

**BIFURCATION OF SYLLABUS (2023-2024)****SUBJECT : SCIENCE****CLASS : VII****TEXT BOOK - NCERT**

<b>TERM-1</b>	<b>ASSESSMENT</b>	<b>MONTH</b>	<b>CHAPTER &amp; Sub Topics</b>	<b>LEARNING OBJECTIVES</b>	<b>ACTIVITIES</b>	<b>SYLLABUS COVERAGE</b>
<b>APRIL TO SEPTEMBER</b>		<b>APRIL</b>	<b>Ch-1:Nutrition in Plants</b>  *Mode of nutrition in plants- Autotrophic and Heterotrophic nutrition *Photosynthesis *Types of Heterotrophic nutrition Insectivorous(Para sitic) 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	

<p>soil</p> <p><b>Ch-2:Nutrition in Animals</b></p> <p>*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</p>	<p>*Draw schematic diagram of a section of leaf.</p> <p>*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.</p>	<p>*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</p>	
<p>MAY</p>	<p><b>Ch-3: Fibre to Fabric(Rationalize</b></p>	<p>*Gains knowledge about which animals</p>	<p>*Differentiate between natural</p>

**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

**Ch-4: Heat**

\*Measuring  
temperature using  
thermometer  
\*Types of  
thermometer-  
Clinical,  
Laboratory  
\*Precautions  
using  
thermometers  
\*Transfer of

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

\*Defines temperature,  
thermometer,  
conduction, radiation  
\*Distinguish the Clinical  
thermometer from  
Laboratory  
thermometer (range,  
least count, units of  
measurement)  
\*List precautions while  
using a clinical and  
laboratory thermometer  
\*Devises an activity to

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

\*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

PT-1 in July  
**Max M: 40**  
 (Weightage 5m)

	<p>heat(Different modes)          *Conduction- Insulators and conductors          *Convection- Land breeze and Sea breeze, Radiation</p>	<p>elaborate the process of thermal conduction, convection &amp; 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</p>	<p>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</p>
JULY	<p><b>Ch-5 :Acids,Bases and Salts</b>          *Acids and Bases          *Natural Indicators Around us          Litmus,turmeric and China rose as natural indicator          *Neutralisation          *Neutralisation in</p>	<p>*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</p>	<p>*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</p>

30% of Term 1  
 (Apr to Jun syllabus)

		<p>everyday life</p> <p><b>Ch-6: Physical and Chemical Changes</b></p> <p>*Physical changes and Chemical changes</p> <p>*Activities of Chemical changes</p> <p>*Rusting of Iron</p> <p>Crystallisation</p>	<p>*Analysis neutralization reactions and its characteristics</p> <p>*Evaluate the effectiveness of certain neutralization reactions employed in everyday life</p> <p>*Defines physical, chemical changes, reversible and irreversible change</p> <p>*Differentiates physical changes from other changes</p> <p>*Design an activity to prevent rusting by painting,oiling</p> <p>*Illustrate the usage of crystallization in purification of various salts</p> <p>*Applies related concepts in his daily life situations.</p>	<p>solutions</p> <p>*Process of neutralisation using phenolphthalein indicator</p> <p>*Observing the use of milk of magnesia, baking soda, calamine solution ,quick lime etc in our daily life</p> <p>*Activities to show physical changes</p> <p>*Burning of magnesium ribbon</p> <p>Reaction of CuSO<sub>4</sub> with iron</p> <p>*Reaction of Vinegar with baking soda and the gas released will turn lime water milky</p> <p>*Process of crystallisation</p>	
	AUGUST	<b>Ch-7: Weather,</b>			

**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

- \*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 Thiruvananthapuram; Assam and Rajasthan
- \*Plot the Polar regions and Tropical rainforest regions ,in a world map

**Ch-8: Wind, Storms and Cyclones(Rationalized)**

- \*Air Exerts Pressure
- \*Air Expands on Heating
- \*Thunderstorms

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

				<p>different categories based on its properties</p> <ul style="list-style-type: none"> <li>*Describe all the layers in the soil profile</li> <li>*Examine different soil samples in order to infer moisture content and percolation rate</li> <li>*Explains the effects of soil pollution on life on earth.</li> <li>*Predict the consequences of absence of soil on life on earth and suggests precautions</li> </ul>	<p>profile</p> <ul style="list-style-type: none"> <li>*Collecting different soil types to check the percolation</li> </ul>	
	<p>PT2 in Sep Max M: 80 (Weightage 80 m)</p>	SEPTEMBER	Revision			<p>30 + 20 = 50% Of Annual Syllabus</p>
TERM-2		OCTOBER	<p><b>Ch 10: Respiration in Organisms</b></p> <ul style="list-style-type: none"> <li>*Why do we respire?</li> <li>*The process of breathing</li> </ul>	<ul style="list-style-type: none"> <li>*Understand respiration as breakdown of food for energy</li> <li>*Differentiate aerobic and anaerobic respiration</li> <li>*Illustrate the respiratory system with</li> </ul>	<ul style="list-style-type: none"> <li>*Compare the breathing rate of self, parents, children and old people</li> <li>*Anulom Vilom Yoga</li> <li>*Make model to</li> </ul>	

