

**First Term Curriculum**  
**Session: 2022-23**  
**Subject: Science**  
**Class: VII**

	<b>February/March</b>	<b>April</b>	<b>May</b>	<b>June/July</b>
<b>Content</b>	*Nutrition in Plants.  *Nutrition in Animals  *Fiber To Fabric	* Heat  *Acid,Bases and Salts	*Reproduction In Plants * Motion And Time *Weather,Climata And Adaptation	*Winds, Storms and Cyclone, Air (Collaboration with Social Sciences)
<b>Learning Outcomes</b>	<b>Students will be able to</b> -Classify the modes of nutrition in plants -Demonstrate and generalize the process of photosynthesis. -Improvise mineral replenishment in soil.  -Explain the process of digestion in human beings. -Compare the process of nutrition in various organisms like amoeba hydra and frog. -Describe the process of nutrition in ruminants.  -Explain the process of extraction of fiber into wool. -Describe the extraction of silk. -Interpret health hazards of people working in silk and wool industries.	<b>Students will be able to:</b> -Explain the concept of heat and use of a thermometer. -Solve numerical problems based on temperature scales. -Analyze various modes of heat transfer.  -Compare the properties of acids, bases and salts. -Analyze the use of Indicators to determine acidity and basicity of different substances. -Explain the importance of Neutralization reactions in daily life.	<b>Students will be able to:</b> -Differentiate between different modes of reproduction in plants i.e. asexual and sexual. - Describe the process of pollination and fertilization in plants. -Identify the methods of seed dispersal. -Discuss the measurement of time and Standard units. -Analyze various kinds of motion. -Calculate speed and Plot the distance-Time graph.  -Enlist the various factors affecting weather and climate. -Differentiate the adaptive features of animals living in various environments.	<b>Students will be able to:</b> -Describe the concept of wind, atmosphere and air pressure. - Differentiate between winds, storms and cyclones in relation to uneven heating of earth. -Compare the types of winds and rainfall.
<b>Skills</b>	<b>Knowledge/ Understanding/ Application/Analysis/ Evaluation</b>	<b>Knowledge/ Understanding/ Application/Analysis/ Evaluation</b>	<b>Knowledge/Understanding/ Application/Analysis/Evaluation</b>	<b>Knowledge/Understanding/ Application/Analysis/ Evaluation</b>
<b>Activities</b>	<b>Competency Skill based Activities/Experiential learning Activities:</b> <b>Lab activities:</b> *To show that leaves contain starch using alcohol,Iodine solution,test tube,beaker. *To demonstrate carbon dioxide and Sunlight is necessary for photosynthesis using destarched plants,alcohol,iodine solution and potassium hydroxide solution. *To observe parts of the compound microscope and method to prepare a temporary slide to show stomata in leaves. <b>Search Work:</b> Students will be asked to gather information about any three heterotrophic plants and tabulate data on the following heads:Name, Type and Characteristics.	<b>Competency Skill based Activities/Experiential learning Activities:</b> <b>Class-Activities:</b> *Students will be asked to read a clinical thermometer or laboratory thermometer during the class. * Students will solve numericals based on temperature scales. *Teacher will demonstrate conduction of heat with hot water and some articles like steel spoon, plastic scale, pencil etc. during the class. <b>Lab-Activities:</b> *To observe convection in liquids using water and potassium permanganate.	<b>Competency Skill based Activities/Experiential learning Activities:</b> <b>Class-Activities:</b> *Students will be asked to make a list of five different fruits and try to find out the different methods by which they are growth.Present the data in the form of a table. *Students will draw diagrams showing fertilization and pollination in flowering plants. <b>Project- Work:</b> Students will study vegetative propagation by growing a potato by using its piece with an eye or bud and Will write the procedure followed and their observations and comments in a notebook.  <b>Class-Activities:</b> *Students will measure and compare the length of desk and green board,oven etc .Using hand span and meter scale. *Students will be shown videos of objects having uniform and non uniform motion in the class and then they will try to show them on a graph. *Students will solve numericals based on topic speed.	<b>Competency Skill based Activities/Experiential learning Activities:</b> <b>*Class-Activities:</b> *Teachers will demonstrate effect of wind speed on air pressure using bottles, Paper and balloons students will be asked to note down their observations and conclusions *Students will observe the videos for the types of winds and rainfall.Then after they will make flow charts. *Students will draw diagrams to show layers of atmosphere And wind currents. <b>Search Activity:</b> Find out where cyclones have taken place recently and Tabulate data on following heads:Place,Speed and level.

