

# MONTH WISE SPLIT UP SYLLABUS

## CLASS- VI

### SUBJECT- SCIENCE CHAPTER – FOOD WHERE DOES IT COME FROM MONTH- APRIL

GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate skills to life	Strategies to evaluate life skills
<p>Food</p> <p>Characteristics of living and nonliving things.</p> <p>Importance of food</p> <p>Variety of food.</p> <p>Sources of food.</p>	<p>Students would be able to know about the difference between living and non-living things. Students would be able to know about the importance of food for their living.</p> <p>Students would be able to know about the different variety of food</p> <p>Students would be able to know about some Sources of food.</p> <p>Students would be able to know about the parts of the plants that are used as food.</p>	<p><b>E- class</b> along with video on the chapter</p> <p>Discussion about the characteristics of living and non-living things along with examples.</p> <p>Discussion about the importance of food like it gives us energy, it helps us to grow, and it protects us from diseases.</p> <p>Discussion about the different variety of food that students eat in their houses.</p> <p>Discussion about the different sources of food like plants and animals products that are used as food along with examples.</p>	<p><b><u>L1 Questions</u></b> Q can you name ingredients needed to prepare a dish vegetable. Q Which part of tea plant is used for making tea? Q Name five plants and their parts that we eat</p> <p><b><u>L2 Questions</u></b> Q. Why food is necessary for human life?</p> <p>Q We get sugar from</p>	<p>Understands the ingredients needed to make a food item</p> <p>Collection of recipes from different regions of India with pictures</p> <p>Activity to differentiate between healthy and unhealthy food items</p> <p>Let the child observe</p>	<p>Work Sheet-</p> <p>Q. Whatdotheythink“whic hkindoffoodshouldbet akenbyus?”</p> <p>Q. Whatdotheythinkwhichi shealthierbetweenicecream,fruits?andwhy?</p> <p>Q. Do you justify the huge amount of wastage of food in marriage party in the country where 20% of</p>

Plant parts and animals products as food.	Students would be able to know about the food habits of some animals.	Discussion about the parts of the plants like roots, stem, leaves, flower and fruit along with examples like reddish, sugarcane, spinach, cauliflower, mango and animals products like egg, fish, meat, along with the examples of the animals that yield these.	..... plant. <b>Q.</b> Which of the following is a carnivores animal 1. sparrow 2. owl 3. Dear 4. Cow  <b><u>L3 Questions</u></b> <b>Q.</b> Which of the following is not a milk product? 1. Cheese 2. Butter 3. Ghee 4. Honey <b>Q.</b> Humans are 1. Omnivores 2. carnivores 3. Herbivores 4. none of the above	food management (wastage ) in Indian weddings  Collect different vegetables to mention the parts of plant that we eat	the people sleep without food?  Q What method do you suggest to save food in social gathering?
Food habits of animals.		Discussion about the food habits like herbivores, carnivores and omnivores along with their examples like cow, lion, bear			

#### PROJECT:1

Activity	Understands the edible parts of a plant
Materials required	Variety of vegetables
Procedure	Interview method, Survey method
Let's think	The child finds out about edible parts of various plants from his mother/neighbours, by survey of fields and shares his findings in the class. Example:-Banana, Pumpkin, drumstick etc.

#### PROJECT: 2

Activity	Understands the ingredients needed to make a food item
----------	--

Materials required	Variety of ingredients.
Procedure	Collection of recipes from different regions of India with pictures
Let's think	<ul style="list-style-type: none"> <li>Listing the ingredients of a particular recipe.</li> <li>Classifying the ingredients as originating from plants or animals.</li> </ul>

**CLASS- VI**  
**SUBJECT- SCIENCE**  
**CHAPTER –COMPONENTS OF FOOD**  
**MONTH- APRIL**

<b>GIST OF THE LESSON</b>	<b>TARGET LERNING OUTCOME</b>	<b>TEACHING ACTIVITY PLANED</b>	<b>LEARNING</b>	<b>QUESTION ON TLOs, HOTS &amp; CORRELATION WITH OTHER SUBJECTS</b>	<b>Suggested activities to inculcate life skills</b>	<b>Strategies to evaluate life skills</b>
<p>Component of food.</p> <p>Importance of food</p> <p>Types of</p>	<p>Students would be able to know about the importance of food for their living.</p> <p>Students would be able to know about the</p>	<p><b>E- class</b> along with video on the chapter</p> <p>Discussion about the importance of food like it gives us energy, it helps us to grow, and it protects us from diseases.</p> <p>Discussion about the different types of nutrient present in their food along</p>		<p><b>L1.</b></p> <p>Q. Why milk is called a complete food?</p> <p>Q. What if excess of nutrients are taken in diet ?</p>	<p>Role play on deficiency diseases, Demonstrations based on test for starch, proteins and fats</p> <p>Organising activity like community lunch for the class where students shall be able to exchange various thoughts about</p>	<p>Conduct a survey in groups class-wise so as to know which dietary nutrient makes the most for the students for different age groups.</p> <p>Eating habits survey having questions</p>

nutrient.	different types of nutrient present in their food along with the examples of food containing them. Students would be able to know about test that shows food contain carbohydrate, proteins and fat.	with the examples of food from their daily life.	Q. What are dietary fibres ?	food „have different tastes and also developing habit of healthy food habits.	like;
Test for carbohydrate, proteins and fat.		Discussion about the test that shows food contains carbohydrate, proteins and fat. Along with activity in the lab. Food items turning blue black on adding iodine solution contains carbohydrate. Food items turning violet colour on adding copper sulphate and caustic soda shows protein. Discussion about the definition and importance of balance diet along with their component and examples of some food having balance diet like milk. Discussion about the harmful effect of not taking balance diet along with examples of some deficiency disease like scurvy, goitre etc.	<b>L2.</b>  Q. Name the nutrients which mainly give energy?  Q Deficiency of Vitamin C causes ..... Q. Name some sources of vitamin B and D.		A Food eaten by class 1 students in the morning.  B Lunch box of class 1 if it is a balanced diet or not.  C How many don't eat tiffin?
Balance diet	Students would be able to know about the importance of balance diet.		<b>L3.</b> Q. Name two sources of protein. Q. What is balanced diet?		
Deficiency disease	Students would be able to know about the disease caused by lack of balance diet.				

#### PROJECT:1

Activity	Recording the food items eaten for breakfast, lunch and dinner over a period of one
	week
Materials required	Pen and Paper

GIST OF THE	TARGET LERNING	TEACHING LEARNING	QUESTION ON TLOs,	Suggested activities to inculcate	Strategies to evaluate life
	Procedure	Own observation and maintaining record of the same. <ul style="list-style-type: none"> <li>The students note down the food items eaten for breakfast, lunch and dinner over a period of one week in a tabular form.</li> <li>After a week they analyze the nutrients obtained from the food by each child and classify it as a balanced diet or not.</li> </ul>			
	Let's think	What are the major nutrients consumed in a week? Did we eat balanced diet every day?			

### PROJECT: 2

Activity	Collect information regarding most common health problems observed in people staying in your family and neighbourhood.
Materials required	Pen and Paper
Procedure	Own observation and maintaining record of the same. <ul style="list-style-type: none"> <li>The students note down the number of people having health issues in their family.</li> <li>The students note down the most common health problems.</li> <li>The students will write their observations about the nutrients which were lacking in their diet.</li> </ul>
Let's think	What are the reasons of major health problems? What are the nutrients which were lacking in their diet?

**CLASS- VI**

**Month: May / June 2021**

**Topic: Fibre to Fabric**

LESSON	OUTCOME	ACTIVITY PLANED	HOTS & CORRELATION WITH OTHER SUBJECTS	life skills	skills
--------	---------	-----------------	--	-------------	--------

Fibre to fabric		E- class along with video on the chapter	<b><u>L1 Questions</u></b> Q. Why cotton clothes are preferred in summers? Q What are the basic need of living things?	Visit a nearby tailoring shop,collect cutting of fabrics leftover after stitching and try to label them as cotton,silk ,wool or synthetic fibre.	Questionnaire-
Variety in fabric.	Students would be able to know about the different types of fabric they are using	Discussion about the different types of fabric student are using in their daily life along with examples. Discussion about the different types of fibre like natural and synthetic fibre along with their examples from their daily life.	Q Name three animals from which fibres are obtained.	Take a piece of cotton fabric and try to find a loose thread or yarn at one of the edges and pull it out and observe thin fibres.	Q How many children have charkha at their home?
Fibre.	Students would be able to know about the fibres obtained from animals and plants		<b><u>L2 Questions</u></b> Q what is spinning?	Weaving with paper strips, knitting.	Q. How we get fabric from a charkha?
Sources of fibre.	Students would be able to know about the different sources of fibres. Students would be able to know about some Sources of food.	Discussion about the different sources of fibre like animals and plants and chemicals from which fibres are made.	Q Name two types of fibres obtained from animal source. Q Name two natural fibres.	Classroom discussion on Mahatma Gandhi who popularized charkha.	Q Name any famous national leader who have to weave charkha.
Plant fibres.	Students would be able to know about some plant fibre kike cotton and jute.	Discussion about plant fibre cotton and jute and the climate and areas of our country where they are grown along with examples of states.	Q Name the states of our country where jute is grown,		Q What was his role in freedom struggle?
Yarn to fabric	Students would be able to know some	Discussion about thesome simple	<b><u>L3 Questions</u></b> Q.Example of synthetic fibre is a) Cotton		

Clothing history	<p>basic things how fabrics are made.</p> <p>Students would be able to know about types clothes that early man uses.</p>	<p>method of making yarn using takli and charkha and methods to make fabric from yarn like weaving and knitting.</p> <p>Discussion about the types of clothes that early man were using like leaves of trees bark of trees skins of animals</p>	<p>b) jute c) polyester d) silk</p> <p>Q. What are natural fibres ? how are they different from synthetic fibres.</p>	<div data-bbox="1129 8 1533 487"> <p><b>FABRIC CONSTRUCTION</b></p> <p>FIBRES ARE THE BASIS FOR ALL TEXTILES. YOU NEED TO KNOW THE DIFFERENCE BETWEEN NATURAL AND SYNTHETIC FIBRES. HOW EACH FIBRE IS USED, AND WHICH FIBRES CAN BE COMBINED TOGETHER.</p> </div> <p>Visit of students to nearby handloom unit and observe the weaving or knitting of fibres</p>	
------------------	--	---	---	--	--

PROJECT:1

Activity	To identify different types of fabric used to make clothes.
Materials required	Different types of fabrics

Procedure	The students collect samples of fabrics from a tailor and classify them as natural or synthetic fibres.
Let's think	What are the different types of fibres? Which is the most comfortable fibre?

