BIFURCATION OF SYLLABUS (2023-2024)
SUBJECT : SCIENCE
CLASS : VII

TEXT BOOK - NCERT

TERM-1	ASSESSMENT	MONTH	CHAPTER & Sub Topics	LEARNING OBJECTIVES	ACTIVITIES	SYLLABUS COVERAGE
APRIL TO SEPTEMBER		APRIL	**Ch-1:Nutrition in Plants** *Mode of nutrition in plants-Autotrophic and Heterotrophic nutrition *Photosynthesis *Types of Heterotrophic nutrition Insectivorous(Parasitic) plants, Saprotrophs, Symbiosis relationship Process of nutrients replenished in the	*Recall details/definitions specific to autotrophic mode of nutrition in plants / photosynthesis *Understands that the plant stores carbohydrates in the form of starch. *Distinguish between autotrophs and heterotrophs. parasites and saprotrophs *Describe the process of photosynthesis with the help of word/chemical equation. *Evaluate plants to study the pigments present	*Bread mould growth *Visit a green house and observe how they grow plants *Growing a sweet potato in water	

			soil **Ch-2:Nutrition in Animals** *Digestion in humans *Various parts of alimentary canal-Buccal Cavity, Oesophagus, Stomach, Small Intestine, Large intestine, Rectum, Anus Digestion in ruminating animals Feeding and digestion in amoeba	*Draw schematic diagram of a section of leaf. *Define the terms-digestion and rumination, recalls different modes of acquiring food. *Explain the different steps of nutrition, digestive system of the human being, mode of nutrition in cow and amoeba * Compares the digestive system of human and that of ruminants *Illustrate and explains human digestive system with the help of a well labelled diagram *Classifies animals based on their modes of feeding.	*Effect of saliva on starch *Test for starch in food items *Preparation of Oral Rehydration Solution *Count your teeth and then find out which type of teeth is used for cutting, grinding etc while eating food *Find out different regions of taste in our tongue	
		MAY	**Ch-3: Fibre to Fabric(Rationalize**	*Gains knowledge about which animals	*Differentiate between natural	

			d) *Animal fibres- Wool and Silk Animals that yield wool, processing fibres into wool *Occupational Hazard *Sericulture,Life history of silk moth, Processing of silk	yields fibre and who rears those animal *Understands about fabrics which comes from animal sources,parts of animals that yield yarn *Compare coarse beard hair & soft under hair of animals based on their utility *Outline the steps involved in obtaining silk from cocoon *Describe and illustrate diagrammatically the life cycle of silk moth *Evaluate the contribution of silk in Indian Economy	fibres(silk and wool) from synthetic fibres by heating the samples *Outline the places on our map where Indian breeds of sheep are seen *Debate on -a) Shearing a sheep to obtain wool and b) Extracting silk from silkworm- is good or bad *Make a clay model showing metamorphosis of silkworm
			Ch-4: Heat *Measuring temperature using thermometer *Types of thermometer- Clinical, Laboratory *Precautions using thermometers *Transfer of	*Defines temperature, thermometer, conduction,radiation *Distinguish the Clinical thermometer from Laboratory thermometer (range, least count, units of measurement) *List precautions while using a clinal and laboratory thermometer *Devises an activity to	*To observe the rate of heat transferred in different materials *Measure body temperature using clinical and digital thermometers *Observe the range of Laboratory and clinical thermometer *Take one black

			heat(Different modes) *Conduction- Insulators and conductors *Convection- Land breeze and Sea breeze, Radiation	elaborate the process of thermal conduction, convection & radiation *Recall the role of food as source of energy *Explain why a substance remains in the same temperature in a Thermos flask or vacuum bottle	painted can and one white painted can and measure temperature of water in both cans using Lab thermometer *Making convection spiral *Flow of heat through a metal strip	
	PT-1 in July **Max M: 40** (**Weightage 5m**)	JULY	**Ch-5 :Acids,Bases and Salts** *Acids and Bases *Natural Indicators Around us Litmus,turmeric and China rose as natural indicator *Neutralisation *Neutralisation in	*Recognises substances as sour and bitter *Examine the common substance used at home based on taste and touch and classify them as acidic or basic *Summarizes observations with respect to behavior of indicators in acidic and basic solutions	*Test the samples of acidic ,basic and neutral substances using blue and red Litmus paper *Make a greeting card using turmeric paper *Prepare china rose indicator and red cabbage indicator to test different	30% of Term 1 (Apr to Jun syllabus)

