

Bridge course: 2021-22

Course: 30 days learning Activities

Subject: Science Class: 10

Desired learning outcomes	Learning materials	Advised activities	Instruction for the management of the Activities
1. Defining key concepts related to movement & also accounts the circumstances of everyday life.	1. Define and differentiate between distance moved & displacement	Day 1. 1.1: Activity using marble/ball, pipe and stop watch. 1.2: Move the object according to direction. 1.3: View the ray diagram and find out the distance travelled & displacement.	1.1-By making the marbles roll inside the pipe of different length, observe and record the distance travelled and time taken. Further discuss about the case of displacement related to time taken and distance travelled.

	<p>2. Meaning of speed and Velocity.</p>	<p>Day 2</p> <p>2.1: Activity using key car / remote car.</p> <p>2.2: Display of videos related to the concept of speed & velocity.</p> <p>2.3: Discuss.</p>	<p>2.1-In the school grounds or classroom, involve students to calculate speed and velocity in different situations by moving the car to different distances and directions.</p> <p>2.2 Showing some simple videos related to speed & velocity. And then there by let's discuss and interpret about whether it is related to speed or the velocity.</p>
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	<p>3. Detecting the acceleration as objects move.</p>	<p>3.1: Watch Video & PPT</p> <p>3.2: Acceleration due to the experience of force.</p> <p>3.3: Find out who moves/reaches faster?</p>	<p>3.1-First, watch the videos that are related to acceleration, then observe the fluctuations in the speed of motion of the object, and let it be related and defined as acceleration.</p> <p>https://www.youtube.com/watch?v=e5GI2LLAGo&feature=youtu.be</p> <p>3.3- Let students tell you some contextual stories / situations related to acceleration. What happens if the speed is increased / decreased over time? Let's guide them to think</p>
<p>2. Defining the law of conservation of energy and realize the change of</p>	<p>1. Differentiate between potential and kinetic energy.</p>	<p>Day3.</p> <p>1.1: Experiments on energy conversion.</p> <p>1.2: Watching videos.</p> <p>1.3: Analysing the energy conversion.</p>	<p>1.1-Let's demonstrate some simple experiments on kinetic energy to potential energy, potential to kinetic energy and then identify the energy change in each experiment. With the guidance of the teacher let's facilitate the learning of transformation of energy from one form to another.</p> <p>Ex: Springs, spinning top, Clock, Pouring water from a height</p>

<p>electric energy to other forms of energy.</p>	<p>2. To detect and differentiate temperature & heat.</p>	<p>Day4.</p> <p>2.1: Activity on increasing temperature by providing heat.</p> <p>2.2: Activity on decreasing temperature by providing heat.</p> <p>2.3: Tabulating boiling and melting of things.</p>	<p>2.1-Let students play using a magnifying glass by heating, such as paper, water, match stick etc. Let us give hint to list out initial & final temperature of the objects and variations of heat & temperature and also to notice the increase in the temperature of the material.</p>
	<p>3. Noticing the easy way of conversion of electric current and know its</p>	<p>Day 5.</p> <p>3.1: Activity: Construction of an electric circuit.</p> <p>3.2: Experiment & Demonstration.</p>	<p>3.1-Let the students in groups construct an electrical circuit using dry cell, conductor wires, bulb, nichrome wire, and let them experiment by own and identify the kind of energy conversion and analyse it.</p>

	importance.	<p>3.3: Simple play on the importance of electric power</p> <p>3.4: Oral activity: I am an electrical appliance, I will tell myself- my work,</p>	
<p>3. Interpreting & analysing the characteristics of light.</p>	<p>1. Examining the characteristics and reflection of light.</p>	<p>Day6.</p> <p>1.1: Simple experiments of reflection</p> <p>Bending of light game</p> <p>1.2: Use mirror and say the property of image formed.</p>	<p>1.1-Instruct students to perform light bending activities using a battery, direct & curved tubes and different types of mirrors. Also check the propagation of light in different medium and note the distinctions in the motion of light discuss.</p>

		1.3: Using the mirror draw the reflection form of the given Image / word.	
	2. Noticing and appreciating the refraction and splitting of light.	Day7. 2.1:Simple experiments with refraction 2.2: View video clips 2.3: Playing a game placing a coin in a bucket full of water and hitting it with another coin.	2.1- Let the students observe the rays of light through the different fluids, and also the images formed when light rays pass through a lens. Notice the dispersion i.e., division of light into constituent colours when passed through the prism.

