

GOOD WORD PUBLIC SCHOOL
ANNUAL CURRICULUM PLAN SESSION 2020 – 2021

CLASS: VII
SUBJECT: Science

Month & Working Days	Theme/ Sub-theme	Learning Objectives		Activities & Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	Behavioural (Application based)			
June – 24 days	1 Nutrition in plants 12 periods	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	The students will be able to: 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 CO ₂ into food and O ₂ . 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	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.	1. Students understand nutrition and modes of nutrition. 2. Students feel importance of nutrition. 3. They can analyze autotrophic and heterotrophic modes of nutrition. 4. They can draw the structure and explain role of stomata in plants. 5. They can understand parasitic and saprophytic mode of nutrition in plants. 6. They can	To prove leaves other than green in colour also undergo photosynthesis.

		<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 inleaves.</p> <p>10. Explain how non green plants undergo photosynthesis.</p>	<p>fertilizers and manure to increase soil fertility.</p>		<p>understand the symbiotic plants and insectivorous plants.</p> <p>7. Students know about Photosynthesis and essential conditions for photosynthesis in plants.</p> <p>8. They can draw structure and understand mode of nutrition in pitcherplant.</p> <p>9. Students know about the role of fertilizers and manure to replenish the fertility ofsoil.</p> <p>10. They can feel the importance of leguminous plants to increase nitrogen content in soil and of symbiotic relationshipand recycling of material/resources.</p>	
	2. Nutrition in animals	Students will be able	1. Learner will be able to prepare ORS solution to	1. Video watching of journey food in the alimentary canal of	1.Thestudents will be ableto	Students will be asked to label the

	12 periods	<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 diarrhea</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>various parts of human digestive system and write their functions.</p> <p>Parameters</p> <ol style="list-style-type: none"> 1. Labelling 2. Function of parts of digestive system.
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July-26 {24 days}	3. Fibre to fabric	Students will be able to know about fabrics and where it is obtained	Learner will understand the process which is undergoing for changing fibres in wool Students will understand rearing of silkworms	Discuss in the class: We should discourage rearing of silk worms to follow the ahimsa philosophy	Learner will understand the process which is undergoing for changing fibres in wool Students will understand rearing of silkworms	Worksheets
	4.Heat	Students will be able to- 1. Understand the difference between heat and temperature 2. Comprehend about the different modes of transfer of heat. 3. Explain the construction and working of different types of thermometer and thermosflask. 4. Understand the difference between the properties of different types of thermometer	Students will be able to Analyze the various modes of transfer of heat in various day to day activities Sensitize themselves towards energy conservation. Read the temperature using thermometer accurately. Select suitable materials according to the need of time Take safety measures before and after using the thermometer. Compare the properties of silver and dark colored objects.	1. Testing of conductivity of different materials like metal, wood and plastic 2. Demonstration of clinical, laboratory and digital thermometer followed by comparison of their features by the learners. 3. Converting one scale of temperature into another. 4. Making of a thermos flask and studying the various features of thermos flask. 5. Comparing the properties of silver polished and black colored objects.	. Students are aware about the difference between heat and temperature. 1. They know about the condition for the transfer of heat and identify the direction of heat on the basis of their temperatures. 2. Students know about the various modes of transfer of heat and can identify them in their daily life experiences. 3. Students know about the different types of thermometer.	
	14 periods					

<p>August (23 days)</p>	<p>5.Acids, bases and salts (10 periods)</p>	<p>Students will be able to: 1) Know about indicators and their types. 2) Identify acids and bases with the help of indicators. 3) Understand the properties of acids and bases. 4) Differentiate between acids and bases. 5) Express the chemical reaction of neutralization reaction.</p>	<p>Students will be able to: Recognize acid and base on the basis of taste. Test acid and base with the help of indicators. Use China rose, red cabbage, turmeric, bougainvillea, beet root as natural indicator. Appreciate and use lemon and tamarind to clean corrosive layer on utensils like brass and copper. Handle and store acids safely. Treat acidity in stomach and tooth decay. Treat ant bite at home 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 neutralization reaction between hydrochloric acid and base sodium hydroxide with the help of phenolphthalein indicator.</p>	<p>Students have learnt about: 1. Indicators and their types. 2. Action of indicators on acids and bases. 3. Differences between acids and bases. 4. Neutralisation reaction. 5. Chemical reaction between HCl and NaOH. 6. Use of neutralization 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. Parameters 1. Observation with indicators 2. Analysis of nature of substance</p>
	<p>Physical and chemical changes (12 periods)</p>	<p>The students will be able to: 1. Know about matter and its forms- pure and impure. 2. Distinguish between elements, compounds and mixtures.</p>	<p>The students will be able to: 1. Realize the importance of crystallization technique in making of sugar, salt, potash alum (phitkaricrystals) 2. Learn the reasons of rusting of iron. 3. Know chemical changes occurring in everyday life such as formation of curd</p>	<p>Activity 1: To study the following changes and record the observation Melting of ice Crystallizations of sugar Sublimation of camphor Boiling of water Chopping of water Dissolving sugar in water Activity 2: The burning of</p>	<p>2. The students have learned the definition and properties of physical and chemical change. 3. The students have learned the differences between physical</p>	<p>Activity- Identification of physical and chemical changes through a power point presentation Rubrics Identification of type of change Reason for</p>