## PROJECT:2

Activity	India has been a major producer of cotton and its fabric. India exports cotton fabrics and items to many other countries. Find out, how it helps us?
Materials required	Newspaper, Magazines
Procedure	Search and read more about fabrics from Newspaper and Magazines
Let's think	Which State in India grow more cotton plants? Which type of soil and climate is good for the growth of cotton plants?





Transparent, opaque and translucent	objects	different materials.	<b><u>L3 Questions</u></b>  Q Name any two materials which sink in water. Q Give two examples of the following: (i) liquids soluble in water (ii) liquids insoluble in water (iii) transparent objects		
-------------------------------------	---------	----------------------	--	--	--

#### PROJECT:1

Activity	Observe and identify different properties of various things at home which are grouped together .
Materials required	Different things at home
Procedure	Look around, observe and identify the similarities in the things which are placed together. Write the name of things which are grouped together.
Let's think	What is the basis of grouping things together? What are the different properties of materials?

Gist Of The lesson	Targeted learning outcomes (TLO)	Teaching learning activity Planned	Questions on TLOs, HOTS & correlation with other subjects	Suggested activities to inculcate life skills	Strategies to evaluate life skills
Pure substances Impure substances Impurities Mixtures Types of mixtures Need of separation Principle of	Students will be able to – I)define pure substances  Differentiate between homogeneous and heterogeneous mixtures	Activity-  Take a sample of muddy water and observe it carefully and write your observations  Activity-  Activity with milk , water and chalk power, water to explain homogenous and heterogeneous mixture  Activity-  Separation of chalk power dissolved in water by using	<b><u>L1 Questions</u></b> Q Is it possible to separate sugar mixture mixed with wheat flour? If yes how would you do this? Q. Salt is obtained from sea water by the process of ..... <b>Q</b> I am a machine Used to separate stalks and grain. identify me if you have Brain <b>Q</b> I separate heavier or light components Using wind or blowing air Identify me as process game is very fair	Narrate the story of rotten apple in the basket which makes other apples also rotten          Picture activity- Getting clear water	Q What would have been the strategy to save other apple?  Q Which technique would you use  Q .Why do we need to separate different component of mixture? Q What is

separation		filtration technique.		from muddy water: Identify the methods given below and arrange them in a correct order.	winnowing? Where is it used?
Methods of separation	Understanding about different methods of separation in day to day activities	Activity- Separation of salt dissolved in water by evaporation method  Activity- Separation of mixture of iron filling, chalk power and common salt by using combination of several methods of separations	<u><b>L2 Questions</b></u> Q How do jewelers separate the pearls of different sizes? Q.How butter is prepared form milk?  <u><b>L3 Questions</b></u> Q. What is winnowing? Where is it used? Q. How would you obtain clear water from a sample of muddy water		Q What is sieving?   Q Explain sedimentation, decantation and filtration.

#### PROJECT:1

Activity	Make a video showing separation of wheat flour and sugar
Materials required	Sugar ,Wheat flour ,Seive
Procedure	Take mixture of sugar and wheat flour Put it on sieve and shake it so that wheat flour will pass through the fine pores of sieve and sugar particles remain on the sieve. The Process is called as SIEVING.
Let's think	What is the principle of separation method? What type of other mixtures can be separated by Sieving?

#### PROJECT:2

Activity	Separation and purification of Sugar from its saturated solution by the process of crystallization.
Materials required	Sugar,Water ,container and burner
Procedure	<p>Take Sugar dissolve in water.</p> <p>Add more and more sugar and keep on dissolving.</p> <p>Then heat the mixture and stir it continuously.</p> <p>Stop heating when sugar does not get mixed in water.</p> <p>Then keep this Saturated solution of Sugar in a container undisturbed for some days.</p> <p>Observe sugar crystals at the bottom and inner surface of container.</p>
Let's think	<p>What is the principle of separation method?</p> <p>What type of other mixtures can be separated and purified by Crystallisation.</p>

**CLASS- VI SUBJECT- SCIENCE**

**CHAPTER – CHANGES AROUND US MONTH- JULY**

<b>Gist Of The lesson</b>	<b>Targeted learning outcomes (TLO)</b>	<b>Teaching learning activity Planned</b>	<b>Questions on TLOs, HOTS &amp; correlation with other subjects</b>	<b>Suggested activities to inculcate life skills</b>	<b>Strategies to evaluate life skills</b>

Reversible and irreversible changes, Different ways to bring a change :  Expansion  Contraction  Evaporation melting  Burning Dissolving  Change of milk into curd.	To know about Reversible and irreversible changes. The students will understand the cause of various changes around us.  The students will understand: expansion, evaporation, melting, dissolving and changing of milk into curd.	Activities to show reversible change: Change of size by blowing air into a balloon, making of a paper aeroplane, making ball from dough, melting of wax.  Activities to show irreversible changes: Baking a roti, burning of a piece of paper.	<u><b>L1 Questions</b></u> Q Atul has bought a new bottle of pickle from the market, he tried to open the metal cap to taste it but could not do so. He then took a bowl of hot water and immersed the upper end of the bottle in it for five minutes. He could easily open the bottle now. Can you give the reason  <u><b>L2 Questions</b></u> What do you know about recycling of papers  <u><b>L3 Questions</b></u>  What do you mean by POP? Where is it used	Make a poster on topic 'Harmful changes around us'. Prepare a chart on Reversible and irreversible changes around you <b>Activity -1</b> Classify the following changes into reversible and irreversible changes (1) Crumpling of paper (2) Burning of paper (3) Sawing of wood (4)Cooking of food (5) Change of water into water vapour	A group discussion on "Is changes always harmful"

#### PROJECT:1

Activity	Maintain a record for one year of the seasonal changes in vegetables, clothing, nature and events around you. Identify the changes that can or cannot be reversed.
Materials required	Pen and paper

Procedure	Writing information about the seasonal changes in vegetables ,clothing nature and events around you. List the changes that can be reversed and can not be reversed.
Let's think	Was all the changes useful? What are the factors which leads to such changes?

## PROJECT:2

Activity	Observe and identify types of changes.
Materials required	Lemon,Paintbrush,paper,cup,canle,matchbox
Procedure	Take a lemon, a paintbrush and a piece of paper. Cut the lemon and squeeze out its juice in a cup. Dip the brush in the lemon juice and write a message on the paper. Let the paper dry and you find that the letters of your message become invisible. Now, press the paper with hot iron or warm it by holding it above the flame of a candle (Take care that it does not catch fire). As the paper gets warm, invisible letters change into dark brown colour.
	Identify the changes that can be reversed.
Let's think	Was that change reversible or irreversible? What was the other changes in that activity?

**CLASS- VI**

**SUBJECT- SCIENCE**

**–GETTING TO KNOW PLANTS**



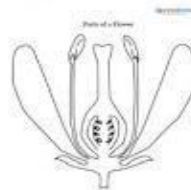
**CHAPTER**

**MONTH- AUGUST**

Gist Of The lesson	Targeted learning outcomes (TLO)	Teaching learning activity Planned	Questions on TLOs, HOTS & correlation with other subjects	Suggested activities to inculcate life skills	Strategies to evaluate life skills
--------------------	----------------------------------	------------------------------------	---	---	------------------------------------

<p>Classification of plants on the basis of their height,stem and branches. Herbs,Shrubs,trees,</p> <p>Creepers and climbers</p> <p>Stem and its function.</p> <p>Structure of leaf – parallel and reticulate venation</p>	<p>Students will be able to learn about different types of plants.</p> <p>Know about different parts</p>	<p>Activity- A field trip or visit to school surrounding area to show different types of plants Herbs, Shrubs, trees, Creepers and climbers</p> <p>Activity- Activity with herbaceous plant and coloured solution to show conduction of water.</p>	<p><b><u>L1 Questions</u></b> Q A boy goes to a garden and describes various types of plants,Identify the characteristics of plants on the basis of which they are classified as herbs,shrubs and plants.Give examples. Q A student keeps a twig in red ink.After few hours,he observed red lines in stem and leaves.Exlpain what has happend? Q. X and Y are the two types of plants.Plant X has a thin, long and weak stem which cannot stand upright on its own</p>	<p>Identification of herbs ,shrubs and trees in school Garden.</p> <p>Make a visit to herbal Garden of your vidyalaya</p> <p>Picture activity-</p>	<p>Q Which herbs are grown in your school garden?</p> <p>Q What is the role of</p> <p>a) Aloe vera b) Tulsi c) Asphotida Q</p> <p>What is the name given to the medicines obtained from herbs?</p>
--	--	--	--	--	--



Transpiration	of the plant and their function	Activity Study the parts of a leaf and arrangement of veins in a leaf	but it readily moves up a nearby support. On the other hand, plant Y is a medium sized plant with a hard and woody stem, branching out near the base.	Label the parts of a plant, leaf and flower
Types of root systems- tap root and fibrous root system .		Activity To explain transpiration with the help of polythene and a rooted plant	(a). What type of plant is X? Give one example. What type of plant is Y? Give one example. <b>L2</b>	
Structure of flower	Relationship between venation and type of roots: The plants having leaves with reticulate venation have tap roots while the plants having leaves with parallel venation have fibrous roots.	Activity Activity with dicot and monocot plant to show Relationship between venation and type of roots	<b>Questions</b> Q What are tap root and fibrous roots? Draw sketches of tap root and fibrous roots? Q. A boy covers a leaf with a polythene bag and leaves it for 24 hours. What will he observe and why?	
	To know about structure of flower	Activity- With the help of the flower of different kind explain various parts of flower.	<b>L3 Questions</b> Q . Draw a well labelled diagram of flower and label its parts Q. Define transpiration  Q What are Creepers and climbers	

#### PROJECT:1

Activity	Make HERBARIUM by collecting different types of leaves.
Materials required	Different types of leaves, cloth, newspaper, blank notebook.

