

CHOITHRAM SCHOOL, MANIK BAGH, INDORE
ANNUAL CURRICULUM PLAN SESSION 2017 – 2018

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)			
I st TERM						
June- 16	1. 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 thermos flask. 4. Understand	Students will be able- 1. To identify the self potential and redirecting it for positive purpose. 2. To sensitize towards energy conservations. 3. To select suitable materials according to the need of time. 4. To take safety measures before and after using the thermometer.	1. Dropping of pins attached to a metallic scale by wax on heating- Conduction 2. Movement of potassium permanganate crystals in water on heating- Convection 3. Difference in heating of black coloured and silver polished containers- Radiation	1. Students are aware about the difference between heat and temperature. 2. They know about the condition for the transfer of heat and identify the direction of heat on the basis of their temperatures. 3. Students know about the various modes of transfer of heat and can identify them in their daily life experiences. 4. Students know about the different types of	Activity- Measurement of temperature by clinical and laboratory thermometer. Parameters- 1. Observation 2. Analysis

		<p>the difference between the properties of different types of thermometer</p> <p>5. Analyze the various modes of transfer of heat in various day to day activities</p>			<p>thermometer.</p> <p>5. Students now select colour of clothes according to season. Thus they give more preference to comfort rather than fashion.</p> <p>4. They use thermos flask in order to maintain the temperature of liquid kept in it.</p> <p>5. They can read the temperature from different types of thermometer.</p> <p>6. Students can select thermometer on the basis of purpose of use.</p>	
June	2. Nutrition in plants	<p>Students will be able to-</p> <p>1. Define nutrition and understand the importance of nutrition.</p> <p>2. Classify</p>	<p>Students will be able to</p> <p>1. Apply (symbiotic relationship) give and take relationship in their day to day life like in lichen.</p> <p>2. Discourage parasitic mode of survival i.e. the</p>	<p>1: To show that sunlight is necessary for photosynthesis with the help of leaves kept deprived of sunlight for about 2-3 days.</p> <p>2: To show the presence of starch in leaves with the help of iodine test.</p>	<p>1. Students understand nutrition and modes of nutrition.</p> <p>2. Students feel importance of nutrition.</p>	<p>To study the conditions required for photosynthesis</p> <p>Rubrics</p> <p>1. Observation</p> <p>2. Analysis</p>

		<p>modes of nutrition.</p> <p>3. Predict the modes of nutrition in different organism.</p> <p>4. Distinguish between autotrophic and heterotrophic modes of nutrition.</p> <p>5. Illustrate the role of stomata in plants.</p> <p>6. Understand parasitic and saprophytic mode of nutrition in plants.</p> <p>7. Understand the symbiotic and insectivorous mode of nutrition in plants.</p> <p>8. Illustrate how nutrients are</p>	<p>one way relationship like parasitic plants.</p> <p>3. Develop the tendency to reuse the substances (best out of waste) like plants convert excess CO_2 into food and O_2.</p> <p>4. Show sensitivity and concern towards plants.</p> <p>5. Practice the best utilization of available resources like plants.</p> <p>6. Apply the concept of recycling of available material /waste substances.</p> <p>7. Apply the concept of replenishing the nitrogen content in soil by growing leguminous plants in their garden</p> <p>8. Appreciate the role of fertilizers and manure to increase soil fertility.</p>		<p>3. They can analyze autotrophic and heterotrophic modes of nutrition.</p> <p>4. They can draw the structure and explain role of stomata in plants.</p> <p>5. They can understand parasitic and saprophytic mode of nutrition in plants.</p> <p>6. They can 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 pitcher plant.</p> <p>9. Students know</p>	
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		replenished in the soil. 9. Describe the photosynthesis in plants. 10. Draw the structure of stomata in plants. 11. Draw the structure of picture plant. 12. Demonstrate the presence of starch in leaves.			about the role of fertilizers and manure to replenish the fertility of soil. 10. They can feel the importance of leguminous plants to increase nitrogen content in soil and of symbiotic relationship and recycling of material/resources.	
July-24	1. Physical and chemical change 2. Soil 3. Time and motion	Students will be able to- 1. Define physical and chemical changes. 2. Understand the properties of physical and chemical changes. 3. Differentiate between physical and	Students will be able to- 1. Apply crystallization method to obtain pure crystals of (misri) sugar from its impure saturated solution. 2. Prevent iron articles at home from rusting by oiling /painting or greasing. 3. Use vinegar and baking soda to clean tiles at home. 4. Appreciate alloying, galvanization and	1. Burning of magnesium ribbon 2: Displacement reaction of iron nail and copper sulphate solution. 3: Reaction of vinegar with baking soda	1. The students know the properties of physical and chemical change. 2. The students have learned the differences between physical and chemical change. 3. The students can classify the changes observed in our day to day	Activity- Identification of physical and chemical changes. Rubrics 1. Observation 2. Analysis Unit test