		<p>3. Draw the symbols of various known elements and write the latin names of some elements.</p> <p>4. Tell the atomicity of the given element in a compound.</p> <p>5. Define physical and chemical changes.</p> <p>6. Understand the properties of physical and chemical changes.</p> <p>7. Differentiate between physical and chemical change.</p> <p>8. Classify the changes as physical</p>	<p>from milk, souring of milk, burning of crackers etc</p> <p>4. Prevent iron articles at home from rusting by simple methods such as oiling /painting or greasing.</p> <p>5. Use vinegar and baking soda to clean tiles at home.</p> <p>6. Appreciate alloying, galvanization and electroplating methods to prevent corrosion of iron.</p>	<p>magnesium ribbon</p> <p>Activity 3: Displacement reaction between iron nail and copper sulphate solution.</p> <p>Activity 4: Reaction of vinegar with baking soda</p>	<p>and chemical change.</p> <p>4. The students have learned to classify the changes observed in our day to day life as physical or chemical change.</p> <p>5. The students have learned about the displacement reaction between iron nail and copper sulphate solution.</p> <p>6. The students have learned the chemical reactions taking place during the burning of magnesium ribbon.</p>	<p>classification into physical and chemical change.</p>
<p>September (24 days)</p>	<p>Weather, climate and adaptation</p> <p>(12 periods)</p>	<p>Students will be able to-</p> <p>1. Know the difference between climate and weather.</p> <p>2. Make aware</p>	<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>	<p>1. Recording of weather report from a newspaper for one week.</p> <p>2. A student will be asked to mark following place in world map- Canada, Greenland, Iceland, Norway, Sweden, Finland, Alaska, (polar region)</p>	<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>Winds, storms and Cyclones</p> <p>(12 periods)</p>	<p>Students will be able to-</p> <ol style="list-style-type: none"> 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. 	<p>Students will be able to-</p> <ol style="list-style-type: none"> 1. Relate the formation of thunderstorm and cyclone with the variation in air pressure. 2. Adopt safety measures during cyclone and thunderstorm. 	<ol style="list-style-type: none"> 1. Activities to show that- <ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 rain fall. 	<p>Drawing of flowchart showing the various steps involved in the formation of cyclone.</p> <p>Rubrics</p> <ol style="list-style-type: none"> 1. Correct sequencing of the events
<p>October 21 days</p>	<p>Soil</p>	<p>The students will be able to</p> <ol style="list-style-type: none"> 1. Understand about components of soil. 2. Develop the ability to analyze different types of soil like sandy, clayey and loamy. 3. Analyze various layers of soil 	<p>Students will be able to-</p> <ol style="list-style-type: none"> 1. Avoid soil pollution by not throwing the garbage in the soil. 2. Understand why only clayey soil is used for making matkas and surahis. 3. Plant more and more trees to prevent soil erosion. 4. Relate soil structure and properties of soil with the type of crops. 	<p>I) Activity (to introduce the lesson)</p> <p>Activity 1: Video demonstration of process of weathering of rocks.</p> <p>Activity 2: Demonstration of soil profile and explanation of different layers of soil.</p>	<ol style="list-style-type: none"> 1. Students are aware about the various components of soil. 2. They can analyze different types of soil on the basis of their availability and properties. 	<p>To calculate the percolation rate and the rate of absorption of given sample of soil.</p>