Procedure	<p>Do this activity with a number of leaves over a period of a few weeks.</p> <p>For every leaf that you wish to study, pluck it and wrap it in a wet cloth and take it home.</p> <p>Now, put your leaf in a newspaper and place a heavy book on it.</p> <p>You can also put it under your mattress or a trunk! Take out the leaf after a week.</p> <p>Paste it on a paper and write a poem or story about it. With your leaf collection pasted in a book (a Herbarium), you can become quite an expert about leaves!</p>
Let's think	<p>Were all leaves same in texture ?</p> <p>What kind of various changes do you observe in each kind of leaf?</p>

## PROJECT:2

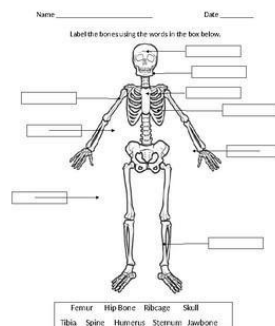
Activity	Make a video of explaining flower parts.
Materials required	Flower (HIBISCUS)
Procedure	<p>Take a Hibiscus flower.</p> <p>Mention various parts of flower-</p> <p>Sepal</p> <p>Petal</p> <p>Pedicel</p> <p>Stamen-Anther and Filament(Male part)</p> <p>Pistil-Stigma,Style and Ovary(Ovules)(Female part)</p>
Let's think	<p>What are the male parts?</p> <p>What are the female parts?</p> <p>Where ovules are located in a Flower?</p>

**CLASS- VI**

**SUBJECT- SCIENCE**  
**–BODY MOVEMENT**

**CHAPTER**

**MONTH- AUGUST -SEPTEMBER**

Gist of The lesson	Targeted learning outcomes (TLO)	Teaching learning activity Planned	Questions on TLOs, HOTS & correlation with other subjects	Suggested activities to inculcate life skills	Strategies to evaluate life skills
-Human body and its movements. -Ball and socket joints. -Pivotal joints. -Hinge joints. -Fixed joints. -Gait of animals <ul style="list-style-type: none"> <li>• Earthworm</li> <li>• Cockroach</li> <li>• Bird</li> <li>• Fish -How do snakes move?</li> </ul>	To enable the students -To identify bones and various joints in our body.  -To understand functioning of different joints.  -To identify various body parts in different animals that helps them in their movement from one place to another.	-Try to bend your elbow when a scale is tied on the arm.  -To prepare a model of ball and socket joint.	-Draw a neat diagram of human Skelton.(L-1)  -Why do under water divers wear fin like flippers on their feet?(L-1).  -How do muscles work in our body to move a bone?(L-2)  -What are fixed joints? Give an example(L-2)  -What are bones? How many bones are present in our body?(L-3)	-Visit biology laboratory to observe model of human Skelton.  -To observe the gait of various animals such as earthworm,snail,cockroach etc	Each child will be told to write on one positive aspect of his or her gait.  Picture activity- Identification of bones and joints of human body  

### PROJECT:1

Activity	Make a video of explaining joints and body movements associated with those joints.
Materials required	Your Body or picture of human skeleton
Procedure	Mention joints by showing movements of your body parts.
Let's think	Was all joints move or work in similar way? How many types of joints you learnt by this activity?Name them.

**CLASS- VI**

**SUBJECT- SCIENCE**

**–LIVING ORGANISM AND THEIR SARROUNDING**

**CHAPTER**

**MONTH- SEPTEMBER**

<b>Gist Of The lesson</b>	<b>Targeted learning outcomes (TLO)</b>	<b>Teaching learning activity Planned</b>	<b>Questions on TLOs, HOTS &amp; correlation with other subjects</b>	<b>Suggested activities to inculcate life skills</b>	<b>Strategies to evaluate life skills</b>
-------------------------------	---	---	--	--	---

Living Organisms- Plants& animals			<b><u>L1 Questions</u></b> Q Differentiate between adaptation and acclimatization. Q you are provided with two objects how will you decide whether it is living or non-living? Q How will the absence of either of biotic or abiotic component affect the environment?	Visit to a zoo to see the special arrangement made for animals brought from different habitat.	Questionnaire
Components of Ecosystem- Biotic and abiotic components	To know about living organism and their interaction with the ecosystem	Activity – Carry students to school garden to explain the interactions between plants/animals with abiotic components.			Q Which animals did you sees in the zoo.  Q Do all of them live on earth? Then what are different habitat found in zoo
Adaptation	To know about Different habitat and correlate with the adaptation present in them to survive in such habitat.	Activity- Show aquarium to the students and explain characteristic of fishes which help them to survive under water.	<b><u>L2 Questions</u></b> Q If you have to go to a desert to live in for a few days, what things will you carry with you?	Role play- Predator and prey Making models of habitats like desert, aquarium, mountainous regions. Making a scrap book on animals and their habitats	Q is it real or man made  Q Do you find the zoo a perfect place for animals to live in? Is it a justice to cage the animals in a small place?
Animal Habitats Terrestrial and aquatic habitat					
Some terrestrial habitat- Deserts, mountains, grassland.		Activity- Outdoor visit of students to nearby forest, grasslands, pond or lake.	Q How can you prove that fire is not a living thing?	Quiz	
Some Aquatic habitat- Oceans,	To know about		Q Compare two different type of terrestrial habitat. E.g. Desert and mountains.		

Ponds and lakes	characteristics of living and non-living organisms.		<b><u>L3 Questions</u></b>		
Characteristics of the living beings	Able to understand concept of stimulus and response	Activity- *Activity with touch me not plant to explain stimulus of touch and response. * Activity of potted plant to show stimulus of light and response of plant.	QDefine habitat.  Q Summarize the features of following habitat- Deserts , Mountain regions, grasslands, oceans , ponds and lakes. Q What are the adaptive features founds in plants and animals of following habitat. Deserts, Mountain regions, grasslands, oceans , ponds and lakes.		

#### PROJECT:1

Activity	Make a habitat album.
Materials required	A 4 sheet Paper,file
Procedure	Try to obtain pictures of animals and plants and paste these under different habitat sections inthe album. Draw the leaf shapes and structures for trees found in thesedifferent regions and include these in the album. In addition, draw thepatterns of branching found in trees of these different regions and include these also in the album.
Let's think	What are the different type of habitats? Name the animals and plants of terrestrial habitat.

Gist Of The lesson	Targeted learning outcomes (TLO)	Teaching learning activity Planned	Questions on TLOs, HOTS & correlation with other subjects	Suggested activities to inculcate life skills	Strategies to evaluate life skills
--------------------	----------------------------------	------------------------------------	---	---	------------------------------------

Story of transport  Means of transport  Some Measurements using ancient techniques  Standard Units of Measurements (distance)  Correct Measurement Of Length  Measuring the length of a curved line	<p>*Understand about different modes of transport. *Learn how people travel long distances. *Modern transport system versus old transport system</p> <p>*Understands the concept of measuring unit *Learn to measure different object. *Standards of measurements</p>	<p>Activity- Models or toys of different modes of transport</p> <p>Activity- Measuring the width/length/height of a table with a 1. hand span 2. scale 3. tape 4 .thread</p> <table><tr><td>Height (hand span)</td><td>Height (scale)</td><td>Height (tape)</td><td>Height (thread)</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table> <p>Activity Observe and record the object which are at rest or in motion</p> <table><tr><td>Object at rest</td><td>Object in motion</td></tr><tr><td></td><td></td></tr></table>	Height (hand span)	Height (scale)	Height (tape)	Height (thread)									Object at rest	Object in motion			<p><b>Level1</b> Q Why can a pace or a footstep not be used as a standard unit of length? Q-State and explain different Modes of transport.</p> <p>Q- Height of a person is 9.25m. Express it in cm.</p> <p><b>Level2</b> Q. meter=____cm Q. Meter is unit of: length, time.</p> <p><b>Level3</b> Q- Give example of land and water transport. Q- Motion of a child on a swing is :circular,</p>	<p>Collect the pictures of various modes of transport and find the common thing in all of them</p> <p>Essay writing on “Trip to your hometown” to illustrate the different modes of transport. Picture activity- Ancient and</p>	<p>A debate on wheel is the most important invention of the 19<sup>th</sup> century</p>
Height (hand span)	Height (scale)	Height (tape)	Height (thread)																		
Object at rest	Object in motion																				

Types of motion 1.Circular motion 2.Periodic motion 3.Rectilinear motion	Understand about motion	<p>ings in</p> <p>ent</p> <p>ircular</p> <p>Activity</p> <p>Activity with clock, fan, sw the children park, musical instruments to show differ types of motions such as c as on and periodic motions otions</p> <p>Activity-</p> <p>Using balls of different siz Mount Board, show the m of sun, moon and earth</p>	periodic, rectilinear	modern modes of transport  □ Identification of different types of motion with the help of miming game.	
---	-------------------------	---	-----------------------	--	--

#### PROJECT:1

Activity	Comparison of foot size of family members.
Materials required	Family members,String,Scale,graph paper
Procedure	Using string and a scale, let each student measure the length of his/her foot. Prepare a bar graph of the foot length measurements that have been obtained for the whole class.
Let's think	Whose foot size is biggest among the family members? Which unit of length is used to measure foot size?

