

CLASS: VII
SUBJECT: Science

Topic	Learning Objectives		Innovative/Art Integration/Experiential Learning/Intel Disciplinary
1 Nutrition in plants	<p>The students will be able to: Define nutrition and understand the importance of nutrition. Classify modes of nutrition. 3. Predict the modes of nutrition in different organism. 4. Distinguish between autotrophic and heterotrophic modes of nutrition. 5. Illustrate the role of stomata in plants and explain how the opening and closing of guard cells is controlled. 6. Explain the effect of any waxy</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Apply (symbiotic relationship) give and take relationship in their day to day life like in lichen. 2. Discourage parasitic mode of survival i.e. the one-way relationship like parasitic plants. 3. Develop the tendency to reuse the substances (best out of waste) like plants convert excess CO₂ into food and O₂. 4. Show sensitivity and concern towards plants. 5. Apply the concept of recycling of available material waste substances. 6. Apply the concept of replenishing the nitrogen content in soil by growing leguminous plants in their garden 7. Appreciate the role of 	<p>1: To show that sunlight is necessary for photosynthesis with the help of leaves kept deprived of sunlight for about 2- 3 days. 2: To show the presence of starch in leaves with the help of iodine test. To show that non green plants also undergo photosynthesis. Importance of Light in Photosynthesis - MeitY OLABs https://youtu.be/Julupbw411A</p>

	<p>coating on the rate of photosynthesis.</p> <p>7. Illustrate how nutrients are replenished in the soil.</p> <p>8. Demonstrate the presence of starch in leaves.plants.</p> <p>9. Demonstrate the presence of starch in leaves.</p> <p>10. Explain how non green plants undergo photosynthesis.</p>	<p>fertilizers and manure to increase soil fertility.</p>	
<p>2. Nutrition in animals</p>	<p>1.Learners will be able to prepare ORS solution to</p>	<p>1.Video watching of journey of food in alimentary canal of</p>	<p>1.The students will be able to</p>

<p>Students will be able to</p> <ol style="list-style-type: none"> 1.To discuss the components of food and food sources 2. To differentiate between mode of nutrition in plants and animals 3. To comprehend that nutrition is the sum total of all processes from ingestion to egestion 4. To understand role of various organs in the process of nutrition 5. To understand the Journey of food in the alimentary canal: Different steps of nutrition (ingestion, digestion, absorption, assimilation, egestion) 6. To understand and analyse the process of digestion in grass eating animals and unicellular organisms. 	<p>treat diarrhoea</p> <ol style="list-style-type: none"> 2. Learner will be able to take necessary precautions to prevent tooth decay. 3. Learner will learn to appreciate the quality of oneness in diversity around. 4. Learner will understand that at some stages of life , one needs to take a helping hand for smooth going. 5 Learner will also realize that a same common task may be performed by all, but its processing will be unique as every individual is a separate identity. 	<p>humans and discussion.</p> <ol style="list-style-type: none"> 2. To identify the taste buds on one's own tongue by tasting different raw food materials. 3. To study the effect of saliva on food. 	<ol style="list-style-type: none"> 2. Understand the function of various organs involved in the digestion of food. 3. Illustrate journey of food in digestive system. 4. Understand the concept of cud chewing 5. Relate cud chewing with the structure of stomach 6. Analyse the digestive systems of human non ruminant and ruminant 7. Interpret and describe the steps of nutrition in amoeba 	<p>Students will be asked to label various parts of human digestive system and write their functions. Parametres</p> <ol style="list-style-type: none"> 1. Labelling 2. Function of parts of digestive system. <p>Visual Art</p> <p>-To prepare the denture of their own teeth.</p> <p>Craftsmanship</p> <p>Originality and Creativity</p> <p>Participation</p>
---	--	---	---	--