<p>4. Recognize how the sound is produced and learns about propagation of sound waves</p>	<p>1. Explains the method of production of sound.</p>	<p>Day8. 1.1: Activity on production of sound. 1.2: Demonstration of sound waves in solid & liquid materials.</p>	<p>1.1-Using tuning fork, plates, spring etc conduct an activity to show the formation of waves in water. Similarly, through multiple experiments analyse the methods of production of sound.</p>
<p>will explain about controlling sound pollution.</p>	<p>2.Draw the ray diagram showing transmission of sound waves</p>	<p>Day9. 2.1: Listening and identifying the frequency. 2.2: Video displaying. 2.3: Practising ray diagram of sound waves.</p>	<p>2.1-Listen to different frequency of sounds in the classroom using loud speakers. Specify the amplitude of each sound, Now graphically express the difference in the transmission of sound waves</p>

	<p>3. Discussing the meaning and effects of sound pollution.</p>	<p>Day10.</p> <p>3.1: Viewing a video.</p> <p>3.2: Discussion on sound pollution</p> <p>3.3: A play/skit on the circumstances sound pollution occurs.</p>	<p>3.1-Lets students allowed to watch animated videos related to noise pollution and discuss in group the effects of noise pollution.</p> <p>Write an essay on noise pollution.</p>
<p>5. Describing the structure and characteristics</p>	<p>1. Identifying the Fundamental particles of</p>	<p>Day 11.</p> <p>1.1: Drawing activity.</p> <p>1.2: Writing an electron distribution picture of</p>	<p>1.1- Write a representative picture of an atom and suggest identifying parts. Help them to identify fundamental particles in atom.</p>

of the atom.	atom.	atoms of the elements. 1.3:Model making	
	2. Reviewing the valency of the element.	Day 12. 2.1: Give different elements and then give activity to write name of elements, atomic number, mass number, and valence. 2.2: Drawing of the Valency of special elements	2.1- Ask to list elements with high and low valency. Then let's facilitate to draw it in the cardboards. 2. 2. Suggest a view of the drawing indicating the valency of inert gases and try to guess why the valency is zero.

	<p>3. Creating electronic configuration.</p>	<p>Day 13:</p> <p>3.1:I'm an electron: My shell game</p> <p>3.2: Activity of electron dot structure diagram of atom of the periodic table.</p> <p>3.3: Creating atomic model</p>	<p>3.1- Let us create a model of the atom in the school grounds. Let the teacher stand in the nucleus area and then teach the electron design by playing around instructing the students to stand in the shells mentioned by the teacher.</p> <p>3.2- Let us write down the atomic number of elements and help to write configuration on the blackboard itself.</p> <p>3.3- Let us use cardboard, pencil, needle, thread & beads to make a model of the atom.</p>
<p>6. Types of Chemical changes& their classification</p>	<p>1.Experiments on Chemical reactions experiment.</p>	<p>Day 14:</p> <p>1.1: Sulphur dioxide preparation activity.</p> <p>1.2: Carrying out the activity of experiments of various chemical</p>	<p>1.1- Let us experiment with sulphur powder reacting with air and then suggest that to observe whether a new material is raised there.</p> <p>1.2-Let us experiment with different chemical substances and ask them to identify new products of chemical reaction.</p>

		reactions.	
	2. Understanding the meaning of Chemical change.	Day 15: 2.1: Preparation of list of physical and chemical changes in daily life. 2.2: Experiments on physical change.	2.1- Let's allow students to identify, list and write physical& chemical changes in their daily life. Eg: breaking rope, curding of milk. 2.2- Let's show the physical change by showing by heating and boiling of water activity. https://www.youtube.com/watch?v=LZH8DzQTsQY
	3. They will identify the types of	Day 16: 3.1: Reading equation, identify the reactants&	3. 1- Give flash cards to students having chemical equations and suggest them to identify the reactants and products. Let us suggest identifying its type of chemical reaction.