	Respiration in living organisms	<p>Students will be able to</p> <ol style="list-style-type: none"> 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 	<p>Students will be able to</p> <ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 	<p>Expected Learning Outcome-</p> <ol style="list-style-type: none"> 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. 	<p>Activity: Counting of breathing rate at normal stage, after a brisk walk for ten minutes, after running fast 100 m.</p>
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<p>November (23 days)</p>	<p>Transportation in animals and plants</p>	<p>Specific Objectives 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 2. Students will be able to understand the components and functions of blood, calculate pulse rate,</p>	<p>Students will be able to- 1. Know the importance of iron rich food in order to increase the percentage of hemoglobin in blood. 2. Know how a stethoscope records the heartbeat. 3. Aware how urinary system removes out waste from the body. 4. They will be able to analyze how osmosis and transpiration are important for transport of water and minerals in highly differentiated plants. 5. Understand how food is transported in tall trees.</p>	<p>1) Video on human circulatory system. 2) To measure the heart beat rate and pulse rate. 3) To make a model of stethoscope.</p>	<p>1. Students know about the various components of blood and their functions. 2. They can calculate the pulse rate and feel the heartbeat. 3. They know the structure of heart and its function. 4. They are aware about the fact that the wastes have to be eliminated out from the body as they are toxic. 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:- Parametres: Construction Application Skill Synthesis</p>
	<p>15.Reproduction in plants</p>	<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 2) Demonstration of various parts of the flower 3) Student activity- Growing of cactus by collecting pieces of different kinds of cacti. 4) Collection of flowers of different plants and grouping them as unisexual and bisexual flowers.</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>December (24 days)</p>	<p>8. Motion and Time (12 periods)</p>	<p>Students will be able to</p> <ol style="list-style-type: none"> 1. Explain uniform and non uniform motion 2. Understand the concept of speed and average speed 3. Explain about the dependant and independent quantities and how they are used in the graph. 4. Explain the various 	<p>Students will be able to</p> <ol style="list-style-type: none"> 1. Evaluate speed and average speed on the basis of given information. 2. Convert the various systems of units of distance and time according to the need and thus will emphasize on uniformity. 3. Interpret the available data in the form of a graph. 4. Place dependant and independent physical quantities correctly in the graph. 	<ol style="list-style-type: none"> 1. Activity- Making of simple models of sundial, hour clock/ sand clock, simple pendulum with the help of waste materials 2. Activity- Finding out of time with the help of models made by the students. 3. Activity: Demonstration of simple pendulum and calculation of time period with the changing length of simple pendulum. 	<ol style="list-style-type: none"> 1. Students will be enlightened with the importance of time and the need of accuracy. 2. They will be acknowledged with uniform and non-uniform motion. 3. They can evaluate the speeds of different moving objects with accuracy. 	<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>Electric current and circuits</p>	<p>Students will be able to-</p> <ol style="list-style-type: none"> 1. Understand the various components of electric circuit and draw their symbols. 2. Understand why heat is produce when an electric is passing through a wire. 	<p>Students will be able to</p> <ol style="list-style-type: none"> 1. Know the importance of safety fuse and M.C.B. 2. Understand why CFL should be preferred instead of electric bulb. 3. Understand how cranes work. (Electromagnetic effect) 	<ol style="list-style-type: none"> 1. To draw the symbols of various electrical components 2. Activities to show the heating effect of electric current 3. Making of an electromagnet 	<ol style="list-style-type: none"> 1. Students know that electric current produces heating effect and magnetic effect. 2. They are aware about the advantage of CFL over electric bulb. 	<p>Making of electric circuit by using battery by connecting two to three cells in series and other components of circuit.</p>

<p>January (19 days)</p>	<p>Light (11 periods)</p>	<p>Students will be able - 1. To enable students to obtain images of different objects by reflecting light on different surfaces.</p>	<p>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.</p>	<p>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.</p>	<p>1. Students know the various conditions required for regular and irregular reflection.</p>	<p>Identification of concave and convex mirror and lens and applications.</p>
<p>February (24 days)</p>	<p>Water a precious resources</p> <p>Forest our lifeline</p>	<p>Students will learn about water and uses of it. Students will learn about the water cycle and water management.</p> <p>Students will learn about what is forest and importance of forest</p>	<p>Students will be able to understand how water became a precious resources and how to sustain it.</p> <p>Students will learn about what is deforestation and afforestation.</p>	<p>Discuss in a class about the steps for proper management of water to avoid water crisis.</p> <p>Discuss in a class about the importance in forest about saving trees.</p>	<p>Students learnt about water and uses of it. Students will learn about the water cycle and water management.</p> <p>Students learnt about what is deforestation and afforestation.</p>	<p>Make a list of activities by which you can save water.</p> <p>Make posters highlighting the importance of forest and saving trees</p>

<p>March (12 days)</p>	<p>Waste water story</p>	<p>Students will be able -</p> <ol style="list-style-type: none"> 1. Recognize the importance of water for the survival of life 2. Value water as an important renewable resource 3. Know the terms sewage, sewers, contaminants and sewage treatment 	<p>Students will be able –</p> <ol style="list-style-type: none"> 1. To choose between the alternatives as the best path for self 2. To impart an active role in keeping the environment clean. 	<p>Activity 1</p> <p>Discuss in a class about health hazards which is caused due to open drain and stagnant water.</p>	<ol style="list-style-type: none"> 1. They will understand the steps associated with the purification of sewage. 2. They will be able to compare and suggest the best methods of ancient and modern sewage practices. 	<p>Making of flowchart showing the various steps involved in waste water treatment plant</p>
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