--	--	--	--	--	--

<p>3. Introduction about matter followed by Physical and chemical changes</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Know about matter and its forms- pure and impure. 2. Distinguish between elements, compounds and mixtures. 3. Draw the symbols of various known elements and write the latin names of some elements. 4. Tell the atomicity of the given element in a compound. 5. Define physical and chemical changes. 6. Understand the properties of physical and chemical changes. 7. Differentiate between physical and chemical change. 8. Classify the changes as physical 	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Realize the importance of crystallization technique in making of sugar, salt, potash alum (phitkari crystals) 2. Learn the reasons of rusting of iron. 3. Know chemical changes occurring in everyday life such as formation of curd from milk, souring of milk, burning of crackers etc 4. Prevent iron articles at home from rusting by simple methods such as oiling /painting or greasing. 5. Use vinegar and baking soda to clean tiles at home. 6. Appreciate alloying, galvanization and electroplating methods to prevent corrosion of iron. 	<p>Activity 1: To study the following changes and record the observation</p> <p>Melting of ice Crystallizations of sugar Sublimation of camphor Boiling of water Chopping of water Dissolving sugar in water</p> <p>Activity 2: The burning of magnesium ribbon Activity 3: Displacement reaction between iron nail and copper sulphate solution. Activity 4: Reaction of vinegar with baking soda Activity 5: Crystallization of sugar from its impure solution</p> <p>Links of Amrita virtual Lab</p> <p>The burning of magnesium ribbon(https://youtu.be/9xaFPO4q nPA)</p> <p>Displacement reaction between iron nail and copper sulphate solution.(https://youtu.be/3ctvPrA wbPY)</p> <p>Reaction of vinegar with baking soda(https://youtu.be/nRMymIy7U 6E)</p> <p>Crystallization of sugar from its</p>	<ol style="list-style-type: none"> 1. The students have learned the definition and properties of physical and chemical change. 2. The students have learned the differences between physical and chemical change. 3. The students have learned to classify the changes observed in our day to day life as physical or chemical change. 4. The students have learned about the displacement reaction between iron nail and copper sulphate solution. 5. The students have learned the chemical reactions taking place during the burning of magnesium ribbon. 	<p>Activity- Identification of physical and chemical changes through a power point presentation</p> <p>Rubrics</p> <p>Identification of type of change</p> <p>Reason for classification into physical and chemical change.</p>
---	--	---	---	---	--

		<p>or chemical change.</p> <p>9. List out physical and chemical changes which they observe in their surroundings.</p> <p>10. Understand the displacement reaction between iron nail and copper sulphate solution.</p> <p>11. Describe burning of magnesium ribbon as a chemical change.</p> <p>12. Demonstrate and write the reaction of vinegar with baking soda.</p> <p>13. Demonstrate the test of CO₂ gas with the help of lime water.</p> <p>14. Test the nature of magnesium oxide as acid or a base.</p> <p>15. Illustrate rusting of iron as a chemical change.</p> <p>16. Understand the</p>		<p>impure solution</p> <p>(https://youtu.be/SAU-gptAFe0)</p>	<p>6. The students have learned the reaction of vinegar with baking soda.</p> <p>7. The students have learned how to test of CO₂ gas with the help of lime water.</p> <p>8. The students have learned how to test the nature of magnesium oxide as acid or a base with the help of litmus paper.</p> <p>9. The students have learned about the rusting of iron and the essential conditions required for rusting</p> <p>10. The students have learned about the various methods which are used to prevent corrosion of iron.</p> <p>11. They have learned how to apply the method of crystallization to obtain pure</p>	
--	--	--	--	---	--	--

	<p>essential conditions required for rusting of iron.</p> <p>17. Define the term galvanization</p> <p>18. Demonstrate the crystallization of copper sulphate from its saturated solution.</p>			<p>crystals of sugar or salt from their impure saturated solution</p> <p>12. They have learned the uses of vinegar and baking soda in our day to day</p>	
4.Heat	<p>Students will be able to-</p> <p>1. Understand the difference between heat and temperature</p> <p>2. Comprehend about the different modes of transfer of heat.</p> <p>3. Explain the construction and working of different types of thermometer and thermos flask.</p> <p>4. Understand the difference between the properties of different types of thermometer</p>	<p>Students will be able to</p> <p>1. Analyze the various modes of transfer of heat in various day to day activities</p> <p>2. Sensitize themselves towards energy conservation.</p> <p>3. Read the temperature using thermometer accurately.</p> <p>4. Select suitable materials according to the need of time</p> <p>5. Take safety measures before and after using the thermometer.</p> <p>6. Compare the properties of silver and dark coloured objects.</p>	<p>1. Video demonstration on modes of transfer of heat https://www.youtube.com/watch?v=FJTD-GptXU4 followed by the demonstration of conduction, convection and radiation by the students.</p> <p>2. Testing of conductivity of different materials like metal, wood and plastic</p> <p>3. Demonstration of clinical, laboratory and digital thermometer followed by comparison of their features by the learners.</p> <p>4. Converting one scale of temperature into another.</p> <p>5. Making of a thermos flask and studying the various features of thermos flask.</p> <p>6. Comparing the properties of silver polished and black coloured objects.</p> <p>To show the inter-conversion of</p>	<p>1. Students are aware about the difference between heat and temperature.</p> <p>2. They know about the condition for the transfer of heat and identify the direction of heat on the basis of their temperatures.</p> <p>3. Students know about the various modes of transfer of heat and can identify them in their daily life experiences.</p> <p>4. Students know about the different types of thermometer.</p>	<p>Group Activity:</p> <p>Model making of any device demonstrating any of the modes of transfer of heat like</p> <ol style="list-style-type: none"> Solar Cooker Thermos flask Green house <p>Parametres of Model making (Visual and Performing arts)</p> <p>Visual Appearance Construction Scientific understanding</p>