		<p>chemical change.</p> <p>4. Classify the changes as physical or chemical change</p> <p>5. List out physical and chemical changes which they observe in their surroundings.</p> <p>6. Understand the displacement reaction between iron nail and copper sulphate solution.</p> <p>7. Describe burning of magnesium ribbon as a chemical change.</p> <p>8. Demonstrate and write the reaction of vinegar with</p>	<p>electroplating methods to prevent corrosion of iron.</p>		<p>life as physical or chemical change.</p> <p>4. The students know that what happens when iron nail is put dipped in copper sulphate solution.</p> <p>5. The students know the chemical reactions taking place during the burning of magnesium ribbon and vinegar with baking soda.</p> <p>6. The students can test of CO₂ gas with the help of lime water and nature of magnesium oxide as acid or a base with the help of litmus paper.</p> <p>7. The students are aware about rusting of iron and the essential conditions required for rusting</p> <p>8. The students can apply various</p>	
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		baking soda. 9. Demonstrate the test of CO ₂ gas with the help of lime water. 10. Test the nature of magnesium oxide as acid or a base. 11. Illustrate rusting of iron as a chemical change. 12. Understand the essential conditions required for rusting of iron. 13. Define the term galvanization 14. Demonstrate the crystallization of copper sulphate from its saturated solution.			methods to prevent corrosion of iron and method of crystallization to obtain pure crystals of sugar or salt from their impure saturated solution 9. They are aware about the uses of vinegar and baking soda in our day to day life.	
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July	3. Nutrition in animals	<p>Students will be able - 1.To discuss the components of food and food sources</p> <p>2.To differentiate between mode of nutrition in plants and animals</p> <p>3.To comprehend that nutrition is the sum total of all processes from ingestion to egestion</p> <p>4.To understand role of various organs in the process of nutrition</p> <p>5.To understand the Journey of food in the alimentary canal and different steps of nutrition</p>	<p>Students will be able to</p> <p>1. Appreciate the quality of oneness in diversity around.</p> <p>2. Inculcate good qualities of others and ignore the bad qualities.</p> <p>3. Understand that at some stages of life, one needs to take a helping hand for smooth going.</p> <p>4. 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>	<p>1. Video watching of journey food in the alimentary canal of humans and discussion.</p> <p>2. To identify the taste buds on one's own tongue by tasting different raw food materials.</p>	<p>1. Students know that food gives nourishment to the body with nutrients primarily to serve the purpose of providing energy and materials required for the growth of the organism.</p> <p>2. They can classify that some nutrients such as carbohydrates, proteins and fats are required in bulk amount by the organisms. Vitamins and minerals are required in trace amounts, but play a key role in the metabolism of the organism.</p> <p>3. They can illustrate journey of food in digestive system.</p> <p>4. They can understand the concept of cud</p>	<p>The students will be asked to enact a role of a particular organ of human digestive system based on the following steps</p> <ol style="list-style-type: none"> 1. Introduction 2. Location 3. Structure 4. Role in digestion 5. What will happen if you stop working? 6. Diseases <p>Rubrics</p> <ol style="list-style-type: none"> 1. Accuracy 2. Analysis
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		(ingestion, digestion, absorption, assimilation, egestion) 6.To understand and analyze the process of digestion in grass eating animals and unicellular organisms			chewing 5. They can relate cud chewing with the structure of stomach 6. Student scan analyze the digestive systems of human non ruminant and ruminant 7. They can interpret and describe the steps of nutrition in amoeba.	
July	4. Soil	Students will be able to 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 (Soil profile). 3. Understand	Students will be able to- 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.	1. To collect various samples of soil and find out whether they feel different? 2. Check the water holding capacity of soil using tissue paper. 3.To find percolation rate of given types of soil samples	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. 3. They are aware about the causes of soil pollution and soil erosion. 4. They know that the properties of soil decide the	Students will find out the water holding capacity of different types of soil. Rubrics 1. Observation 2. Accuracy