			everyday life	*Analysis neutralization reactions and its characteristics *Evaluate the effectiveness of certain neutralization reactions employed in everyday life	solutions *Process of neutralisation using phenolphthalein indicator *Observing the use of milk of magnesia, baking soda, calamine solution ,quick lime etc in our daily life	
			Ch-6: Physical and Chemical Changes *Physical changes and Chemical changes *Activities of Chemical changes *Rusting of Iron Crystallisation	*Defines physical, chemical changes, reversible and irreversible change *Differentiates physical changes from other changes *Design an activity to prevent rusting by painting,oiling *Illustrate the usage of crystallization in purification of various salts *Applies related concepts in his daily life situations.	*Activities to show physical changes *Burning of magnesium ribbon Reaction of CuSO4 with iron *Reaction of Vinegar with baking soda and the gas released will turn lime water milky *Process of crystallisation	
		AUGUST	**Ch-7: Weather,**			

			Climate and Adaptations of Animals to Climate(Rationalised) *Weather Climate and Adaptation *Elements of Weather *Adaptaion in Polar region and tropical rainforests *Analysis of weather *Adaptation of polar bear, *Migratory bird **Ch-8: Wind, Storms and Cyclones(Rationalized)** *Air Exerts Pressure *Air Expands on Heating *Thunderstorms	*Recalls the different types of habitats, defines weather, climate and adaptation *Distinguish between weather and climate *Explains the different adaptations of animal *Analyses the weather of a place determined by the presence of sun *Evaluate the role of various organisms in the various habitats	*Observe weather data for a week by including the elements of weather *Compare the climatic information of Srinagar and Thiruvanantha puram; Assam and Rajastan *Plot the Polar regions and Tropical rainforest regions ,in a world map	

			and Cyclones *How a thunderstorm becomes a cyclone *Effective Safety Measures against Cyclones *Thunderstorms			
			Ch-9: Soil(Rationalized) *Soil Teeming with life *Soil profile *Soil type *Properties of Soil *Absorption of water by soil soil and crop	*Recalls details pertaining to air & effects of air pressure. *Demonstrate an experiment in order to conclude that air expands on heating. *Differentiate cyclone, thunderstrom and tornados *Analyses the possible reasons for cyclones in some regions *Suggests precautions against Cyclones, Thunderstorms & Tornadoes *Recalls the different components of soil *Classify soil into	*Blowing paperball into the bottle *Blowing air between the balloons *Observing the shape of balloon in hot and cold water *To prove air expands on heating and hot air rises up *Make your own anaemometer *Examine the soil	

				different categories based on its properties *Describe all the layers in the soil profile *Examine different soil samples in order to infer moisture content and percolation rate *Explains the effects of soil pollution on life on earth. *Predict the consequences of absence of soil on life on earth and suggests precautions	profile *Collecting different soil types to check the percolation	
	PT2 in Sep **Max M: 80** **(Weightage 80 m)**	SEPTEMBER	Revision			30 + 20 = 50% Of Annual Syllabus
TERM-2		OCTOBER	**Ch 10: Respiration in Organisms** *Why do we respire? *The process of breathing	*Understand respiration as breakdown of food for energy *Differentiate aerobic and anaerobic respiration *Illustrate the respiratory system with	*Compare the breathing rate of self, parents, children and old people *Anulom Vilom Yoga *Make model to	

			*Breathing in other animals *Do plants also respire? **Ch 11: Transportation in Animals and Plants** *Circulation *Blood, Blood vessels and heart *Heartbeat *Excretory system in humans *Transport of substances in plants *Transport of water and minerals	labeling *Compare respiration and breathing *Analysis the position of diaphragm during inhalation and exhalation *Discuss the importance of transportation in organisms *List the components of Circulatory system *Diagrammatic representation of heart *Analysis the role of heart in blood circulation *Discuss the role of excretory system in transportation *Evaluate the role of artificial kidney in blood filtration	show mechanism of breathing *To check the effect of exhaled air on lime water *Collect and share information about *Artificial respiration * To check the pulse rate of children and adults and compare *Model of a stethoscope *Find out the blood groups and their importance *Potato activity to show transportation of water through cells *Collect and share information about ECG and Dialysis *Activity for transpiration	
OCTOBER TO		NOVEMBER	**Ch 12:**			