	<p>chemical reactions & writing chemical equations.</p>	<p>products.</p> <p>3.2: See experiment and write equation</p> <p>3.3: Do experiment and identify the type of chemical reaction.</p> <p>3.4: Knowledge of the above chemical reactions in everyday life situations.</p> <p>Eg:Turmeric & Lime Mixture</p>	<p>3. 2- Let us help to write the equations of chemical combination, decomposition and displacement on the blackboard.</p> <p>https://www.youtube.com/watch?v=2Juem0lcifE&feature=youtu.be</p> <p>Suggest writing the equation of the experiment on a blackboard whenever any experiment is done. Let's examine it.</p>
<p>7. students will list out the properties of</p>	<p>1. Discussion on ionic bond & covalent bonds.</p>	<p>Day 17:</p> <p>1.1: Activity to classify certain chemical</p>	<p>1.1. Give chemical substances and help them to classify the substances formed by ionic bond & covalent bond.</p>

<p>Ionic compounds & covalent compounds.</p>	<p>2. Ionization experiment will be carried out.</p>	<p>substances kept on the table.</p> <p>1.2: Activity to test the melting and boiling point of ionic & covalent compounds.</p> <p>2.1: Table salt ionizing activity</p>	<p>1.2. Let us try to roast the ionic & covalent compounds in an iron furnace in the presence of air. Check the melting and boiling points and guide them to making tables.</p> <p>2.1- Let us guide that the salt water in the beaker will ionize and that carbonic compounds are not ionized.</p>
<p>8. Explaining the physical & chemical properties of</p>	<p>1. students will identify the metal and non-metals</p>	<p>Day 18:</p> <p>1.1: The process of separating metal and non-metals.</p>	<p>1.1- Place some objects on the table and suggest that the students to identify and divide them into metals and non-metals. Then let them list out their properties.</p>

metals& non- metals and their uses	2. students will examine the physical and chemical Properties of Metals& Non- Metals	Day 19: 2.1: Malleable & Ductile Activity. 2.2: Conducting reactivity of metals experiments.	2.1- Let's do beating & dragging activity on phosphorus, sulphur and iron, copper etc. Let us identify which element has malleable and ductile property. 2.2- When both sodium and sulphur are added to water, let us observe the sodium reactivity immediately.
	3. Students will list out the uses of metal and non-metals.	Day 20: 3.1: Listing the activity of many metals and non- metals used in everyday life 3.2: Watch video and identify the use of metal.	3.1-Let us allow the students to watch video and PPTs of metal and non-metals used in various factories to be recorded in the form of a table. 3.2- Let's arrange some of the items used in daily life in class. Each student is one. Let's allow each student to touch the object and view it as he

		<p>3.3. See the object and identify it as metallic or non-metallic.</p>	<p>pleases. Then let's suggest to give reason whether it is metallic/non-metallic.</p>
<p>9. Learning the scientific methods of agriculture.</p>	<p>1. Understanding the scientific methods used in agriculture.</p>	<p>Day 21:</p> <p>1.1: let the students visit to the agricultural land.</p> <p>1.2:Field Visit-To know various agricultural practices</p> <p>1.3: Video Viewing- How is organic farming better?</p>	<p>1.1- Let the students watch the local agricultural land near the school with the teachers and discuss with the farmers the scientific farming methods adopted there and help them list them.</p> <p>https://www.youtube.com/watch?v=NQ2B0JZHjTw</p>