		properties of soil			type of crop grown in it. 5. They know that clayey soil is most suitable for making matkas and surahis.	
August- 22	5. Water	Students will be able to- 1. Recognize the importance of water for the survival of life 2. Value water as an important renewable resource 3. Describe sources of water - its management 4. Analyse the availability of water for use and follow the conservation methods	Students will be able 1. To realize the importance of sustenance of living and nonliving things around. 2. To develop sensitivity towards environment for conservation 3. To inculcate alertness in self prior to conduction of any activity.	1. Poster making and slogan writing competition on the theme <u>Water is precious. Save it.</u> 2. Conduct a survey at home to find out how much water individuals and families use on a per day basis and then calculate per week/ month/ year. Analyze a family's water use with a focus on ways to reduce water consumption. The class may be divided into groups and each group may be asked to list out the different materials / objects which contain water.	1. Students are able to identify the uses of water. 2. Students are able to understand the use of water in life. 3. They are able to understand and appreciate the fact that water is an important renewable resource. 4. They can discover that there is a lot of water in the world, but not very much of it can be used as drinking water and for other useful needs. 5. They can follow the different sustainable water harvesting	

					techniques. 6. They can create awareness to use water judiciously.	
August	6. Waste water story	Students will be able - 1. To know the terms sewage, sewers, contaminants and sewage treatment 2. To understand the importance of drainage systems 3. To understand the various steps involved in the sewage treatment 4. To provide measures for effective sanitation.	Students will be able – 1. To choose between the alternatives as the best path for self 2. To impart an active role in keeping the environment clean.	1. Listing of the types of wastes formed on daily basis at home and list it as kitchen waste, sewage, dry waste, bio - waste, E – waste and the diseases associated with the waste water. 2. Video https://www.youtube.com/watch?v=f6Uu8CpOn-0 3. Design of waste water treatment plant animation 4. Visit to Water Treatment Plant in the school campus.	1. Learners will understand the types of wastes released due to different activities. 2. They will understand the steps associated with the purification of sewage. 3. They will be able to compare and suggest the best methods of ancient and modern sewage practices. 4. Learners will create awareness amongst others about the importance of the proper drainage system.	Making of flowchart showing the various steps involved in waste water treatment plant Rubrics 1. Sequence 2. Accuracy of steps
September-15	7. Time and motion	Students will be able to- 1. Explain uniform and non uniform	Students will be able to 1. Evaluate speed and average speed on the basis of given information.	1. Activity: Demonstration of a video showing the history of measuring time http://www.youtube.com/watch?v=Ou6MkIvKOo 2. Making of simple models of sundial,	1. Students will be enlightened with the importance of time and the need of accuracy.	To find the time period with the help of a simple pendulum

		<p>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 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>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 and the need of accuracy.</p> <p>- Analyze the technological advancements and appreciate them.</p>	<p>hour clock/ sand clock, simple pendulum with the help of waste materials.</p> <p>3. Finding out of time with the help of models made by the students.</p> <p>4. Plotting of distance-time graph on the basis of available data.</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 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>Rubrics</p> <p>1. Observation</p> <p>2. Calculation</p>
September	8. Forests	<p>Students will be able to-</p> <p>1. Understand components of forest like plants</p>	<p>Students will be able to-</p> <p>1. Develop awareness towards nature and animals.</p> <p>2. Develop sensitivity towards conservation of</p>	<p>1. Visit to a Park to observe different shapes of plants and their crowns.</p> <p>2. Video showing different layers of forest.</p>		<p>Drawing of any three food chains existing in a forest.</p> <p>Rubrics</p> <p>1. Sequencing</p> <p>2. Inclusion of all</p>