**CLASS- VI SUBJECT- SCIENCE**



**CHAPTER –LIGHT SHADOW AND REFLECTION**  
**MONTH-NOVEMBER**

<b>Gist Of The lesson</b>	<b>Targeted learning outcomes (TLO)</b>	<b>Teaching learning activity Planned</b>	<b>Questions on TLOs, HOTS &amp; correlation with other subjects</b>	<b>Suggested activities to inculcate life skills</b>	<b>Strategies to evaluate life skills</b>
<p>Luminous object</p> <p>Transparent opaque and translucent objects</p> <p>Shadows</p> <p>Pin hole camera</p> <p>Mirror and reflection</p>	<p>To understand basic concept of: Luminous object</p> <p>Able to differentiate between transparent opaque and translucent object</p>	<p>Activity use objects/ examples like torch, candle/ sun star ball mirror etc. to explain luminous and non-luminous objects</p> <p>Activity Show different shadows by using light and hands</p> <p>Activity Showing light travels along a straight line with help of candle and pipe.</p> <p>Activity</p>	<p><b>L1 Questions</b>  Q Can shadow be formed in completely dark room? Explain.  Q A pinhole camera is based on the property of light travelling in ____lines. Q Polished surfaces produce _reflection which causes glare in our eyes.</p> <p><b>L2 Questions</b>  Q Differentiate between opaque transparent and translucent material.</p> <p><b>L3 Questions</b>  Q what are luminous object?  <b>Q Write True or False against each of the following statement</b>  1.The moon is a natural source</p>	<p>Giving different types of objects to students and ask them to identify whether object is transparent or translucent or opaque.</p>	<p>Q How can we see objects?</p> <p>Q when we can call any object transparent opaque or translucent</p> <p>Q Does shadow tell us about the right shape of any object .</p>

Path of light	Basic knowledge of reflection	showing that mirror reflects a beam of light	of light. 2.Bouncing back of light from shining surfaces is called refraction. 3.In lateral inversion, image because inverted. 4.We can see clearly through transparent as well as translucent objects. 5.To get a shadow, we need both a sources of light and an opaque object.		
---------------	-------------------------------	--	--	--	--

#### PROJECT:1

Activity	Make Sliding Pin hole camera
Materials required	Two boxes ,tracing paper,scissor
Procedure	Take two boxes so that one can slideinto another with no gap in between them. Cut open one side of each box. On the opposite face of the larger box,make a small hole in the middle. In the smaller box, cut out from the middle a square with a sideof about 5 to 6 cm. Cover this open square in the box with tracing paper (translucent screen) Slide the smaller box inside the larger onewith the hole, in such a way that theside with the tracing paper is inside Your pin hole camera is ready.
Let's think	What kind of image do you observe through pin hole camera?

**CLASS: VI**

**SUBJECT: SCIENCE**

**CHAPTER: ELECTRICITY AND CIRCUITS**

MONTH:NOVEMBER- DECEMBER

<b>Learner Previous Knowledge</b>	Uses of Electricity Electric appliances
<b>Target Knowledge for this Topic</b>	<ul style="list-style-type: none"><li>• Electric circuits</li><li>• Conductors and insulators</li><li>• Electric bulb</li><li>• Electric switch</li></ul>

<b>GIST OF THE LESSON</b>	<b>TARGET LERNING OUTCOME</b>	<b>TEACHING LEARNING ACTIVITY PLANED</b>	<b>QUESTION ON TLOs, HOTS &amp; CORRELATION WITH OTHER SUBJECTS</b>	<b>Suggested activities to inculcate life skills</b>
Electricity and circuit  Electric cell   Electric bulb.   Electric circuit	Students would be able to know about the electric cell and its structure.  Students would be able to know about the structure of electric bulb.  Students would be able to know about the	<b>E- class</b> along with video and PPT on the chapter  Activity- To prepare the electric circuit using cell, safety pin & wires  Activity- Show electric circuit with switch.  Activity-	<b>L1 (Questions)-</b> <b>Q</b> Why electrician wear rubber gloves while doing electric repair work  <b>L2 (Questions)-</b>  <b>Q</b> What will happen to bulb if a rubber is used instead of a safety pin?  <b>L3 (Questions)-</b>	You are living in an area where light cuts are very frequent. Imagine there were no electric supply for a month. How would that affect your day to day activities and others in your family? Present your imagination in the form, of a story or a play in the school.

Torch.	electric circuit and its component.	Activity with electric circuit with conductors and insulators	Q What are conductors and insulators?	
Conductor and insulator.	Students would be able to know about the working of torch	Discussion about the structure of torch along figure of inside view of torch with its function.	Q What is the role of electric switch in an electric circuit?	
	Students would be able to know about the different types of conductor and insulator present around them.	Discussion about the materials on the basis of their conducting current and classifying them as conductor and insulator.		

### PROJECT: 1

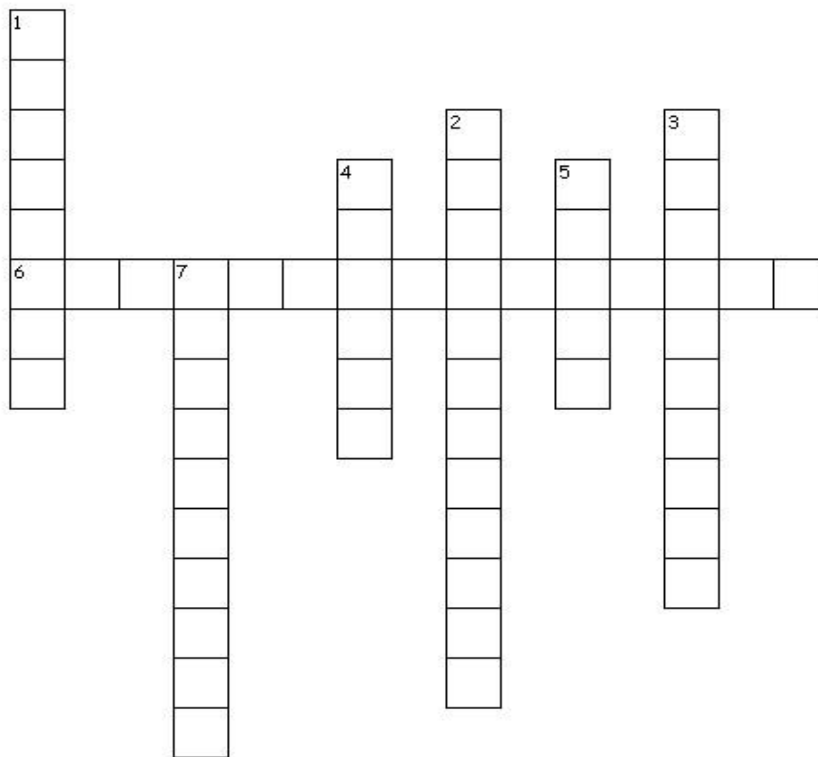
Make a simple electric circuit.

<b>Target Learning Outcome</b>	Understands the components of a simple Electric circuit
<b>Activity</b>	Practical based

- Experiment – Making a simple Electric circuit and testing conductivity of different materials using a simple Electric circuit.

### PROJECT: 2

Solve the crossword puzzle from the clues provided below



Across

6. Path taken by electric current

Down

1. The thin wire in the bulb that gives off light

2. This produces electricity from chemicals stored in them

3. Material which do not allow electricity to pass through them

4. A device which breaks or completes a circuit

5. They are used to form connections in an electric circuit

7. Material which allow electricity to pass through them

### **.Suggested activities for other learning outcomes-**

- Interview method.
- Listing the precautions to be taken while handling electrical appliances. □ Making a hand held fan with an old torch.

**Pedagogical tools for achieving learning indicators**-Components used to make an electric circuit, Torch.

**CLASS: VI**

**SUBJECT: SCIENCE**

**CHAPTER: FUN WITH MAGNET MONTH: DECEMBER**

<b>Learner Previous Knowledge</b>	Metals and non-metals Magnets Iron
<b>Target Knowledge for this Topic</b>	<ul style="list-style-type: none"><li>• Properties of magnet</li><li>• Magnetic materials</li><li>• Discovery of magnet</li></ul>

<b>GIST OF THE LESSON</b>	<b>TARGET LERNING OUTCOME</b>	<b>TEACHING LEARNING ACTIVITY PLANED</b>	<b>QUESTION ON TLOs, HOTS &amp; CORRELATION WITH OTHER</b>	<b>Suggested activities to inculcate life skills</b>
			<b>SUBJECTS</b>	

Discovery of magnets.	Students would be able to know about story of discovery of magnet	<b>E- class</b> along with video and PPT on the chapter	<b>L1 Questions</b> Q A bar magnet has no markings to indicate its poles. How would you find out near which end is its north pole located? Q You are given an iron strip. How will you make it into a magnet? Q How is a compass used to find directions	Find out the applications of magnetism in medical science.
Poles of magnets and its use to find directions.	Students would be able to know about the difference between magnetic and nonmagnetic materials.	<b>Activity-</b> Activity with magnet, paper plastic, paper pins , nail etc. to show magnetic and non-magnetic		
Attraction and repulsion				
Types of magnets	Students would be able to know about properties of magnet	<b>Activity-</b>  To find the poles of a magnet.	<b>L2 Questions</b> Q Write any two properties of a magnet. Q Where are poles of a bar magnet located?	
Properties of magnet.	Students would be able to know about the work of magnetic compass.	<b>Activity-</b>  To prove that a freely suspended magnets always aligns itself in a particular direction.	<b>L3 Questions</b> Write different shapes of magnets? Q Give example of magnetic and Nonmagnetic materials?	
Magnetic compass.	Students would be able to know about the uses of magnet.	Discussion about the work of magnetic compass that is it is a device to find direction and is used from ancient times by sailor during their voyage.		
Care of Magnets				
Uses of magnets				

## PROJECT:1

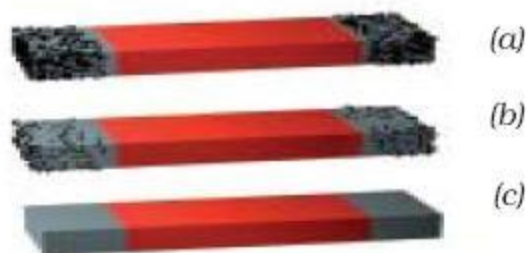
<b>Target Learning Outcome</b>	Identifies magnetic and non-magnetic substances
<b>Activity</b>	Practical based

**Introducing Magnets to Kids.** Make the children gather sometimes. Like paper clips, plastic toys, a spoon, a pencil, eraser, etc from around the house and bring them to the class. Hand them a magnet and have them explore the items. They conclude that some items are attracted to the magnet and some are not. Let them sort all the items into: magnetic and non-magnetic.