	<p><b>Lab activity:</b> * To investigate the effect of saliva on the food using boiled rice or potato,iodine solution.</p> <p><b>Class-Activities:</b> *Students will discuss processes involved in nutrition in animals. *Students will draw diagrams of the human digestive system. *Students will give diagrammatic representations of the process of nutrition in hydra and amoeba. *<b>Search work:</b>Students will be asked to collect information(from the dentist or magazine) about the dental diseases,their causes and prevention.Then they will make a report on it.</p> <p><b>Class-Activities:</b> *Students will be asked to bring varieties of cloth pieces and then they will sort them on the basis of type and nature of fiber. * Students will make flowchart to show steps involved in processing of silk and wool.</p> <p><b>Project Work:</b> Students will make Powerpoint presentations on extraction of fiber into Fabric and They can choose any one fiber (Wool,Silk,Cotton and jute)of their choice.</p> <p><b>(Integrated with Art,IT and Geography)</b></p>	<p>*To observe heat transfer in solids using nails and metal rod.</p> <p><b>Class-Activities:</b> *Students will be asked to taste or touch a few common items like Lemon, Curd, Amla, vinegar,soap solution,shampoo and baking soda etc. they found in their kitchen during the class.and Then there will be discussion about acid bases and Salts. * The teacher will demonstrate how to make natural indicators with turmeric powder and China rose and then students will make indicators along with the teacher during the class and check acidity and basicity of common daily use items.</p> <p><b>Lab-Activity:</b> *To observe the acidic or basic nature of baking soda,Sodium hydroxide, Water and lemon by using pH paper strips and Standard pH chart. *To observe the change in colour of synthetic Indicators with various acidic and basic solutions. *To observe the reaction between an acid and base.</p> <p><b>Search Work:</b> Students will be asked to collect information about the medicines to treat acidity and make a report showing their chemical composition, working as well as effect.</p> <p><b>(Integration with IT,English) Mathematics)</b></p>	<p><b>Lab-Activity:</b> To measure the time-period of a simple pendulum using metal Bob and thread.and calculate time period.</p> <p><b>Write-up:</b> Students will be asked to collect information about time measuring devices used in ancient and modern times and prepare a brief write up.</p> <p><b>Project-Activity:</b> •Students will be asked to play cricket(minimum 4 to 5 overs) under the guidance of their physical education teacher.They will be asked to note down the distance of field and time taken for balling each ball during each over and then later will calculate speed. They will calculate average speed including all the overs played by them.After that Students will draw graph(Distance-Time) With the help of calculations they have done for the above activity.</p> <p><b>Search -Work:</b> Students will be asked to read magazines and books and collect information about various climatic conditions and animals living there.They will make a table in a notebook.</p> <p>*Students will be asked to collect the weather reports of seven days from the newspaper and prepare a table for the details.</p> <p><b>Research-Activity:</b> Students will be asked to talk to their friend or cousin living in a different state or country and gather information regarding average weather conditions and type of vegetation,animals there.Then they will compare it with their own place.</p> <p><b>(Integration with Art,English,History and Geography)</b></p>	<p><b>(Integration with IT and Art)</b></p>
<p><b>Assessments</b></p>	<p><b>Pen – Paper test, Observations, diagrams,Tabular information,collage,report,Concept map , HOTS , Quiz , reasoning questions. Value Based Questions,Search work,Model, C.W. and H.W.</b></p> <p><b>School Magazine(Competency Skill based Activity)</b></p> <p><b>Main Book: Cambridge Science Voyage</b></p>			