		animals, decomposers, air, water and soil. 2. Understand Structure of forest. 2. Understand role of forest in maintaining the environmental balance.	forests. 3. Realize the importance of every living organism through the food chain.			the steps.
II nd Term						
October 10	9. Acids, bases and salts	Students will be able to- 1. Know about nature of acid, properties of acids and bases and their sources. 2. Know about the indicators, types of indicators. 3. Study the action of different indicators on acids and bases 4. Know about neutralization	Students will be able to 1. Understand the importance of neutralization reactions in day to day life such as use of antacids, use of acids and bases in soil treatment and factory wastes. 2. Understand why a stain of turmeric turns red on washing with soap.	1. To observe the action of turmeric indicator, litmus indicator, phenolphthalein indicator, methyl orange indicator, china rose indicator on acids and bases. 2) To study the neutralization reaction between HCl and NaOH using phenolphthalein indicator.	1. Students can test the acidic, basic or neutral character of various substances with the help of indicators. 2. They can make their own indicators. 3. They know that acids and basis neutralize each other. Thus they can apply the various materials according to the requirement like calamine solution is used to	Subject enrichment in the form of practical. Rubrics 1. Experiment 2. Record 3. Viva

		reaction. 5. Identify acids and bases with the help of indicators.			neutralize formic acid present in ant bite whereas they can use organic material to neutralize the soil when it becomes too basic.	
November 23	10. Respiration in living organisms	Students will be able to - 1. Understand the anaerobic and anaerobic respiration. 2. Know about the organs in human respiratory system. 3. Understand the mechanism of inhalation and exhalation. 4. Learn about the breathing of other organisms.	Students will be able to- 1. Find out the breathing rate. 2. Understand the reason for muscle cramps during heavy exercise. 3. Record the change in the size of chest taking place during inhalation and exhalation	1. Explanation of human respiratory system through chart and video. 2. To test the presence of carbondioxide in the exhaled air. 3. Measurement of breathing rate.	1. Students know about the aerobic and anaerobic respiration. 2. They know the mechanism of inhalation and exhalation. 3. They can record the change in chest size while inhalation and exhalation. 4. They will apply warm water in case of muscle cramps in order to get relief.	Assessment through unit test
November	11. Electric current and circuits	Students will be able to- 1. Understand the various components of	Students will be able to 1. Know the importance of safety fuse and M.C.B. 2. Understand why CFL should be preferred instead of electric bulb.	1. To draw the symbols of various electrical components 2. Activities to show the heating effect of electric current 3. Making of an electromagnet	1. Students know that electric current produces heating effect and magnetic effect. 2. They are aware	Making of electric circuit by using battery by connecting two to three cells in series and other

		<p>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 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>9. Explain the</p>	<p>3. Understand how cranes work.(Electromagnetic effect)</p>		<p>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 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>	<p>components of circuit.</p> <p>Rubrics</p> <p>1. Construction of circuit</p> <p>2. Viva</p>
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		working of electric bell.				
November-December December-20	12. Transportation in animals and plants	Students will be able to- 1. Understand the components and functions of blood. 2. Calculate pulse rate. 3. Understand and draw the structure of heart. 4. Learn the transportation of materials in plants and animals.	Students will be able to- 1. Know the importance of iron rich food in order to increase the percentage of haemoglobin in blood. 2. Know how a stethoscope records the heartbeat. 2. Aware how urinary system removes out waste from the body. 4. Understand how water is transported in tall trees.	1) Video on human circulatory system. 2) To measure the heart beat rate and pulse rate. 3) To make a model of stethoscope.	1. Students know about the various components of blood and their functions. 2. They can calculate the pulse rate and feel the heart beat. 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 role of kidney and other parts involved in excreting wastes in human beings and other animals.	Assessment through unit test
December	13. Light	1. To enable students to obtain images of different objects by reflecting light	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	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	1. Students know the various conditions required for regular and irregular	Identification of concave and convex mirror and lens and applications. Rubrics