## PROJECT: 2

Rub a magnet in the sand or soil. Pull out the magnet. Are there some particles of sand or soil sticking to the magnet? Now, gently shake the magnet to remove the particles of sand or soil. Are some particles still sticking to it? These might be small pieces of iron (iron filings) picked up from the soil.

Through such an activity, we can find out whether the soil or sand from a given place contains particles that have iron. Try this activity near your home, school or the places you visit on your holidays. Does the magnet with iron filings sticking to it, look like any one of those shown in Fig.?



Magnet with (a) many iron filings (b) few iron filings and (c) no iron filings sticking to it.

CLASS: VI



**SUBJECT: SCIENCE**

**CHAPTER: WATER**

**MONTH: JANUARY**

<b>Learner Previous Knowledge</b>	Uses of water Water cycle
<b>Target Knowledge for this Topic</b>	<ul style="list-style-type: none"><li>• Performs activities</li><li>• Connects scientific concepts to everyday life</li><li>• Shows problem solving skills</li></ul>

<b>MONTH</b>	<b>GIST OF THE LESSON</b>	<b>TARGET LERNING OUTCOME</b>	<b>TEACHING LEARNING ACTIVITY PLANED</b>	<b>QUESTION ON TLOs, HOTS &amp; CORRELATION WITH OTHER SUBJECTS</b>	<b>Suggested activities to inculcate life skills</b>
--------------	---------------------------	-------------------------------	--	---	--

WATER :--Uses of water	Students would be able to know about the different sources of water.	<b>E- class</b> along with video and PPT on the chapter	L1 Questions	Suggest some methods to conserve water in your school.
Different states of water			Q take out a cooled water bottle from refrigerator and keep it on table. After some time you notice puddles of water around it. Why?	
Loss of water by plants	Students would be able to know about the water cycle that operates in nature.	Discussion about the different sources of water like rivers, lake, sea and wells along with the uses of water from these sources like for drinking, washing, in agriculture etc.	L2 Questions-	
Clouds formation	Students would be able to know about the condition for drought and rain and their effect of organism life	Activity- To estimate how much water do we use in our home during entire day.	Q What is the difference between evaporation and condensation? Q suggest some measures to reduce daily water consumption at your home.	
transpiration & evaporation Condensation	Students would be able to know about the need for conservation of water.	Activity- To show process of transpiration, evaporation and condensation.	L3 Questions Q Name three forms of water.	
Conservation & Rainwater harvesting.		Discussion about the need for conservation of water that is water has to be conserved for the coming generation otherwise there will be shortage of water.		

## PROJECT

<b>Target Learning Outcome</b>	Identifies magnetic and nonmagnetic substances
<b>Activity</b>	Survey based

Survey of leaking taps in the school premises and submitting a report to the maintenance in charge by the students

### **Suggested activities for other learning outcomes-**

- Slogan writing on 'Save water'
- Model making – Rain water harvesting
- Wall magazine/ Collage- Pollution of water and conservation of water
- Techniques and tips to reduce wastage of water by people – Discussion and role play
- **Pedagogical tools for achieving learning indicators-** Materials needed for activities, Power point presentation- Recycling of waste water, Discussion, Role play.

**CLASS: VI**

**SUBJECT: SCIENCE**

**CHAPTER: AIR AROUND US MONTH: JANUARY**

<b>Learner Previous Knowledge</b>	<b>Air is important for breathing</b>
<b>Target Knowledge for this Topic</b>	<ul style="list-style-type: none"><li>• Composition of air</li><li>• Connects scientific concepts to everyday life</li><li>• Use of air for burning</li></ul>

<b>GIST OF THE LESSON</b>	<b>TARGET LERNING OUTCOME</b>	<b>TEACHING LEARNING ACTIVITY PLANED</b>	<b>QUESTION ON TLOs, HOTS &amp; CORRELATION WITH OTHER SUBJECTS</b>	<b>Suggested activities to inculcate life skills</b>
---------------------------	-------------------------------	--	---	--

<p>Properties of Air</p> <p>Components of air</p> <p>Air helps in burning</p> <p>Air helps in breathing</p> <p>Air helps in balancing the life between plants and animals by exchange of gases</p> <p>Flying of birds</p> <p>Movement of Aeroplan's yachts</p> <p>Production of electricity through wind mill</p> <p>Breathing in living organisms</p> <p>Drying of clothes</p>	<p>Students would be able to know about atmosphere and way to find out that air is present everywhere</p> <p>Students would be able to know about the composition of air</p> <p>Students would be able to know about different uses of air.</p> <p>Students would be able to know about the balance of different gasses especially oxygen and carbon dioxide</p> <p><b>Importance of air</b> : for burning,</p> <p>for breathing, for balancing life on earth,</p> <p>presence of air in soil and water</p>	<p><b>E- class</b> along with video and PPT on the chapter</p> <p>Activity- show presence of air everywhere by lowering of a plastic bottle in a beaker half filled with water.</p> <p>Activity – show the presence of oxygen and nitrogen in air by placing a candle in a water trough and cover the candle with inverted beaker.</p> <p>Discussion about the different uses of air like it is used by animals for respiration, by plants for preparing their food by the process of photosynthesis and by sail boat during their voyage.</p> <p>Activity- Show breathing movements with the help of live human model</p>	<p><b>L1 Questions</b> Q What will happen if there will be no air on earth?</p> <p><b>L2 Questions</b> Q What is the percentage of Nitrogen, oxygen, carbon and other gases in air?</p> <p><b>L3 Questions</b> What would happen if there is no air in water.</p>	<p>To experience the breathing in different location and at different times</p> <p>Change in air pollution level in a city by using” Flip Classroom”</p> <p>Role of air in our daily life's usage e.g. Drying of clothes in presence of air</p>

**PROJECT:**

<b>Target Learning Outcome</b>	Learns that dust is one of the causes of air pollution
<b>Activity</b>	Activity based

Observation of dust collected in a particular area at different times- Fix a small strip of paper on a clear glass window for a week and observe the amount of dust collected by removing the strip. This activity should be repeated every month and observation recorded.

**Suggested activities for other learning outcomes-**

- Air occupies space using a balloon.
- 1/5<sup>th</sup> of air is Oxygen
- Water contains dissolved air.
- Poster making –Prevention of air pollution.
- Discussion- How does air help us in daily life

**Pedagogical tools for achieving learning indicators- Materials** needed for activities, Power point presentation, Discussion, Role play.

**CLASS: VI**

**SUBJECT: SCIENCE**

**CHAPTER: GARBAGE IN GARBAGE OUT MONTH: FEBRUARY**

<b>Learner Previous Knowledge</b>	
<b>Target Knowledge for this Topic</b>	<input type="checkbox"/> Connects scientific concepts to everyday life <input type="checkbox"/> Shows problem solving skills

GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
<p>Introduction of the chapter- Garbage in, Garbage out</p> <p>Segregation of wastes.</p> <p>Management of biodegradable wastes.</p> <p>Management of non biodegradable wastes.</p> <p>Vermicomposting.</p> <p>Dumping of waste.</p>	<p>Students would be able to know about garbage that is generated by daily activity.</p> <p>Students would be able to know about the differences between biodegradable and non-biodegradable waste.</p> <p>Students would be able to know about the process of vermicomposting and its importance.</p>	<p><b>E- class</b> along with video and PPT on the chapter</p> <p><b>Activity</b> Activity with plastic, polythene, animal and food waste to show biodegradable and non- biodegradable waste.</p> <p>Discussion about the garbage that is generated by daily activity by houses, schools, factories, hospitals etc.</p>	<p><b>L 1 (Questions )</b> Q Why reuse is better than recycling? Q Why people in some regions prefer to eat on leaf platters? (correlating: culture and geography) <b>L 2 (Questions )</b> Q What is paper made from? Q What is land fill and How is it <b>L 3 (Questions )</b> Q Define biodegradable, non -biodegradable wastes and recycling. Q Give examples</p>	<p>Activity</p> <p>to segregate garbage at the source level</p> <p>Activity-</p> <p>to make compost at home using garbage produced.</p> <p>Activity-</p> <p>to make best out of waste</p>
<p>Recycling of paper.</p>	<p>Students would be able to know about the best method to dump waste.</p> <p>Students would be able to know about the importance of recycling paper.</p>	<p>Discussion about the differences between biodegradable and nonbiodegradable waste and its consequences on the environment and living things.</p> <p>Discussion about the process of vermicomposting that is conversion of bio degradable waste into compost which increases the fertility of soil with the help of red worm.</p>	<p>biodegradable and non biodegradable wastes? Q. List out some Important ways of recycling paper.</p>	

**PROJECT:**

<b>Target Learning Outcome</b>	Learns about garbage management
<b>Activity</b>	Activity based

Making vermincompost using vegetable and fruit peels in an earthen pot.

**Suggested activities for other learning outcomes-**

- Best out of waste- Making pen stands, flower vase, lamps, etc out of used bottles , cans etc.
- Making papiermache articles out of old news papers □ Survey based project on waste management.

**Pedagogical tools for achieving learning indicators-** Materials needed for activities, Power point presentation, Flash cards, Discussion, Role play.