**FinalTerm Curriculum**  
**Session:2022-23**  
**Subject:Science**  
**Class: VII**

	August	September	October	November
<b>Content</b>	<p><b>*Transportation Animals and Plants.</b></p> <p><b>*Soil</b></p>	<p><b>*Respiration</b></p> <p><b>*Light</b></p>	<p><b>*Electric current and its effect.</b></p>	<p><b>*Physical And Chemical Changes</b></p> <p><b>*Forests:Our Lifeline</b></p>
<b>Learning Outcomes</b>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>-Describe Human Circulatory system and Excretory System along with functions.</li> <li>-Differentiate between Arteries, Veins and capillaries.</li> <li>-Analyze Importance of xylem and phloem in transportation of substances.</li> </ul> <p>-Enlist the factors affecting formation of soil</p> <p>-Describe the properties of soil.</p> <p>-Identify the causes of soil pollution and soil erosion and ways of prevention.</p>	<p><b>Students will be able to</b></p> <ul style="list-style-type: none"> <li>-Discuss the Mechanism of breathing in human beings.</li> <li>- Differentiate between aerobic and anaerobic respiration.</li> <li>-Identify respiratory organs of various animals and plants.</li> </ul> <p>- Describe the rectilinear propagation and reflection of light.</p> <p>- Compare the images formed by different types of mirror and lenses.</p> <p>-Comprehend dispersion of light and its application</p> <p>Competency Skill based Activities/Experiential learning Activities:</p>	<p><b>*Students will be able to:</b></p> <ul style="list-style-type: none"> <li>-Identify the electric components and their symbols</li> <li>-Describe the heating effect of current.</li> <li>-Discuss about electromagnets and their use in different devices</li> </ul>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>-Analyze the changes in their surroundings.</li> <li>-Explain characteristics of physical and chemical changes.</li> <li>-Compare the types of chemical reactions.</li> </ul> <p>-Enlist the importance of forest in our daily lives.</p> <p>-Explain the interdependence of plants and animals in the forest.</p> <p>-Recognize the measure of forest conservation.</p>
<b>Activities</b>	<p><b>Competency Skill based Activities/Experiential learning Activities:</b></p> <p><b>Class-Activities:</b></p> <ul style="list-style-type: none"> <li>*Students will be asked to make a model of stethoscope using a rubber sheet, tube and compare their heart beat at rest and after exercise.</li> <li>*Students will observe the process of osmosis in plants using potato,water and sugar solutions</li> <li>*Students will draw the diagrams of the human heart and kidney.</li> </ul> <p><b>*Report Writing:</b></p> <p>i)When a person suffers from chest pain,The doctor immediately suggests to take an ECG.So consult any Doctor (if possible through phone) or search about ECG. and make a brief report on it.</p> <p>ii)Students will be asked to explore lifestyle and its relation to heart problems faced by people in India. And try to find out difference in cases (earlier times and recent years)</p> <p><b>Class-Activities:</b></p> <ul style="list-style-type: none"> <li>*Students will be asked to get some soil in glass and then pour water in it, leave it for some time.Then they will observe horizons of soil during the class.</li> </ul>	<p><b>Competency Skill based Activities/Experiential learning Activities:</b></p> <p><b>Class-Activities:</b></p> <ul style="list-style-type: none"> <li>*Students will make a model of lungs using a bottle, balloons and rubber sheet and demonstrate the movement of diaphragm during breathing.</li> <li>*Students will observe the video of respiratory organs of animals like fish,frogs,insects and compare them with the help of diagrams.</li> <li>*Students will discuss the process of respiration in plants.</li> </ul> <p><b>Lab -Activity:</b></p> <p>To demonstrate that the air we breathe out contain carbon dioxide</p> <p><b>Search-Work:</b></p> <ul style="list-style-type: none"> <li>*Students will be asked to explore diseases of the respiratory system and write a report on it.