transport in plants	Various means of transport, types of transport, plant water relations, osmosis, plasmolysis, imbibition, long distance transport of water, Transpiration, movement of food and theories related to it.	To demonstrate a theory based on movement of food in plants	Study of various types of movement in plants.
		Mineral Nutrition	Methods of various plant growth, Role of macro and micronutrients, Deficiency and toxicity in plants, mechanism of absorption in plants, nitrogen cycle,	To make a chart on various deficiency diseases in plants	Learning of essential elements and the role, concept of nitrogen fixation in plants
		Photosynthesis in higher plants	Photosynthesis and its role, concept of light and dark reactions, glycolysis, kreb's cycle, factors affecting photosynthesis	To make a chart showing differences between light and dark reactions	Concept of photosynthesis and its applications
		Respiration in plants	Glycolysis, fermentation, difference between aerobic and anaerobic respiration, electron transport chain.	To make a chart showing events occurring in glycolysis .	Learning of respiration and its uses in various attributes.
		Plant growth and development	Growth and phases of growth, various growth model, conditions for growth, Plant hormones and their uses.	To demonstrate various roles of various plant hormones	Role of plant hormones and its applications

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50	HUMAN PHYSIOLOGY	Digestion and absorption	Human digestive system and its study, function of various glands, mechanism of digestion of food and its utilisation, action of enzyme of digestion	To prepare a chart showing the mode of digestion	Mechanism of digestion will be understood
		Breathing and exchange of gases	Human respiratory system, mechanism of breathing, respiratory volumes and capacities, exchange of gases, transport of oxygen and carbon dioxide, disorders of respiratory system	To calculate the total lung capacity in an organism	Mechanism of breathing will be understood
		Body fluids and circulation	Components of circulatory system, components of blood, concept of blood groups, coagulation of blood, circulation mechanism, cardiac cycle and ECG	To calculate the pulse rate and breathing rate	Various mechanism of circulation will be studied.
		Excretory product and their elimination	Human excretory system, structure of kidney, counter current mechanism, urine formation, disorders of excretory system.	To make a chart showing urine formation	Concept of functioning of kidney will be studied



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		Locomotion and movement	Types of movement, types of muscles, and muscle contraction and theories related to it, human skeleton system and types of bones,	To demonstrate various types of bones.	Study of human skeletal system and its disorders associated to it.
		Neural control and co ordination	Human neural system, structure of neuron, generation of nerve impulse and its transmission, central nervous system, structure of human brain and spinal cord	To study the various parts of human brain via different models	Learning of various parts of brain and its co ordination with various parts of the body.
		Chemical co ordination and its integration	Human endocrine system, various endocrine glands and their hormones associated to it, and their mode of action	To show the various modes of action of hormones graphically	Action of various hormones and their impact on body