	<b>KENDRIYA VIDYALAYA SANGHATAN</b>					
	<b>SPLIT UP OF SYLLABUS</b>					
	<b>SUBJECT- SCIENCE</b>					
	<b>CLASS- VII</b>					
<b>TERM 1</b>		<b>PERIODIC TEST</b>	<b>S NO</b>	<b>NAME OF THE LESSON</b>	<b>NO OF PERIODS REQUIRED</b>	
	<b>HALF YEARLY EXAM</b>	<b>PERIODIC TEST 1</b>	<b>1</b>	<b>NUTRITION IN PLANTS</b>	<b>11</b>	<b>APRIL MAY /JUNE</b>
			<b>2</b>	<b>NUTRITION IN ANIMALS</b>	<b>12</b>	
			<b>3</b>	<b>FIBRE TO FABRIC</b>	<b>10</b>	
			<b>4</b>	<b>HEAT</b>	<b>9</b>	
			<b>5</b>	<b>ACID, BASES AND SALTS</b>	<b>8</b>	

			6	PHYSICAL AND CHEMICAL CHANGES	8	JULY
			7	WEATHER CLIMATE A D ADAPTATIONS OF ANIMALS	9	AUGUST
			8	WIND, STORMS AND CYCLONES	10	
			9	SOIL	9	
			10	RESPIRATION IN ORGANISMS	12	SEPTEMBER
TERM 2	SESSION ENDING EXAM	PERIODIC TEST 2	11	TRANSPORTATION IN ANIMALS	8	OCTOBER
			11 B	TRANSPORTATION IN PLANTS	4	NOVEMBER
			12	REPRODUCTION IN PLANTS	9	
			13	MOTION AND TIME	7	
			14	ELECTRIC CURRENT AND ITS EFFECT	8	DECEMBER
			15	LIGHT	9	
			16	WATER; A PRECIOUS RESOURCE	7	JANUARY
			17	FOREST:OUR LIFE LINE	7	
			18	WASTE WATER STORY	7	FEBRUARY

## MONTH WISE SPLIT UP SYLLABUS

CLASS: VII

SUBJECT: SCIENCE



Learner Previous Knowledge	Parts of plants and their functions.
Target Knowledge for this Topic	Modes of Nutrition Photosynthesis Understand the different processes involved in Photosynthesis.

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---

APRIL	Nutrition in plants				
	Modes of nutrition	Students would be able to know about the different modes of nutrition in living things.	1. Iodine test with two different potted plants to detect the presence of starch for the study of photosynthesis in plants.	<b><u>LEVEL 1</u></b> 1. Why stomata are generally found on lower surface of leaf?	A Project on effect of excessive use of pesticides on earthworm.
	Autotrophic nutrition.	Students would be able to know about the autotrophic nutrition that is photosynthesis.	2. Study of saprotrophs with a piece of bread having fungus on it.	2. Why photosynthesis occur in plant cells?	
	Other modes of nutrition in plants.		3. Discussion about the different modes of nutrition in living things like autotrophic and heterotrophic nutrition along with definition and examples	3. How plants like Cuscutta fulfill its nutritional requirements?	
	Symbiotic relationship.	Students would be able to know about the other modes of nutrition in plants like parasitic mode.	4. Discussion about the symbiotic relationship along with its definition and the component of lichen that is algae and fungi combine to form lichen which shows symbiotic relationship and both are benefited with each other.	<b><u>LEVEL 2</u></b> 1. What is Photosynthesis? Explain the role of leaves in photosynthesis.	
	Replenishment of nutrient in soil.	Students would be able to know about symbiotic relationship in lichen.		2. Can we call all insectivorous plants as carnivore? Why or why not?	
		Students would be able to know about the process through which	5. Discussion about the process	<b><u>LEVEL 3</u></b> 1. Why do organisms need to take food?	

		soil is replenished by nutrient.	how microorganism like bacteria replenished the soil again by nutrient after consumption of nutrient by plant. Rhizobium converts atmospheric nitrogen into nitrates increasing the fertility of soil.	2. Define photosynthesis. 3. What are autotrophs?	
--	--	----------------------------------	--	--	--

### PROJECT:1

Activity	Understanding Food Labels
Materials required	Labelled products or clean, empty product packages
Procedure	<p>1. Get students in groups of four to analyze 8 to 10 product labels. 2. Ask the following questions: a. Which packaging appeals to them the most? Why?</p> <p>b. Which all nutrients can you identify from each of the food labels?</p> <p>c. Which of the items has the maximum amount of carbohydrates, fibers, proteins and energy?</p> <p>d. Which of more nutrients makes the food item tastier? Which makes it healthier?</p> <p>3. Design a food nutritional label for a product. What information will you retain from the existing label? What additional information would you include?</p>
Let's think	1. What marketing strategies do companies employ to attract consumers towards their eatable products?

### PROJECT: 2

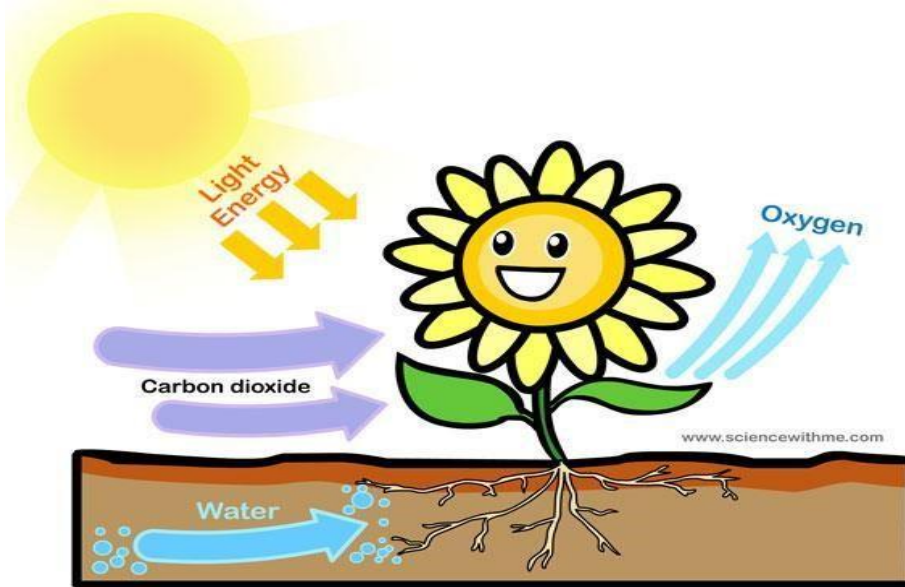
Activity	Plant Adaptations in Carnivorous Plants (Creating Own Species)
Materials required	Internet access or books with pictures of carnivorous plants, craft materials such as paper, markers, balls, paper clips, glue etc.

Procedure	<ol style="list-style-type: none"> <li>1. Share knowledge of carnivorous plants with the students; mechanisms that they use for their functioning and specific features. (Reading resource:<a href="https://kidsgardening.org/lesson-plan-plantadaptationscarnivorous-plants.com">https://kidsgardening.org/lesson-plan-plantadaptationscarnivorous-plants.com</a>)</li> <li>2. Get students in groups of four and create their own 3-D models of carnivorous plants. Ask them to first decide what prey their plant will attract and then answer the following questions:               <ol style="list-style-type: none"> <li>a. How does your plant attract its prey?</li> <li>b. How does your plant trap its prey?</li> <li>c. What happens to the prey after it is trapped?</li> <li>d. Name your plant.</li> <li>e. Describe the living conditions (habitat) of your plant and how will those conditions help in its nutrition.</li> </ol> </li> <li>3. Ask students to present their creation to the class and open space for some questions from other groups.</li> </ol>
Let's think	<ol style="list-style-type: none"> <li>1. How are carnivorous plants different from other plants? How are they similar?</li> <li>2. Why do you think carnivorous plants fall under the category of plants? Which other organisms do they show similarity to?</li> </ol>

### PROJECT: 3

Target Learning Outcome	Learns and understands - <ul style="list-style-type: none"> <li>● About process of photosynthesis</li> <li>● The raw materials needed for the process</li> </ul>
Activity	<ul style="list-style-type: none"> <li>● Study the given picture and answer the questions based on it.</li> </ul>

Picture activity based on photosynthesis



1. What is the source of energy in the process of photosynthesis ?
2. Name the gas that is used by the plants in photosynthesis.
3. Which gas is the waste product of photosynthesis?
4. What is the source of water for the plants for photosynthesis?
5. Which part of the plant helps it to absorb water and minerals?

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: NUTRITION IN ANIMALS**

<b>Learner Previous Knowledge</b>	<b>Nutrition in plants</b>  <b>Human body parts and their functions</b>
<b>Target Knowledge for this Topic</b>	<b>Life Processes</b>  <b>Digestive System</b>  <b>Study the organ system responsible for digestion in humans and organs involved in the same; Understand the different processes involved in digestion;</b>  <b>What are the common diseases associated with malfunctioning organs in the digestive system? (Diabetes, liver diseases, stomach ulcers, etc.)</b>  <b>Know how amoeba acquires its nutrition from its body</b>

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER	Suggested activities to inculcate life skills
				SUBJECTS	