		<p>1.4:Viewing and explaining the picture of scientific methods</p> <p>1.5:Interviewing of farmers who have adopted scientific methods</p>	
	<p>2. Students will analyze advantages and disadvantages of agricultural equipment & fertilizers.</p>	<p>Day 22:</p> <p>2.1: View traditional agricultural equipment and model making.</p> <p>2.2:"Use organic manure, look at the crop yield."</p> <p>2.3: Toy manufacturing</p>	<p>2.1- Let the students will see practically from the farmers the method of using agricultural equipment and agricultural implements in the field. Then let us observe the agricultural activities and motivate them to prepare models of agricultural implements found there.</p> <p>https://www.youtube.com/watch?v=khXPo_QY0B8</p> <p>2.2- To meet an organic farming-based field and collect</p>

		<p>from agricultural products.</p> <p>2.4: Pictorial viewing of agricultural equipment</p> <p>2.5: Agricultural Equipment Models Exhibition</p>	<p>information, let us discuss the importance of organic manure in groups.</p>
	<p>3. students will know how to produce scientifically and profitably.</p>	<p>Day 23:</p> <p>3.1:Field Visit- Progressive Farmers Field/Garden Visit</p> <p>3.2:PPTs related to scientific farming</p> <p>3.3:View videos</p> <p>3.4:Visit Local soil testing</p>	<p>3.1-Visiting Local Progressive Farmers, soil testing centers and collect information.</p> <p>Let us meet the Animal Husbandry Centre/Breeding Centers and have a simple discussion on agricultural management.</p> <p>https://www.youtube.com/watch?v=aHN6SRwwdek</p>

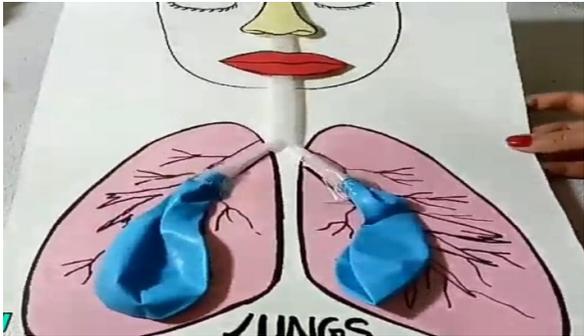
		<p>centers</p> <p>3.5:Local breed improvement</p> <p>Visit the centers.</p>	
<p>10. students will describe the meaning of cell, cell organelles, structure and function of tissues.</p> <p>.</p>	<p>1.students will know the meaning of cell, cell organelles, structure and function.</p>	<p>Day 24:</p> <p>1.1: Observation of cells and cell organelles with the help of microscope.</p> <p>1.2: Look at the cell diagram and name the parts.</p> <p>1.3: Arrange the pictures of the given cell organelles in an empty</p>	<p>1.1- Let the students help in making a temporary slide with the use of onion membranes under the guidance of teachers, view the slide with the help of a microscope, write down the observed structure and compare it with the structure written by the classmates. Let's guide to write the structure of cell organelles.</p>

		<p>cell diagram.</p> <p>1.4:Cell drawing</p>	
<p>2.students will explain types of plant tissues and functions.</p>	<p>Day 25:</p> <p>2.1:Preparing & View of Temporary Slides.</p> <p>2.2:Pictorial view of plant tissues</p> <p>2.3:Video viewing of plant tissues</p>	<p>2.1- Let the students prepare temporary slides of cross section of the stem using the stem of karnakundala, tridax, red dish with the teacher and observe it in a microscope. Let us identify the structure of the tissues and express them in a pictorial form.</p> <p>https://www.youtube.com/watch?v=GICOQijkIKc</p>	
<p>3. students will explain the types of animal</p>	<p>3.1:Explain the structure of the animal tissues by viewing pictures.</p>	<p>3.1-Let the students observe the drawings of animal tissues in different groups and suggest them to explain the structure as they see it.</p>	

