BHARTIYA VIDYA MANDIR SENIOR SECONDARY SCHOOL SECTOR-39, CHANDIGARH ROAD, LUDHIANA

SYLLABUS OF CLASS VII

BOOK: NCERT SUBJECT : SCIENCE SESSION :2024-25

| Month | Unit/Chapter/Tonic Learning Objectives Resources/Art-integarted pedagogy | | | | Learning Outcomes/ | |
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| Month | Unit/Chapter/Topic | Learning Objectives | E-Re | esources | Skills learnt by students | |
| | CH-1 NUTRITION IN PLANTS | LEARNERS WILL BE ABLE TO: *Define & differentiate Autotrophic Nutrition Heterotrophic nutrition. *Compare -Saprotrophic & Parasitic nutrition. *Cite examples of Insectivorous plants *Appreciate the importance of Symbiotic relationship in nature *Appreciate & analyse the process of photosynthesis. *Understand the ways by which soil gets replenished. | *Picture of photosynthesis *Discussion *Task Assignment *Brainstorming *Questioning *Contextual teaching and learning *Lab Activity — To test the presence of starch in leaves using iodine. *Chalk and Board | https://www.youtube.com/watch? v=MN5x7Fi116g | Students now know about the modes of nutrition, understand the requirement of photosynthesis, know about the insectivorous plants, symbiosis, parasites and saprotrophs SKILLS: *Scientific thinking and temper *Sensitivity towards environmental concerns *Skill of observation(s), inquiry, experimentation | |
| APRIL | CH-2 NUTRITION IN ANIMALS | LEARNERS WILL BE ABLE TO: *Know the main steps involved in animal nutrition. *identify various parts of human digestive system. *Describe the process of nutrition in humans. * Understand the process of nutrition in ruminants & amoeba. | *Model of human digestive system *Amoeba cell slide *Task Assignment *Contextual teaching and learning *Chalk and Board | https://www.youtube.com/watch? y=u4VbdVpUCfg | 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. They can classify that some nutrients such as carbohydrates, proteins and fats are required in bulk amount by the organism. Vitamins and minerals are required in trace amounts, but play a key role in the metabolism of the organism. They can illustrate journey of food in digestive system. They now understand about the process of rumination. SKILLS: *Observation* | |
| МАУ | СН-3 НЕАТ | LEARNERS WILL BE ABLE TO: *Define heat & temperature. *Know the effects of heat & classify them as physical & chemical changes. *Differentiate & appropriately use laboratory & clinical thermometer *Draw land & sea breeze *understand various ways of transfer of heat & know their applications in day to day life | *Contextual teaching and learning *Chalk and Board *Concept Mapping *Task Assignment *Diagrams of sea breeze and land breeze *Lab Activity- Demonstrate the process of conduction and convection | https://www.yo.utube.co.m/live/S_pfy8hnv.MCg?si= f2PLgOZ_Hv3qyl7-70 | Students are aware about the difference between heat and temperature, about the various modes of transfer of heat and can identify them in their daily life experiences. Students now select colour of clothes according to season. SKILLS: **Observation,** **Experimentation** **Conclusion** **Scientific thinking and temper | |
| JUNE | SUMMER VACATIONS | | | | | |
| JULY | CH-4 ACIDS,BASES AND SALTS | LEARNERS WILL BE ABLE TO: *Cite examples of common Mineral acids, Organic Acids, Bases & Salts. *Define and differentiate between Acids and Bases *Identify acids & bases using various indicators like litmus paper, Turmeric, Juice phenolphthalein. *Define salts & classify them as basic, acidic or neutral salts | *Interaction and discussion *Chalk and Board *Flow chart *Demonstration method *Task Assignment *Lab Activity- 1. To show that saline water conducts electricity. 2. To test Acids and Bases using various indicators. | https://www.youtube.com/watch? y=7YPRx8UIVIY | 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 neutralize formic acid present in ant bite whereas they can use organic material to neutralize the soil when it becomes too basic. SKILLS *Experimentation *Observation *Conclusion *Scientific thinking and temper *Skill of inquiry | |
| JULY | CH-5 PHYSICAL CHANGES AND CHEMICAL CHANGES | LEARNERS WILL BE ABLE TO: *learn about physical and chemical changes *understand characteristics of physical and chemical changes *understand the process of rusting of iron and methods of its prevention *study crystallization and its applications | *Interaction and discussion *Chalk and Board *Concept mapping *Lab Activity-To observe the reaction between Copper sulphate and iron fillings. | https://www.youtube. com/live/9eHacFISa-s2 si=LWRr0tXCXa_00C3V_ | The students know the properties of physical and chemical change. The students know the chemical reactions taking place during the burning of magnesium ribbon and vinegar with baking soda. 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 limus paper. The students are aware about rusting of iron and the essential conditions required for rusting SKILLS: *Thinking skills *Logical reasoning *Problem solving *Working in group *Scientific attitude | |