			<p>states of matter through Amrita Virtual Lab Activity https://youtu.be/ENVKQVIDNL Y</p> <p>To find out the boiling point of water and melting point of ice through Amrita Virtual lab Activity https://youtu.be/zk4vhD2X4Ewh https://youtu.be/nZXoe0fgJ8Q</p>	<p>5. Students now select colour of clothes according to season. Thus they give more preference to comfort rather than fashion.</p> <p>6. They use thermos flask in order to maintain the temperature of liquid kept in it.</p> <p>7. They can read the temperature from different types of thermometer.</p> <p>8. Students can select thermometer on the basis of purpose of use. 9. Construct a thermos flask and study its properties.</p>	
5. Weather, climate and adaptation	<p>Students will be able to-</p> <ol style="list-style-type: none"> 1. Know the difference between climate and weather. 2. Make aware 	<p>The learners will:</p> <p>Be able to understand the day to day condition of atmosphere at a place with respect to temperature, humidity, rainfall, wind speed etc.(weather)</p>	<ol style="list-style-type: none"> 1. Recording of weather report from a newspaper for one week. 2. A student will be asked to mark following place sin world map- Canada, Greenland, Iceland, Norway, Sweden, Finland, Alaska, (polar region) 	<p>The students learnt:</p> <p>The meaning of weather and climate and elements of weather.</p>	<p>To collect the pictures of migratory birds and animals. To paste them in the note book and write about the problems</p>

	<p>about the adaptation in polar and tropical regions.</p> <p>3. Recapitulate the concept of adaptation.</p> <p>4. Understand the role of adaptation in different climatic conditions.</p> <p>5. Comprehend how adaptation helps these animals to survive in extreme harsh climatic conditions. 6. Predict all changes in the weather are driven by the sun.</p>	<p>Empathized towards the necessity of adaptation. Reason for phenomenon for adaptation as it plays important role in survival. Show concern for the environment.</p> <p>Imbibe the value of sensitivity towards environment.</p> <p>Suggest the weather and climate of a place.</p> <p>They will be able to make their own rain gauge.</p>	<p>Malaysia, Indonesia, Brazil, Republic of Congo, Kenya, Uganda and Nigeria (Tropical rainforest)</p> <p>Question will be asked to the student related to the activity. 3.Students will be shown the video on adaptation in polar region and in tropical rainforest. Teacher will ask question related to the adaptation in video.</p> <p>4. Model making of Rain Gauge.</p>	<p>The role of sun in change of weather. Reason for phenomenon of adaptation in polar and tropical rainforest regions and its importance</p> <p>How adaptation plays a role in survival of organisms in extreme climatic conditions. The reason of migratory birds fly to distant place during winter seasons.</p>	<p>they faced in their natural habitat. Also write adaptation done by them. Rubrics- Presentation, Concept, Relevancy and Analysis.</p>
6. Soil	<p>The students will be able to</p> <p>1. Understand about components of soil.</p> <p>2. Develop the ability to analyze different types of soil like sandy, clayey and loamy.</p> <p>3. Analyze various layers of soil (Soil</p>	<p>Students will be able to-</p> <p>1. Avoid soil pollution by not throwing the garbage in the soil.</p> <p>2. Understand why only clayey soil is used for making matkas and surahis.</p> <p>3. Plant more and more trees to prevent soil erosion.</p> <p>4. Relate soil structure and properties of soil with the type of crops.</p>	<p>I) Activity (to introduce the lesson)</p> <p>Activity 1: Video demonstration of process of weathering of rocks. https://youtu.be/kGNiKoE8Nn8 https://youtu.be/LFob6BY_W_E</p> <p>Activity 2: Demonstration of soil profile and explanation of different layers of soil.</p> <p>Activity 3: Collection of different samples of soil by the</p>	<p>1. Students are aware about the various components of soil.</p> <p>2. They can analyze different types of soil on the basis of their availability and properties. 3. They are aware</p>	<p>To calculate the percolation rate and the rate of absorption of given sample of soil.</p> <p>Parameters: 1. Observation 2. Accuracy</p> <p>Brainstorming about the factors responsible for soil</p>