</li> </ul> <p><b>Class-Activities:</b></p> <ul style="list-style-type: none"> <li>*Students will be asked to get one candle and pipe or chart and then they will perform an activity for rectilinear propagation of</li> </ul>	<p><b>.Competency Skill based Activities/ Experiential learning Activities:</b></p> <p><b>Class-Activities:</b></p> <ul style="list-style-type: none"> <li>*Students will draw open and closed circuits.</li> <li>*Students will show the heating effect of the current with the help of an electric circuit made by them.</li> </ul> <p>*Students will be asked to make two electromagnets using Iron nails, wires and cells, and paper clips under the guidance of the teacher. And will compare their strength.</p> <p><b>Search Work:</b>Trace the path of the invention of the bulb and its development. Make a Power-Point presentation.</p> <p><b>(Integration with IT and History)</b></p>	<p><b>Competency Skill based Activities/Experiential learning Activities:</b></p> <p><b>Class-Activities:</b></p> <ul style="list-style-type: none"> <li>*Students will be asked to keep various things like paper,Ice,boiled water,plastic bottles etc.They will perform activities with these materials such as crushing bottles,tearing paper into small pieces, observing water droplets on the cover of the pan and will discuss the type of changes they observed above.</li> <li>*Students will be asked to mix vinegar and baking soda.Teacher will burn paper and will show rusted iron piece.students will observe the activities and write their observations.</li> </ul> <p><b>Lab-Activities:</b></p> <ul style="list-style-type: none"> <li>*To demonstrate precipitation reaction with lead nitrate and potassium iodide solution.</li> <li>*To show that burning of magnesium produces magnesium oxide.</li> <li>*To demonstrate displacement reaction with copper sulphate and iron.</li> </ul>

	<p>* Students will measure the percolation rate of various types of soil using beakers soil sample and water.</p> <p>*Students will draw diagrams of stages of soil development and Soil profile.</p> <p><b>Research-Activity:</b></p> <p>*Students will be asked to take two flowering plants and grow one of them in clayey and other in sandy soil.They will observe them after one week and note down their observations. Students will also be asked to take pictures of plants on the first and last day and add their comment in data.</p> <p><b>(Integration with English and Art )</b></p>	<p>light during the class and will write their observation.</p> <p>*Students will place a lighted candle in front of the mirror and try to find characteristics of images formed by a plane mirror and note down their observations in a notebook.</p> <p>*Teachers will demonstrate image formation by various types of mirrors.</p> <p>*Students will be asked to get steel spoon .They will bring outer and inner side of spoon one by one near their face and look in to it and will compare the images formed by concave and convex mirror with plane mirror.</p> <p>*Students will be shown a video for images formed by lenses during the class and will try to draw ray diagrams.</p> <p><b>Lab-Activity:</b></p> <p>*Teacher will demonstrate the phenomenon of dispersion with the help of a prism.</p> <p><b>(Integration with Mathematics,Art and IT)</b></p>		<p><b>Role-Play:</b> Students will be divided into groups of five and play the role of different chemical reactions.</p> <p><b>Class-Activities:</b></p> <p>*Students will find out about "Van Mahotsava" and write in their notebook. Suggest the ways to make it more meaningful and popular.</p> <p>*<b>Declamation:</b>Students will prepare a speech on topics</p> <p>i) Conservation of Forests. ii) Importance of Forest.</p> <p><b>(Integration with English)</b></p>
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<b>Assessments</b>	Pen – Paper test, Observations, diagrams,Tabular information, report,Concept map , HOTS , Quiz , reasoning questions. Value Based Question,collage,Search work,Model, C.W. and H.W.			
	<b>Main Book:Cambridge Science Voyage</b>			