		<p>on different surfaces.</p> <p>2. To make them understand regular and irregular reflection.</p> <p>3. Formation of images by concave and convex lenses.</p> <p>4. Characteristics of the image formed by changing the distance from the lens.</p> <p>5. White light as a mixture of seven colours.</p> <p>6. Formation of rainbow</p>	<p>lenses and mirrors used in everyday life.</p>	<p>concave and convex lenses</p> <p>4. The size of the image changes with the change in the distance of the object from lens.</p> <p>5. Dispersion of light through prism</p>	<p>reflection.</p> <p>2. They are acquainted with the properties and 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>	<p>Identification</p>
January-23	14. Fibre to fabric	<p>Students will be able to-1. Know Variety of animals that yield wool.</p> <p>2. Understand rearing of sheep and processing of</p>	<p>Students will be able to-</p> <p>1. Reason out why he does not get hurt when he goes for a hair cut.</p> <p>2. Understand how a woolen sweater keeps him warm in winter.</p> <p>3. Apply burning test to identify between pure silk and</p>	<p>1) To demonstrate the specimen of Life cycle of silk worm.</p> <p>2) To identify the pure silk and artificial silk by burning their threads.</p> <p>3) Pasting of various silk fibres in the scrap book.</p>	<p>1. Students are familiar with the various wool yielding animals.</p> <p>2. They know about the various steps involved from rearing of sheep to</p>	<p>1. To draw the sketch of silk worm and explanation of various stages.</p> <p>Rubrics</p> <p>1. Sequence</p> <p>2. Relevancy</p>

		wool. 3. Understand life cycle of silk worm and sericulture. 4. Identify the pure silk and artificial silk.	artificial silk.		processing of wool. 3. They can understand the lifecycle of silk worm. 4. They can identify the pure silk and artificial silk by applying various tests.	
January	15. Weather, climate and adaptation	Students will be able to-1. Understand weather, climate and types of climate. 2. Know variety of climate found in Polar region, Tropical rainforest and desert climate. 3. Explain how living organisms adapt themselves in the different regions.	Students will be able to 1. Interpret the weather report from a newspaper. 2. Understand why weather changes so frequently and trace out the source of weather change. 3. Importance of adaptation in adverse conditions.	1. Recording of weather report from a newspaper for one week. 2. showing images of Red-eyed frog, lion tailed macaque, polar bear, penguin	1. Students can distinguish between weather and climate. 2. They can categorize the various elements that bring about change in climatic conditions. 3. They are aware about the variations found in climate of different parts of India. 4. They realize the importance of adaptation for survival of a particular organism in a particular region.	1. Marking of Polar and Tropical regions on outline map of world and listing of animals dominant in this region. Rubrics 1. Mapping of location 2. Mapping of animals

February-20	16. Winds, storms and cyclones	Students will be able to- a) Demonstrate that air exerts pressure b) Demonstrate that air expands on heating and contracts on cooling c) Explain the formation of monsoon winds. d) 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.	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.	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
February-March March-20	17. Reproduction in plants	Students will be able to understand 1. Asexual reproduction in plants 2. Artificial methods of vegetative propagation 3. Sexual	Students will be able to- 1. Grow potato, ginger and rose plant using the various techniques of vegetative propagation. 2. Express the gratitude towards the various agents of	1) Demonstration of vegetative propagation in potato, ginger, and cutting in rose and bryophyllum leaf. 2) Demonstration of various parts of the flower 3. Student activity- Growing of cactus by collecting pieces of different kinds of cacti.	1. Students know about the various techniques involved in asexual reproduction in plants. 2. They are aware about the advantages of vegetative	1. Listing of any five fruit bearing plants along with the agents of seed dispersal and the part which helps in dispersal.

		reproduction in plants 4. Structure of flower 5. Process of fertilization and seed dispersal	seed dispersal for the growth of different varieties of plants.		propagation over sexual reproduction. 3. They know the various parts of china rose and their importance. 4. they feel the importance of various agents of seed dispersal which ultimately increases the number of crops and variety.	
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