| AUGUST | CH-6 RESPIRATION IN ORGANISMS | LEARNERS WILL BE ABLE TO: *Define & understand the term respiration *Differentiate between aerobic & anaerobic respiration *Compare the process of respiration in Plants and Animals. | *Interaction and discussion *Chalk and Board *Flow chart *Demonstration method *Working model to show mechanism of breathing in human. | https://youtu.be/cDNrxiAUeGI? si=ell.UcHmM9vR3g1xM | Students know about the aerobic and anaerobic respiration. They know the mechanism of inhalation and exhalation. They can record the change in chest size while inhalation and exhalation. They will apply warm water in case of muscle cramps in order to get relief. SKILLS: *Experimentation *Observation *Analysis *Critical thinking | | | |
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| AUGUST | CH-7 TRANSPORTATI ON IN PLANTS AND ANIMALS | LEARNERS WILL BE ABLE TO: *Define transportation & understand the need of transportation in plants & animals. *Know the process of transportation in plants & animals. *Understand the basic structure & function of human heart. *Know the composition & functions of human blood. *Explain the process of excretion in animals & humans. | *Interaction & discussion *Chalk and Board *Demonstration and explanation of model of human circulatory system *Model of stethoscope *Experiential learning activity- Measuring & noting down the heart beat of family members | https://www.youtube.com/watch?v=P-wOP_6MgZw | Students know about the various components of blood and their functions. They can calculate the pulse rate and feel the heart beat. They know the structure of heart and its function. They are aware about the fact that the wastes have to be eliminated out from the body as they are toxic. They are equipped with the role of kidney and other parts involved in excreting wastes in human beings and other animals. SKILLS: *Experimentation *Observation *Analysis *Critical thinking *Drawing and labelling | | | |
| SEPTEMBER | REVISION | LEARNERS SHOULD BE ABLE TO: Revise all the concepts in a proper manner and clear their doubts, for Term 1 Examination. | *Interaction and discussion method in the class | | SKILLS: Skills of inquiry and learning | | | |
| | | TERM II EXAMINATION | | | | | | |
| OCTOBER | CH-8 REPRODUCTION IN PLANTS | LEARNERS SHOULD BE ABLE TO: *Understand Asexual reproduction in plants * know the artificial methods of vegetative propagation vanderstand Sexual reproduction in plants *know about the structure of flower *understand the process of fertilization and seed dispersal | *Classroom discussion and explanation *Chalk and board *Demonstrati on method *Lab activity- Dissecting a flower and identifying its parts like stamen ,pistil ete | https://www.youtube. com/live/57rYYYgNr2O? si=5jlKML7iquKyjqpJ | Students know about the various techniques involved in asexual reproduction in plants. They are aware about the advantages of vegetative propogation over sexual reproduction. They know the various parts of china rose and their importance. They feel the importance of various agents of seed dispersal which ultimately increases the number of crops and variety. SKILLS: **observation** **Experimentation** **Drawing and labelling** | | | |
| | CH-9 MOTION AND TIME | LEARNERS WILL BE ABLE TO: *Understand uniform and non uniform motion *Understand the concept of speed and average speed *Explain about the dependent and independent quantities and how they are used in the graph. Explain the various technological advancements regarding finding out time starting from the periodic events to the digital clocks. *Know different units of motion and time. | *Classroom discussion and explanation *Chalk and Board *Showing a model of simple pendulum. *Distance- time graphs | https://www.youtube. com/live/pCz6OvTw9tk2 si=Aapd0PkkWXuUcBYo | Students are acknowledged with uniform and non- uniform motion. They can compare the speeds by observing the pattern obtained in graph. They can plot distance-time graphs. SKILLS: *Experimentation *observation *conclusion | | | |
| NOVEMBER | CH-10 ELECTRIC CURRENT AND ITS EFFECTS | LEARNERS WILL BE ABLE TO *Understand components of electric circuit and draw their symbols. *Understand why heat is produce when an electric is passing through a wire. *Explain importance of heating effects of electric current in our daily life *Explain the uses of electromagnet *Understand the working of electric bell. | *Classroom discussion and explanation *Chalk and Board *Questioning *Flowchart *Lab Activity- Demonstration of working of a simple electric circuit and knowing the role of its various components. | https://www.youtube. com/live/BWSZz_OMD5Y2 si=1AOfXlopdwqc0eOK https://youtu.be/4HT2s7O1g82 si=_lrovKtH6MR4(TBW | Students know that electric current produces heating effect and magnetic effect. They are aware about the advantage of CFC over electric bulb. They can relate the concept to real life situations like cranes use electromagnets for lifting heavy objects. They know about the use of fuse wire. SKILLS: *Experimentation *Observation *Conclusion | | | |
| | СН-11 ІЛСНТ | LEARNERS WILL BE ABLE TO "Understand the two laws of reflection. "Understand the concept of reflection by mirrors/shiny surfaces. "Comprehend the working of plane mirrors and spherical mirrors to propagate light. "Differentiate between real and virtual image. "Identify different types of lenses and mirrors | *Classroom discussion and explanation *Chalk and Board *Questioning *Showing of mirrors and lenses in lab. Lab Activity-To verify law of reflection of light. | https://youtu.be/8iC6iK157tE? si=Wzie9af7dyniTRxO.https://www. youtube.com/ive/LLcr4jETNU? si=2U5KBecYLGmOdguC | Students are acquainted with the properties and uses of spherical lenses and mirrors. They can identify the concave and convex mirror found in their daily life like rear view mirror uses the convex mirror while a dentist uses the concave mirror. SKILLS: *Experimentation *Observation *Conclusion | | | |