APRIL	<p>Nutrition</p> <p>Different modes of taking food</p> <p>Steps of nutrition in animals.</p> <p>Digestion in human beings</p>	<p>Students would be able to know about the different modes of taking food in various animals.</p> <p>Students would be able to know about the steps involved in nutrition.</p> <p>Students would be able to know about the various steps in the digestion in human beings</p>	<p><b>E- class</b> along with video on the chapter</p> <p>Discussion about the Different modes of taking food in various animals like humans, snakes, mosquito, butterfly, birds etc.</p> <p>Discussion about the steps involved in nutrition that is Ingestion, Digestion, Absorption, Assimilation and egestion along with definition.</p> <p>Discussion about the various steps in the digestion in human beings starting from mouth humans have four types of teeth incisor for cutting, canine for tearing, premolar and molar for chewing and grinding food. Tongues present in mouth have taste buds which help us to know the taste of food. Saliva contains enzyme salivary amylase which start digesting starch in the mouth.</p> <p>Discussion about the semi</p>	<p><b>LEVEL 1</b></p> <p>1.How does teeth decide the type of food for animals?</p> <p>2.Why do people suffer from indigestion?</p> <p>3.Draw a diagram of human digestive system.</p> <p><b>LEVEL 2</b></p> <p>1.What is the role of Bile in digestion?</p> <p>2.What is a food vacuole and where it is found?</p> <p>3.What are villi?</p> <p><b>LEVEL 3</b></p> <p>1.Name the largest gland in Human body?</p> <p>2.Name the part of digestive tract which carries food from buccal cavity to stomach?</p>	<p>1.Visit a doctor and find out:</p> <p>a). Under what conditions does a patient need to be on drip of glucose.</p> <p>b). How does glucose help patient to recover?</p> <p>2.Prepare a power point presentation on vitamins and get the following information:</p> <p>(i). Why are vitamins necessary in diet?</p> <p>(ii). Which fruits or vegetables should be eaten regularly to get vitamins</p>
-------	---	--	--	--	--

	Digestion in intestine and absorption.	Students would be able to know about the digestion in intestine and its role in absorption	digested food that goes in the intestine via stomach where HCl was secreted which kills the microbes present in the food and makes the medium acidic digestion is completed in small intestine where villi are present which absorb the digested food.		
--	--	--	--	--	--

### PROJECT: 1

#### VISIT TO BIOLOGY LABORATORY

- Divide the students in two major groups.
- The students were taken to Biology lab to see the model of human digestive system.
- From the model different parts of the body shall be taken out and given to the children to understand the function of mouth, oesophagus, stomach and small intestine
- Students will observe carefully.

### PROJECT: 2

- Draw the diagram of Human digestive system

**Suggested activities for other learning outcomes-** activities like quiz, jumbled words, diagram based activities, class room discussion.

**Pedagogical tools for achieving learning indicators-** Pictures of various organs of human digestive system, Word maze

**CLASS: VII**



**CHAPTER: FIBRE TO FABRIC**

<b>Learner Previous Knowledge</b>	<b>Clothing</b>  <b>Journey of plant fibres (cotton and jute) from plant to fabric</b>
<b>Target Knowledge for this Topic</b>	<ul style="list-style-type: none"><li>● <b>Animals fibres (wool and silk)</b></li><li>● <b>Journey of fibres from sheep to woolen sweater</b></li><li>● <b>Life cycle of silk worm</b></li><li>● <b>Processing of silk</b></li></ul>

<b>MONTH</b>	<b>GIST OF THE LESSON</b>	<b>TARGET LERNING</b>	<b>TEACHING LEARNING</b>	<b>QUESTION ON TLOs, HOTS &amp;</b>	<b>Suggested activities to inculcate life</b>
--------------	---------------------------	-----------------------	--------------------------	-------------------------------------	---

		<b>OUTCOME</b>	<b>ACTIVITY PLANED</b>	<b>CORRELATION WITH OTHER SUBJECTS</b>	<b>skills</b>
--	--	----------------	------------------------	--	---------------

MAY/ JUNE	<p>GENERAL INTRODUCTION OF MEANING OF FIBRE</p> <p>TYPES OF FIBRE</p> <p>EXAMPLES OF SYNTHETIC AND NATURAL FIBRE</p> <p>ANIMAL FIBRE ( WOOL)</p> <p>PROCESS OF OBTAINING SILK FROM COCOON</p> <p>PROCESSING OF SILK</p>	<p>MEANING, USES, IMPORTANCE OF FIBRE</p> <p>SYNTHETIC AND NATURAL</p> <p>DIFFERENT TYPES OF ANIMALS THAT YIELD FIBRE (WOOL)</p> <p>VARIOUS STEPS OF PROCESS OF FIBRE INTO WOOL</p> <p>DIFFERENT STAGES OF LIFE HISTORY OF SILK MOTH</p> <p>PROCESS OF OBTAINING SILK FROM A PILE OF COCOON</p>	<p>1.COLLECTION OF DIFFERENT TYPES OF FIBRE USED IN DAY TO DAY LIFE</p> <p>2.PREPARE SCRAP BOOK CONTAINING DIFFERENT PICTURES OF ANIMALS THAT YIELD WOOL.</p> <p>3. .POWER POINT PRESENTATION AND COLLECT PICTURES OF THE STAGES OF THE LIFE HISTORY OF THE SILK MOTH AND ARRANGE AND PASTE THE PICTURES IN THE CORRECT SEQUENCE IN CYCLIC FORM ON A CHART PAPER</p> <p>4. POWER POINT PRESENTATION</p>	<p><b>LEVEL 1</b></p> <p>1.How does teeth decide the type of food for animals?</p> <p>2.Why do people suffer from indigestion?</p> <p>3.Draw a diagram of human digestive system.</p> <p><b>LEVEL 2</b></p> <p>1.What is the role of Bile in digestion ?</p> <p>2.What is a food vacuole and where it is found ?</p>	<p>SCIENTIFIC ABILITY , ENHANCING OBSERVATION SKILL, CREATIVE ABILITY,</p> <p>INDIVIDUAL ACTIVITIES LIKE COLLECTION OF ANIMALS THAT YIELD WOOL, PREPARATION OF SCRAP BOOK AND ETC. AND GROUP ACTIVITIES LIKE VISIT TO KNITTING CENTRE, VILLAGE TO SEE THE ANIMALS WHICH YIELD WOOL</p>
--------------	---	---	---	--	--

	HEALTH HAZARDS OF WOOL AND SILK INDUSTRIES	ANTHRAX OR SORTER'S DISEASE, RESPIRATORY DISEASES		<p>3.What are villi ?</p> <p><b>LEVEL 3</b></p> <p>1.Name the largest gland in Human body?</p> <p>2.Name the part of digestive tract which carries food from buccal cavity to stomach?</p>	
--	--	---	--	--	--

### PROJECT: 1

NAME OF THE ACTIVITY: HANDS ON ACTIVITY – MAKING WOOL YARN FROM FIBRE

MATERIALS REQUIRED: Synthetic wool (used in soft toys), Comb with tooth apart, dye of different colours.

METHODOLGY OF ACTIVITY:

Students will be asked to bring synthetic wool (used for stuffing soft toys) and other materials required.

Students will be told that the synthetic wool is like the fleece which is sheared and scoured. Now they need to sort it out based on different colours and textures.

Then they will be asked to remove small furs from those hairs.

Then the hair will be coloured with different colours and dried by the students.

After this, the students will be asked to comb the dyed fibres and roll it into yarn on a side pencil.

Thus the students will learn the different steps of processing fibre into yarn. 1.

Would you like to wear a sweater which is made of unsorted wool? Why?

2. Does shearing hurt the sheep?

3. Why is shearing done mostly during summer?

#### CURIOSITY QUESTIONS:

Why should we burn the wool to know whether it is natural or a synthetic wool?

#### ANSWER GUIDE:

Which part of the sheep gives us wool?

Is the smell of a burning hair similar to that of a natural wool or synthetic wool?

#### PROJECT: 2

Distinguish between artificial silk and natural silk.

1. Take a piece of natural silk fabric and another piece of artificial silk fabric.

2. Burn both the fabrics separately and observe the smell produced.

Conclusion:

1. The fabric which burns giving a smell of burning hair will be natural silk or pure silk.

2. The fabric which burns giving a smell of burning paper will be artificial silk.

Just like silk, wool is also made up of proteins. So, a piece of woollen fabric also burns giving the smell of burning hair.

#### PROJECT: 3

Target Learning Outcome	● Acquires knowledge about types of wool and the states where they are found
Activity	● Map work

In the table, names of some Indian breeds of sheep and the states where they are found. Mark the information on a political map of India

S.No.	Name of breed	Quality of wool	State where found
-------	---------------	-----------------	-------------------

1	Lohi	Good quality wool	Rajasthan, Punjab
2	Rampur bushair	Brown fleece	Uttar Pradesh, Himachal Pradesh
3	Nali	Carpet wool	Rajasthan, Haryana, Punjab
4	Bakharwal	For woollen shawls	Jammu and Kashmir
5	Marwari	Coarse wool	Gujarat
6	Patanwadi	For hosiery	Gujarat

**Suggested activities for other learning outcomes-** activities like quiz, , diagram based activities, class room discussion on ‘Whether shearing harms the sheep’, different types of wool.

**Pedagogical tools for achieving learning indicators-** Explanation, Discussion, Charts, Diagrams.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: HEAT**

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---

JULY	Heat		<b>E- class</b> along with video on the chapter	<b>LEVEL 1</b>	Go to a doctor or your nearest health Centre/medical room of your Vidyalaya. Observe the doctor taking the temperature of patients. Collect data of at least 10 patients.
	Hot and cold.	Students would be able to know about the comparison between hotness and coldness.	Discussion about the hotness and coldness along with the activity using three beaker having cold, warm and normal water	1.In places of hot climate it is advised that outer walls of the houses to be painted white. Explain	
	Measuring temperature	Students would be able to know about the thermometer and how to measure the temperature.	Discussion about the device used for measuring temperature i.e. clinical and laboratory thermometer and their differences along with correct method to taking its reading.	2.Explain why wearing more layers of clothing during winter keeps us warmer than just wearing one thick piece of clothing?	
	Transfer of heat			3.Explain the process of convection with example.	
	Land and sea breeze	Students would be able to know about the process of transfer of heat.		<b>LEVEL 2</b>	
	Types of cloth to wear in summer and winter season.	Students would be able to know about land and sea breeze and the reason for pleasant weather in coastal areas.	Discussion about the methods of the transmission of heat i.e. conduction, convection and radiation along with their definition and the medium in which these occur along	1. Differentiate clinical and laboratory thermometer.  2. What are the properties of conductors and insulators?	
		Students would be			

		able to know about the types of clothes suitable in summer and winter season	<p>with examples of conductor and insulators.</p> <p>Discussion about the land and sea breeze along with diagram on the blackboard explaining that hot air moves to sea during day and cool air comes from sea this is sea breeze and vice versa occurs in the night thus land and sea breeze keeps the weather of the coastal areas pleasant.</p> <p>Discussion about the reason for wearing cotton and light colour clothes in summer because it reflects heat.</p>	<p><b>LEVEL 3</b></p> <p>1. What is heat?</p> <p>2. How will you check hot and cold water body?</p> <p>3.Name the device which is used to measure the hot and cold body?</p> <p>4.What is thermometer?</p> <p>Write types of thermometer</p>	
--	--	--	---	--	--

### PROJECT: 1

TOPIC: TRANSFER OF HEAT

NAME OF THE ACTIVITY: PASSING THE BALL (GAMES)

MATERIALS REQUIRED: A football / volleyball, 40 soft balls /stones

METHODOLGY OF ACTIVITY: □ Students are divided into 4 groups.