	<p>profile).</p> <p>4. Understand properties of soil</p>		<p>learners and pasting them in the scrap book and Comparison of different samples of soil on the basis of colour, size of particles, texture.</p> <p>Activity 4: Calculating the percolation rate and absorption rate for different samples of soil</p> <p>Activity 5: Locating the different types of crops grown in different parts of country having different types of soil.</p> <p>Activity 6: Making of different articles with clayey soil</p> <p>Activity 7: Poster making on harmful effects of soil pollution and soil erosion.</p>	<p>about the causes of soil pollution and soil erosion.</p> <p>4. They know that the properties of soil decide the type of crop grown in it.</p> <p>5. They know that clayey soil is most suitable for making matkas and surahis.</p>	<p>pollution and soil erosion through poster making activity (activity for visual art)</p> <p>Parametres</p> <p>Picture/ graphics</p> <p>Required element</p> <p>Science content and lietracy</p>
7. Waste water story	<p>Students will be able -</p> <p>1. Recognize the importance of water for the survival of life</p> <p>2. Value water as an important renewable resource</p> <p>3. Know the terms sewage ,sewers, contaminants and sewage treatment</p>	<p>Students will be able –</p> <p>1. To choose between the alternatives as the best path for self</p> <p>2. To impart an active role in keeping the environment clean.</p>	<p>Activity 1</p> <p>Testing of water sample for pH https://youtu.be/RVpSPidRhM8</p> <p>Amrita Virtual lab</p> <p>- Activity 2</p> <p>Site Visit to the waste water treatment plant</p> <p>- Activity 3</p> <p>Video https://www.youtube.com/watch?v=f6Uu8CpOn-0</p>	<p>1. They will understand the steps associated with the purification of sewage.</p> <p>2. They will be able to compare and suggest the best methods of ancient and modern sewage practices.</p> <p>3. Understand</p>	<p>Making of flowchart showing the various steps involved in waste water treatment plant</p> <p>Rubrics</p> <p>1. Sequence</p> <p>2. Accuracy of steps</p>

		<p>4. Understand the importance of drainage systems.</p> <p>5. Understand the various steps involved in the sewage treatment</p> <p>6. Know about the alternative arrangement for sewage disposal.</p> <p>7. Provide measures for effective sanitation.</p>		<p>Activity 4: Calculating the amount of waste water recycled in school campus.</p> <p>Activity 5: Research on the various alternate waste disposal practices.</p> <p>Activity 6: Studying the impact of RO water on health.</p>	<p>about the alternative arrangement for sewage disposal.</p> <p>4. Learners will create awareness amongst others.</p>	
--	--	---	--	--	--	--

nd

8. Motion and Time	<p>Students will be able to</p> <p>1. Explain uniform and non uniform motion</p> <p>2. Understand the concept of speed and average speed</p> <p>3. Explain about the dependant and independent quantities and how they are used in the graph.</p> <p>4. Explain the various</p>	<p>Students will be able to</p> <p>1. Evaluate speed and average speed on the basis of given information.</p> <p>2. Convert the various systems of units of distance and time according to the need and thus will emphasize on uniformity.</p> <p>3. Interpret the available data in the form of a graph.</p> <p>4. Place dependant and independent physical quantities correctly in the graph.</p> <p>5. Give importance to time</p>	<p>1. Activity: Demonstration of a video showing the history of measuring time http://www.youtube.com/watch?v=Ou6_MkIvKOO</p> <p>2. Activity- Making of simple models of sundial, hour clock/ sand clock, simple pendulum with the help of waste materials</p> <p>3. Activity- Finding out of time with the help of models made by the students.</p> <p>4. Activity: Demonstration of simple pendulum and calculation of time period with the changing length of simple pendulum.</p>	<p>1. Students will be enlightened with the importance of time and the need of accuracy.</p> <p>2. They will be acknowledged with uniform and non-uniform motion.</p> <p>3. They can evaluate the speeds of different moving objects with accuracy.</p> <p>4. They can</p>	<p>Aim of the activity: To calculate the time period of a simple pendulum and study the effect of length of pendulum on time period.</p> <p>Parameters: 1) Observation 2) Accuracy 3) Handling with the apparatus</p> <p>Model making of</p>	