		<ul style="list-style-type: none"> <li>*Breathing in other animals</li> <li>*Do plants also respire?</li> </ul>	<p><b>Ch 11: Transportation in Animals and Plants</b></p> <ul style="list-style-type: none"> <li>*Circulation</li> <li>*Blood, Blood vessels and heart</li> <li>*Heartbeat</li> <li>*Excretory system in humans</li> <li>*Transport of substances in plants</li> <li>*Transport of water and minerals</li> </ul>	<p>labeling</p> <ul style="list-style-type: none"> <li>*Compare respiration and breathing</li> <li>*Analysis the position of diaphragm during inhalation and exhalation</li> </ul> <p>*Discuss the importance of transportation in organisms</p> <ul style="list-style-type: none"> <li>*List the components of Circulatory system</li> <li>*Diagrammatic representation of heart</li> <li>*Analysis the role of heart in blood circulation</li> <li>*Discuss the role of excretory system in transportation</li> <li>*Evaluate the role of artificial kidney in blood filtration</li> </ul>	<p>show mechanism of breathing</p> <ul style="list-style-type: none"> <li>*To check the effect of exhaled air on lime water</li> <li>*Collect and share information about</li> <li>*Artificial respiration</li> </ul> <p>* To check the pulse rate of children and adults and compare</p> <ul style="list-style-type: none"> <li>*Model of a stethoscope</li> <li>*Find out the blood groups and their importance</li> <li>*Potato activity to show transportation of water through cells</li> <li>*Collect and share information about ECG and Dialysis</li> <li>*Activity for transpiration</li> </ul>	
OCTOBER TO	NOVEMBER	<b>Ch 12:</b>				

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

\*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

time graph of an object moving with Uniform and Non uniform speed  
Model of a sand clock

**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

\*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

Make an electric circuit

	<p>PT-3 in Dec  <b>Max M: 40</b>  <b>(Weightage 5m)</b></p>	<p>DECEMBER</p>	<p><b>Ch 15: Light</b></p> <ul style="list-style-type: none"> <li>*Properties of light</li> <li>*Plain Mirror and Spherical mirror, images formed by these mirrors</li> <li>*Uses of plane and spherical mirror</li> <li>*Concave and convex lens, images formed by these lens</li> <li>*Uses of concave and convex lens</li> <li>*Dispersion of white light using prism</li> </ul>	<ul style="list-style-type: none"> <li>*Recall light as a form of energy and its uses in daily life</li> <li>*Examine that light travels in a straight line</li> <li>*Demonstrate image formation by using candle and mirror</li> <li>*Introduce the terms image, object and light source</li> <li>*Explain the concept of reflection by citing relevant examples</li> <li>*Introduce the concept of lateral inversion by giving real life examples</li> <li>*Explain the two types of mirrors: concave and convex</li> <li>*Demonstrate the image formation in concave and convex mirrors and identify the</li> </ul>	<ul style="list-style-type: none"> <li>*Light travels in a straight line</li> <li>*Locating image in a plane mirror</li> <li>*Image formation in a spoon</li> <li>*Paper burning activity by capturing image of sun</li> <li>*Images formed by a concave and convex mirror</li> <li>*Newton's disc</li> <li>*Refraction through prism</li> </ul>	<p>PT3-30% of Term 2  (Oct to Nov syllabus)</p>
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			<p>properties of the image formed</p> <ul style="list-style-type: none"> <li>*Illustrate with an activity that white light is made of seven colors using a prism</li> <li>*Construction of a colour wheel</li> </ul>	
		<p><b>Ch 16: Water: A precious resource(Rationalized)</b></p> <ul style="list-style-type: none"> <li>*Availability of water and its distribution</li> <li>*Forms of water, water cycle, source of water</li> <li>*Depletion of water table</li> <li>*Water Management</li> <li>*Effects of water scarcity on plants</li> </ul>	<ul style="list-style-type: none"> <li>*Recall the significance of water and its role in life sustenance</li> <li>*Explain the quantity of potable water left for usage</li> <li>*Evaluate the forms of water and it's usage</li> <li>*State the importance of ground water to mankind</li> <li>*List the reason for depletion of water table and ways to conserve it</li> <li>*Formulate a method to conserve water which is a need of the hour</li> </ul>	<ul style="list-style-type: none"> <li>*Collect information about water requirement for students of each class</li> <li>*Study the effect of water scarcity on plants</li> <li>*Implement water conservation at school and house</li> </ul>
	JANUARY	<p><b>Ch 17: Forests : Our lifeline</b></p>	<ul style="list-style-type: none"> <li>*Recollect the uses of forests</li> <li>*Analysis the structure</li> </ul>	<ul style="list-style-type: none"> <li>*Collect pictures of different types of trees</li> </ul>

\*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 segregate wet and dry waste separately

		FEBRUARY	REVISION		REVISION
	ANNUAL EXAMINATION in March <b>Max M: 80</b> <b>(Weightage 80 m)</b>	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.**