MARCH			**Reproduction In Plants** *Modes of reproduction *Asexual reproduction-Vegetative propagation, budding, fragmentation,Spore formation *Vegetative propagation from leaf, stem and root *Pollination *Fertilization *Fruit and seed formation *Seed dispersal **Ch 13: Motion and time** *Slow or fast *Speed *Measurement of time *Units of time and speed *Measuring speed	*Define reproduction *Distinguish asexual and sexual reproduction *List the modes of asexual reproduction *Analysis the role of vegetative parts of a plant in reproduction *Classify asexual reproduction into different types *List examples for the types of asexual reproduction *Examine the role of flower in reproduction *Compare self and cross pollination *Evaluate the concept of seed dispersal in plant reproduction *Recall the types of motion *Define speed and demonstrate time period on simple pendulum	*Observe vegetative propagation in potato, carrot, bryophyllum etc *Examine the parts of flower and understand the importance of them *Specimen of different types of seeds to study seed dispersal *Calculate the time period of a simple pendulum *Calculating speed of animals in Table 13.4 *Plot a distance-	

			*Distance-time graph **Ch 14: Electric current and its effects** *Symbols of electric components *Open and closed circuit, circuit diagram *Heating, lighting, Magnetic effects of electric current *Electromagnets	*Compare uniform and non uniform motion understand the relation between speed, distance and time *Solve numericals on speed *Analyse distance and time graph *Learn to plot a bar graph and line graph *List the uses of electricity in daily life *Draw the symbols of electricity *Demonstrate the flow of current through a circuit *Schematic representation of circuit using symbols of battery, wire, switch and bulb *Differentiate between open and close circuit *Analysis the two effects of current: heat and magnetic	time graph of an object moving with Uniform and Non uniform speed Model of a sand clock Make an electric circuit	

	PT-3 in Dec **Max M: 40** (**Weightage 5m**)	DECEMBER	**Ch 15: Light** *Properties of light *Plain Mirror and Spherical mirror, images formed by these mirrors *Uses of plane and spherical mirror *Concave and convex lens, images formed by these lens *Uses of concave and convex lens *Dispersion of white light using prism	*Recall light as a form of energy and its uses in daily life *Examine that light travels in a straight line *Demonstrate image formation by using candle and mirror *Introduce the terms image, object and light source *Explain the concept of reflection by citing relevant examples *Introduce the concept of lateral inversion by giving real life examples *Explain the two types of mirrors: concave and convex *Demonstrate the image formation in concave and convex mirrors and identify the	*Light travels in a straight line *Locating image in a plane mirror *Image formation in a spoon *Paper burning activity by capturing image of sun *Images formed by a concave and convex mirror *Newton's disc *Refraction through prism	PT3-30% of Term 2 (Oct to Nov syllabus)

				properties of the image formed *Illustrate with an activity that white light is made of seven colors using a prism *Construction of a colour wheel		
			Ch 16: Water: A precious resource(Rationalized) *Availability of water and its distribution *Forms of water, water cycle, source of water *Depletion of water table *Water Management *Effects of water scarcity on plants	*Recall the significance of water and its role in life sustenance *Explain the quantity of potable water left for usage *Evaluate the forms of water and it's usage *State the importance of ground water to mankind *List the reason for depletion of water table and ways to conserve it *Formulate a method to conserve water which is a need of the hour	*Collect informatio about water requirement for students of each class *Study the effect of water scarcity on plants *Implement water conservation at school and house	
		JANUARY	**Ch 17: Forests : Our lifeline**	*Recollect the uses of forests *Analysis the structure	*Collect pictures of different types of trees	

			*****Diversity in Forest flora and fauna *Types of canopy in forest plants *Plants and their products *Food chain - interrelation between various organisms *Effects of deforestation **Ch 18: Waste water story** *****Water our life line- its uses *Waste water *Waste water treatment plant *Sanitation and Disease *Better housing practices, sewage disposal and sanitation at public places	of a forest *List the flora and fauna present in forests *Value forest as a treasure of natural resources *Appreciate forest as the main contributor of rainwater *Develop ways to improve and save forest from depletion *Recall the significance of water to all living organisms *List the different ways for waste generation *Examine the effects of waste water on health of living organisms *Explain the role of treatment plants in sewage treatment before disposal *Discuss the sanitation methods to reduce pollution of water *Create new ways of waste disposal to diminish waste generation	*Write few uses of the products obtained from forests *Plant a sapling on any important day *Multi- layer filtration of muddy water *Collect pictures of diseases caused due to poor sanitation *To segregrate wet and dry waste separately	

		FEBRUARY	REVISION		REVISION	
	ANNUAL EXAMINATION in March **Max M: 80 (Weightage 80 m)**	MARCH	ANNUAL EXAM		ANNUAL EXAM	20% of Term 1 + The entire syllabus of Term 2

***Note- Rationalized chapters be taught through activities. Not to be tested.**