		<p>technological advancements regarding finding out time starting from the periodic events to the digital clocks.</p> <p>5. Know different units of motion and time</p>	<p>and the need of accuracy.</p> <p>6. Analyze the technological advancements and appreciate them.</p>	<p>5. Video showing construction of quartz clock https://youtu.be/guJn-iCaHXE</p> <p>6. Activity in playground: Aim of the activity- To identify the type of motion and calculate speed and average speed.</p> <p>7. Activity- Plotting of distance-time graph And Comparison of speeds-</p>	<p>compare the speeds by observing the pattern obtained in graph.</p> <p>5. They can create their own time keeping devices and use them efficiently.</p> <p>6. They will be motivated towards their physical well being through the sportive events.</p>	<p>ancient devices for measuring time- visual arts</p> <p>Visual Appearance Construction Scientific understanding</p>
9.Acids, bases and salts	<p>Students will be able to:</p> <p>1) Know about indicators and their types.</p> <p>2) Identify acids and bases with the help of indicators.</p> <p>3) Understand the properties of acids and bases.</p> <p>4) Differentiate between acids and bases.</p> <p>5) Express the chemical reaction of neutralisation reaction.</p> <p>6) Demonstrate the</p>	<p>Students will be able to:</p> <p>Recognize acid and base on the basis of taste.</p> <p>Test acid and base with the help of indicators. Use China rose, red cabbage, turmeric, bougainvillea, beet root as natural indicator.</p> <p>Appreciate and use lemon and tamarind to clean corrosive layer on utensils like brass and copper.</p> <p>Handle and store acids safely.</p> <p>Treat acidity in stomach and tooth decay.</p> <p>Treat ant bite at home</p> <p>Carry out safe disposal of</p>	<p>Activity 1: To prepare natural indicators like turmeric, china rose indicator and red cabbage and to test the nature of samples given with natural indicators and synthetic indicators.</p> <p>Activity 2: To show the neutralisation reaction between hydrochloric acid and base sodium hydroxide with the help of phenolphthalein indicator.</p> <p>Activity 3. Video demonstration https://youtu.be/WkNVAqmPLf https://youtu.be/tTxL49r7SWQ</p>	<p>Students have learnt about:</p> <p>1. Indicators and their types.</p> <p>2. Action of indicators on acids and bases.</p> <p>3. Differences between acids and bases.</p> <p>4. Neutralisation reaction.</p> <p>5. Chemical reaction between HCl and NaOH.</p> <p>6. Use of neutralisation reaction in our day to day life.</p>	<p>Activity : To find out the changes in the colour of the indicators and note them in the table and write their nature.</p> <p>Parametres</p> <p>1. Observation with indicators</p> <p>2. Analysis of nature of substance</p>	