| DECEMBE | R CH-12 FORESTS- OUR LIFELINE | LEARNERS WILL BE ABLE TO: *Understand components of forest like plants,animals, decomposers, air, water and soil. *Understand Structure of forest. *Understand role of forest in maintaining the environmental balance. *Develop awareness towards nature and animals. * Develop sensitivity towards conservation of forests | *Classroom discussion and explanation *Crossword puzzle *Chalk and Board | https://www.youtube. com/live/A1IN9NGqlvA2 si=Km1360EGwsNr1StZ | Students now know about the importance of every living organism through food chain. They are aware about the role of forests in our life. SKILLS: *Skill of sequencing *Inclusion of all the steps *Scientific Values |
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| JANUARY | CH-13 WASTE WATER STORY | LEARNERS WILL BE ABLE TO: *Know the terms sewage sewers, contaminants and sewage treatment *Understand the importance of drainage systems *Understand the various steps involved in the sewage treatment *impart an active role in keeping the environment clean. | *Classroom discussion and explanation *Chalk and Board *Flowchart for steps involved in waste water treatment *Activity-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. | https://www.youtube. com/live/hQnlwOZhrpE? si=Lr7srISN8bFiNaMw | Learners will understand the types of wastes released due to different activities. They will understand the steps associated with the purification of sewage. Learners will create awareness amongst others about the importance of the proper drainage system. SKILLS: **Skill of sequencing** **Inclusion of all the steps** **Scientific temper** **Skill of identification |
| FEBRUAR | Y REVISION | LEARNERS SHOULD BE ABLE TO: Revise all the concepts in a proper manner and clarify their doubts and prepare themselves for Final Term | *Interaction and discussion method in the class | | SKILLS: Skills of inquiry and learning |