	tissues and functions.	3.2:Watching Video 3.3: Creating album of animal tissues.	
11. Learning about beneficial &disease-causing microorganism s and explain the importance of health.	1.Sub-organisms students become aware of diseases caused by microorganisms . & appreciates the uses of micro-organisms.	Day 26: 1.1: View and explain the uses of microorganisms by viewing pictures. 1.2: Table creation on microorganisms' uses. 1.3: Viewing videos of bread-making, liquor making & manufacturing medicines.	1.1- Observe a picture of microorganisms and guide them to understand its importance and discuss its importance in the classroom.

	<p>2. students will know the Infectious diseases & measures to prevent spread.</p>	<p>Day 27:</p> <p>2.1: Discussion on spread & preventive measures of infectious diseases.</p> <p>2.2: View videos on spread & preventive measures of infectious diseases.</p> <p>2.3: Preparation of table on spread & preventive measures of infectious diseases.</p>	<p>2.1- Let the students will watch PPT and videos in class on spread & preventive measures of infectious diseases. Let them discuss and present their disadvantages in daily life in groups.</p> <p>https://www.youtube.com/watch?v=KDkeC4eOp3c</p>
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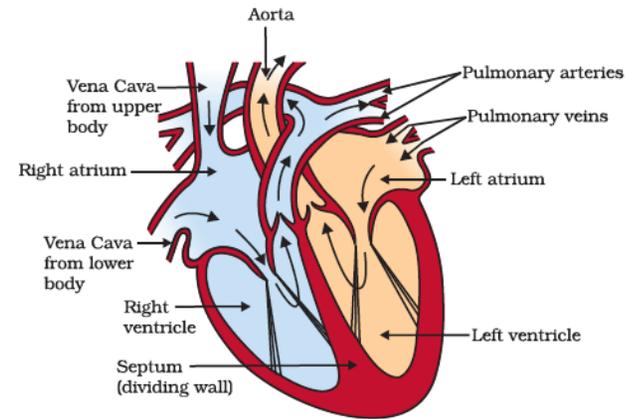
	<p>3. Discussion on Importance of Health.</p>	<p>Day 28:</p> <p>3.1: "Be aware of the secret of health" (display of health-related posters) activity.</p> <p>3.2: Information Gathering & Discussion</p> <p>3.3: Collect or create a health-related slogan.</p> <p>3.4: Collecting articles on the importance of health from daily magazines and making albums.</p>	<p>3.1- Explain antibiotics/ vaccines, collect information and help create a simple note on the method of spreading diseases & preventive measures.</p> <p>Eg: BCG, Polio, DPT, Covishield</p> <p>3.4- Ask the groups to discuss the spread of infectious diseases and measures to prevent them. Let students collect information about infectious diseases from the use of daily newspaper clips, science magazines & internet and discuss them in different groups.</p>
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<p>12. Describing respiration and circulation inhuman beings.</p>	<p>1. Describes the breathing process in man.</p>	<p>Day 29:</p> <p>1.1: Preparing model and explaining the mode of breathing in man.</p> <p>1.2: Observe and explain the picture of breathing in man.</p> <p>1.3: Watch and explain the video of breathing in man</p> <p>1.4: Drawing and explaining the breathing process in man.</p>	<p>1.1- Give two balloons, two pipes and cardboards and guide them to make model and help to learn about the breathing in man.</p>  <p>https://youtu.be/8J5MvwdDnI0</p>
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**2. Describing
the circulatory
system in
human.**

Day 30:
**2.1: Observing and
explaining the circulation
in human.**
**2.2: Watching video and
explaining the circulation
in human.**
**2.3: Drawing and
explaining the circulation
in human.**

**2.1-teacher will help the students to observe and explain the
circulation in man.**



<https://youtu.be/62znbwWPIrA>

https://youtu.be/vILE_1TYIVU