		neutralisation reaction of NaOH & HCl with the help of phenolphthalein indicator. 7) Describe use of neutralization reaction in our day to day life.	chemicals.		7. The treatment of acidity, tooth decay, ant bite by using mild bases. 8. Safety measures while using acids and bases.	
10. Respiration in living organisms	Students will be able to 1. Learn and understand the concept of respiration and can compare between aerobic and anaerobic respiration. 2. They will be able to understand the mechanism of breathing. 3. They will be able to comprehend and relate how, in cellular respiration, complex organic compounds such as glucose are broken down to provide energy in the form of ATP which is used to provide	Students will be able to 1. Understand how different microbes can be beneficial to human beings. 2. They will be able to understand why heavy exercise leads to anaerobic respiration which is responsible for cramps in muscle in human 3. They will be able to understand why breathing becomes faster after physical exercises and slower during sleep. 4. They will be able to understand how to identify exhaled gas. 5. They will apply warm water in case of muscle cramps in order to get relief. 6. They will be able to analyze that cramps in muscle as well as bakery products, south Indian		1. Explanation of human respiratory system through chart and video. 2. To test the presence of carbon dioxide in the exhaled air. 3. Measurement of breathing rate. 4. Measurement of chest cavity during exhalation and inhalation. 5. Demonstration of anaerobic respiration of yeast. https://www.youtube.com/watch?v=l-RFAEJ6OCE https://youtu.be/gx1USUxjqHQ Virtual Lab. – CO ₂ is given out during respiration-- https://youtu.be/34ESzqzf_Uo	Expected Learning Outcome- 1. Students know about the aerobic and anaerobic respiration. 2. They know the mechanism of inhalation and exhalation and can record the change in chest size while inhalation and exhalation 3. They will apply warm water in case of muscle cramps in order to get relief. 4. They were able to analyze that cramps in muscle as well as bakery products, south Indian dishes and	Activity: Counting of breathing rate at normal stage, after a brisk walk for ten minutes, after running fast 100 m. and at rest position and note down your findings in tabular form:- Parameters: Observation and understanding, Analysis Visual Art- Teacher will ask the students to prepare a model to show mechanism of breathing. Parameters 1. Organization of ideas 2. Clarity

		<p>energy for other reactions in the cell.</p> <p>4. Identify the process of fermentation is due to anaerobic respiration which is used in production of alcohol, vinegar and bakery industries as well as in making of dosa etc.</p>	<p>dishes and production of alcohol is due to anaerobic respiration.</p>		<p>production of alcohol is due to anaerobic respiration</p> <p>5. They were able to relate lactic acid production in muscle with lactic acidosis , uric acid crystals (gout).</p>	
	11. Transportat ion in animals and plants	<p>Specific Objectives</p> <p>1. Students will be able to understand the importance of different life process and mechanism of circulatory system where and how materials such as oxygen, carbon-dioxide, food and excretory products are transported</p> <p>2. Students will be able to understand the components and functions of blood, calculate pulse rate,</p>	<p>Students will be able to-</p> <p>1. Know the importance of iron rich food in order to increase the percentage of haemoglobin in blood.</p> <p>2. Know how a stethoscope records the heartbeat.</p> <p>3. Aware how urinary system removes out waste from the body.</p> <p>4. They will be able to analyze how osmosis and transpiration are important for transport of water and minerals in highly differentiated plants.</p> <p>5. Understand how food is transported in tall trees.</p>	<p>1) Video on human circulatory system.</p> <p>2) To measure the heart beat rate and pulse rate.</p> <p>3) To make a model of stethoscope.</p> <p>4) <i>Virtual lab - Osmosis -</i> https://youtu.be/uixn83fA5 <u>Q</u></p> <p>5) To understand the process of transpiration.</p> <p>Virtual Lab- https://youtu.be/OSqhTmiXhV I</p>	<p>1. Students know about the various components of blood and their functions.</p> <p>2. They can calculate the pulse rate and feel the heart beat.</p> <p>3. They know the structure of heart and its function.</p> <p>4. They are aware about the fact that the wastes have to be eliminated out from the body as they are toxic.</p> <p>5. They are equipped with the</p>	<p>Prepare a handmade stethoscope and measure the heart beat of your three family members (One above 60yrs, One below 15yrs, One between 25 to 50yrs) and record it in tabular form:-</p> <p>Parametres: Construction Application Skill Synthesis</p> <p>Visual Arts A chart of human heart will be shown and described to the</p>

		<p>understand and draw the structure of heart and learn the transportation of materials in plants and animals.</p> <p>3. Students will be able to understand the components and functions of blood cells and about importance of hemoglobin.</p> <p>4. Students will be able to enhance the ability to understand the mechanism of excretion in human beings in the form of soluble nitrogenous compounds.</p> <p>5. They will understand the process of osmosis and transpiration.</p> <p>6. Students will be able to understand and summarize about different technologies and its implementation for survival like</p>			<p>role of kidney and other parts involved in excreting wastes in human beings and other animals.</p>	<p>students. Students will draw a diagram along with the flow chart of double circulation of blood.</p> <p>Parametres: 1. Labelling and spelling 2. Accuracy</p>
--	--	---	--	--	---	--

		renal dialysis.				
--	--	-----------------	--	--	--	--

	12. Winds, storms and Cyclones	Students will be able to- 1. Demonstrate that air exerts pressure 2. Demonstrate that air expands on heating and contracts on cooling 3. Explain the formation of monsoon winds. 4. Explain the formation of thunderstorm and cyclones.	Students will be able to- 1. Relate the formation of thunderstorm and cyclone with the variation in air pressure. 2. Adopt safety measures during cyclone and thunderstorm.	1. Activities to show that- a) Air exerts pressure b) Air expands on heating and contracts on cooling, c) High speed winds are accompanied by reduced air pressure 2. Making of model of anemometer. 3. Video showing the formation of cyclone and tornado.	1. Students can comprehend the various changes brought about by the difference in air pressure. 2. They can relate the concept in real life situations like formation of cyclone and thunderstorm occurred due to difference in air pressure. 3. Students know how monsoon winds are generated which play a very important role in bringing rainfall.	Drawing of flowchart showing the various steps involved in the formation of cyclone. Rubrics 1. Correct sequencing of the events
	13. Light	Students will be able - 1. To enable students to obtain images of different objects by reflecting light on different surfaces. 2. To make them understand regular	Students will be able to 1. Know why AMBULANCE is written in a different pattern. 2. Obtain spectrum by using prism and source of light. 3. Identify different types of lenses and mirrors used in everyday life.	1. Reflection of light through concave and convex mirrors 2. The size of the image changes with the change in the distance of the object from mirror. 3. Bending of light through concave and convex lenses 4. The size of the image changes with the change in the distance of the object from lens.	1. Students know the various conditions required for regular and irregular reflection. 2. They are acquainted with the properties and	Identification of concave and convex mirror and lens and applications. Rubrics Identification

		<p>and irregular reflection.</p> <p>3.To understand formation of images by concave and convex lenses.</p> <p>4.To understand Characteristics of the image formed by changing the distance from the lens.</p> <p>5. To prove White light as a mixture of seven colours.</p> <p>6. To explain Formation of rainbow</p>		5. Dispersion of light through prism	<p>uses of spherical lenses and mirrors.</p> <p>3. The can identify the concave and convex lens found in their daily life like rear view mirror uses the convex mirror while a dentist uses the concave mirror.</p> <p>4. They can explain the formation of rainbow and how can we obtain white light.</p>	
	14. Electric current and circuits	<p>Students will be able to-</p> <p>1. Understand the various components of electric circuit and draw their symbols.</p> <p>2. Understand why heat is produce when an electric is passing through a wire.</p> <p>3. Explain importance of</p>	<p>Students will be able to 1. Know the importance of safety fuse and M.C.B.</p> <p>2. Understand why CFL should be preferred instead of electric bulb.</p> <p>3. Understand how cranes work.(Electromagnetic effect)</p>	<p>1. To draw the symbols of various electrical components</p> <p>2. Activities to show the heating effect of electric current</p> <p>3. Making of an electromagnet</p>	<p>1. Students know that electric current produces heating effect and magnetic effect.</p> <p>2. They are aware about the advantage of CFC over electric bulb.</p> <p>3. They can relate the concept to real life situations like cranes use electromagnets for</p>	<p>Making of electric circuit by using battery by connecting two to three cells in series and other components of circuit.</p> <p>Rubrics</p> <p>1. Construction of circuit</p> <p>2. Viva</p>

		<p>heating effects of electric current in our daily life</p> <p>4. List out some of the electrical appliances which work on the property of heating effects of electric current.</p> <p>5. Make an electromagnet</p> <p>7. Distinguish between temporary and permanent magnets</p> <p>8. Explain the working of electric bell.</p>			<p>lifting heavy objects, electric heater gets heated up because of the heating element.</p> <p>4. They know that the fuse wire has low melting point hence it immediately breaks in case of excess current.</p>	
	15.Reproduction in plants	<p>I - Specific Objectives To enable the students to: Define reproduction Know the types of reproduction and define them. Define vegetative propagation Illustrate vegetative propagation in rose, potato, ginger, bryophyllum,</p>	<p>To enable the students to: Appreciate the use of yeast powder for formation of cakes Grow potato, ginger and rose plant using the various techniques of vegetative propagation Express the gratitude towards the various agents of pollination and seed dispersal. Grow plant of desired quality by vegetative propagation.</p>	<p>1) Demonstration of vegetative propagation in potato, ginger, and cutting in rose and bryophyllum leaf.</p> <p>2) Demonstration of various parts of the flower</p> <p>3. Student activity- Growing of cactus by collecting pieces of different kinds of cacti.</p> <p>4. Collection of flowers of different plants and grouping them as unisexual and bisexual flowers.</p> <p>5. Video demonstration</p>	<p>The students have learnt about: Reproduction and the types of reproduction Vegetative propagation and how to grow plants by vegetative parts of plants. Vegetative propagation in rose, potato, ginger,</p>	<p>1. Listing of any five fruit bearing plants along with the agents of seed dispersal and the part which helps in dispersal.</p>

		<p>sweet potato. Differentiate between sexual and asexual reproduction. Illustrate budding in yeast, fragmentation in spirogyra and spore formation in rhizopus. Know the various vegetative parts of plants. Know the various parts of flower and understand their function. Understand the advantages of vegetative propagation. Define pollination and its types. Understand the process of fertilization and the process of formation of fruit and seed. Know the agents of seed dispersal and its importance.</p>	<p>Compare the mechanism of cloning with reproduction</p>	<p>https://www.youtube.com/watch?v=1GH8In1RORI</p> <p>3. Col</p>	<p>bryophyllum, sweet potato. Difference between sexual and asexual reproduction. Budding in yeast, fragmentation in spirogyra and spore formation in rhizopus. The various parts of flower and understand their function. The advantages of vegetative propagation. Pollination and its types. The process of fertilization and the process of formation of fruit and seed. The agents of seed dispersal and its importance. The difference in vegetative, asexual, sexual and cloning.</p>	
--	--	--	---	--	--	--

Fiber to Fabrics GENERAL INTRODUCTION OF	MEANING, USES, IMPORTANCE OF FIBRE SYNTHETIC AND NATURAL				1. COLLECTION OF DIFFERENT TYPES OF	
--	--	--	--	--	-------------------------------------	--

MEANING OF FIBRE	DIFFERENT TYPES OF ANIMALS THAT YIELD FIBRE (WOOL)				FIBRE USED IN DAY TO DAY LIFE	
TYPES OF FIBRE					2. PREPARE SCRAP BOOK CONTAINING DIFFERENT PICTURES OF ANIMALS THAT YIELD WOOL	
EXAMPLES OF SYNTHETIC AND NATURAL FIBRE	VARIOUS STEPS OF PROCESS OF FIBRE INTO WOOL					
ANIMAL FIBRE (WOOL)	DIFFERENT STAGES OF LIFE				3. .POWER POINT PRESENTATION AND COLLECT PICTURES OF THE STAGES OF THE LIFE HISTORY OF THE SILK MOUTH AND ARRANGE AND PASTE THE PICTURES IN THE CORRECT SEQUENCE IN CYCLIC FORM ON A CHART PAPER	
PROCESS OF OBTAINING SILK FROM COCOON	HISTORY OF SILK MOTH					
PROCESSING OF SILK	PROCESS OF OBTAINING SILK FROM A PILE OF COCOON					
HEALTH HAZARDS OF WOOL AND SILK INDUSTRIES	ANTHRAX OR SORTER'S DISEASE, RESPIRATORY DISEASES				4. POWER POINT PRESENTATION	

Water A Precious Natural Reports Availability of potable water on the earth. Forms of water Water cycle	Concept of water cycle in nature Reasons of depletion of water table. Develop understanding of the process of recharging of water table.	➤				<ul style="list-style-type: none"> ➤ Model/Chart of water cycle ➤ Visit to the nearby locality to know the present scenario of bawris . ➤ Model of rain water harvesting . 	
--	---	---	--	--	--	---	--

Ground water and water table Depletion of water table Rain map of India Water management Measures for saving water and Water wise habit	Learn to use water judiciously Water management					<ul style="list-style-type: none"> ➤ Show annual rainfall on the map of India. ➤ A play in the class to show the importance, shortage and future consequences of water. 	
---	--	--	--	--	--	---	--

Forest: Our Life Line	Students will be able to learn about the various types of animals and plants living inside the forests.				1.Scrapbook on the various animals and plants living in the forests.	
Types of plants and animals in forests						
Products from the forests	They will be aware of the various products we are getting from the forests.				Role play: A Journey through the forest	
Crown, canopy & understories					Activity: Formation of humus by digging a pit and putting vegetable waste.	
Floor of forests: humus	They will learn about humus and the importance of the forests in our					
Functions of the forests	lives.					
Oxygen & carbon dioxide balance						