ACTIVITY 1:

□ Each group is asked to make a circle and one student should stand in the centre.

□ The student in the centre will throw the ball to others in the circle.

□ Teacher explains – Radiation as follows: - Student in the centre is the source of heat energy. - Heat energy (ball) is thrown / passed to the materials (students in circle) and does not need a medium to pass the energy.

### ACTIVITY 2:

□ Students are asked to stand in a straight line (one behind the other).

□ Student standing in front is given a ball and asked to pass it to the next one above his

head and he passes it to the next one and so on. - Teacher explains Conduction; ball is the heat energy and is passed through the medium (students) from one particle to another (without the movement of the particle).

### ACTIVITY 3:

□ A basket of soft balls / stones is kept near the last student.

□ Student who stands near the basket of balls / stones (source of heat energy) picks up a ball, goes and stands in front.

□ The next student near the source of heat (basket) picks up another ball and stands in front. The game continues. - Teacher explains the Convection; the particle (student) with the heat energy(ball) moves away from the source of heat and the next particle gets heated up. Thus the particles get heated up one by one directly and repeatedly.

1. How do people sitting around a camp fire get the heat?

2. 'Exhaust fan in kitchen is fixed above the gas stove'. Why?

3. How does a hot air balloon go high up in the sky without any engine?

4. Name the method of heat transfer which involves the movement of particles.

5. Name the mode of heat transfer that happens in solids. Why?

### CURIOSITY QUESTIONS:

1. Can you measure the temperature of boiling water with clinical thermometer? Give reason. ANSWER GUIDE: □  
What is the range of clinical thermometer?

□ What will happen if the level of mercury inside the clinical thermometer keeps increasing beyond maximum?

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: ACIDS BASES AND SATS**



MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
JULY	<p>Acids and bases</p> <p>Natural indicators around us</p>	<p>Students will be able to learn about the acids and bases and will understand the properties of acids and bases.</p> <p>Will learn about the indicators and their uses.</p> <p>Will be able to understand concept of neutralization and its applications in day to day life.</p>	<p><b>E- class</b> along with video on the chapter</p> <p>Discussion about the nature of the materials present in their house on basis of taste like lemon juice is sour; baking soda is bitter whereas common salt is salty.</p> <p>Activity :To differentiate between acids and bases using indicators.</p> <p>To prepare a turmeric/china</p>	<p><u><b>LEVEL I</b></u></p> <p>1.Why antacid tablet is taken when you suffer from acidity?</p> <p>2.Calamine solution is applied on the skin when ant bites. Why?</p> <p>3.Factory waste is neutralized before disposing it into water.</p> <p><u><b>LEVEL II</b></u></p> <p>1.State differences between acids and bases.</p> <p>2.Name the source from which litmus solution is obtained. What is the use of this solution?</p> <p>3.How you will verify that the</p>	<p>Show a video clipping of acid victims</p>

	Neutralization	Students would be able to know about the nature of the materials present in their house on basis of taste.	rose indicator.	distilled water is neutral/acidic/basic?	
	Neutralization in everyday Life	Students would be able to know about the properties of acid and base.	<p>Discussion about the properties of acid and base on the basis of their taste and change of colour of indicators along with examples like acetic acid, citric acid and sodium hydroxide, calcium hydroxide are bases.</p> <p>Discussions about the neutralization reaction that when acid react with bases salt and water is formed this is called neutralization reaction along with reaction as examples.</p> <p>Discussion about the use of neutralization reaction in daily life like when ant bites it releases acid which can be neutralized by use of base baking soda.</p>	<p><u>LEVEL III</u></p> <p>1. Define acid.</p> <p>2. Define base.</p> <p>3. Give two examples of natural indicators.</p> <p>4. Is distilled water acidic/ basic/ neutral?</p>	

## PROJECT: 1

### To test turmeric as a natural indicator.

Material required

Turmeric, water, soap solution, vinegar.

What do I need to know?

Indicators are those substances which help us to identify whether a substance is an acid or a base by their change of colour.

Teacher's Activity: Teacher will arrange the materials for the individual and give instructions regarding the activity.

How will you proceed?

Student's Activity:

1. Take a tablespoon of turmeric powder. Add a little water and make a paste.
2. Make turmeric paper by depositing turmeric paste on a piece of paper and drying it.

Cut thin strips of the yellow paper obtained.

3. Put a drop of vinegar and soap solution on the strip of turmeric paper.

What have you observed?

S.No	Test Solution	Effect on turmeric solution	Remarks
1	Vinegar		
2	Soap solution		

What have you learned?

Turmeric do not change its colour in \_\_\_\_\_ solution and in \_\_\_\_\_ solution it changes to red and so, it is an acid-base indicator.

What more can we do?

- Make indicator solutions from red cabbage, China rose and check their colour insolutions of some acidic and basic substances.

## PROJECT: 2

<b>Target Learning Outcome</b>	Learns the properties of acids and bases
<b>Activity</b>	<b>Making red cabbage juice as indicator to test edible substances for presence of acids or bases eg. Lemon, curd, baking soda, tomato etc</b>

CLASS: VII

SUBJECT: SCIENCE

CHAPTER: PHYSICAL AND CHEMICAL CHANGES

Learner Previous Knowledge	Changes occur around us constantly.
Target Knowledge for this Topic	Physical change- meaning, definition and examples Chemical change- meaning, definition and examples

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---

JULY	<p>Types of Changes: Physical and chemical,</p> <p>Physical properties and chemical properties,</p> <p>Some chemical changes</p> <p>Rusting of Iron, iron,</p> <p>Methods to prevent rusting</p> <p>Galvanization,</p>	<p>The students will understand</p> <p>Physical and chemical changes</p> <p>Physical and chemical properties.</p> <p>They will be able to differentiate physical and chemical changes.</p> <p>Students will be able to do lab activities.</p> <p>They will understand chemical reactions.</p> <p>They will understand rusting, galvanization and</p>	<p>Activities to show physical change: cutting of piece of paper, recovering chalk from chalk powder, melting of ice and freezing of water, boiling of water.</p> <p>Activities to show chemical change: Burning of magnesium ribbon, reaction between copper Sulphate solution and iron, Test for CO<sub>2</sub></p> <p>Activity: To prepare crystals of copper Sulphate.</p> <p>Discussion about therusting of iron that is iron in the presence of air (oxygen) and moisture (water) forms brown layer on its</p>	<p><b><u>LEVEL I</u></b></p> <p>1.What is the relationship between rusting and photosynthesis</p> <p>2. Explain how some chemical changes lead to harmful physical changes like melting of glaciers ,sea level rise and uneven rain?</p> <p>3. What are alloys and how they are prepared?</p> <p><b><u>LEVEL II</u></b></p> <p>1.When baking soda is mixed with lemon juice bubbles are formed with evolution of gas. What type of change is this?</p> <p>2.Explain how crystals of copper Sulphate can be prepared?</p> <p>3.Explain why rusting of iron objects is faster in coastal areas than in deserts?</p> <p><b><u>LEVEL III</u></b></p> <p>1.Define physical change.</p> <p>2.Define chemical change.</p> <p>3.How painting of iron gate prevents it from rusting.</p>	<p>Display of a clip based on harms caused to various iron based industries by rusting.</p>
------	--	--	--	---	---

	Crystallization.	crystallization	surface called rust		
--	------------------	-----------------	---------------------	--	--

## PROJECT

### Activity 1

Cut a piece of paper in four square pieces. Cut each square piece further into four square pieces. Lay these pieces on the floor or a table so that the pieces acquire the shape of the original piece of paper.

Obviously, you cannot join the pieces back to make the original piece, but is there a change in the property of the paper?

### Activity 2

Collect the chalk dust lying on the floor near the blackboard in your classroom. Or, crush a small piece of chalk into dust. Add a little water to the dust to make a paste. Roll it into the shape of a piece of chalk. Let it dry. Did you recover chalk from the dust?

### Activity 3

Take some ice in a glass or plastic tumbler. Melt a small portion of ice by placing the tumbler in the sun. You have now a mixture of ice and water. Now place the tumbler in a freezing mixture (ice plus common salt). Does the water become solid ice once again?

### Activity 4

**(To be demonstrated by the teacher)**

Dissolve about a teaspoonful of copper sulphate (blue vitriol or *neela thotha*) in about half a cup of water in a glass tumbler or a beaker. Add a few drops of dilute sulphuric acid to the solution. You should get a blue coloured solution. Save a small sample of the solution in a test tube or a small glass bottle. Drop a nail or a used shaving blade into the remaining solution. Wait for half an hour or so. Observe the colour of the solution. Compare it with the colour of the sample solution saved separately.



**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: WEATHER, CLIMATE AND ADAPTATION**

Learner Previous Knowledge	Habitats and adaptations of some animals and plants
Target Knowledge for this Topic	<p>Weather and its elements Climate</p> <p>Difference between climate and weather</p> <p>Relationship between climate and adaptation of animals in polar and tropical rain forest region</p>

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---

AUGUST	<p>Weather climate and adaptation.</p> <p>Weather.</p> <p>Temperature range in our country.</p> <p>Climate.</p> <p>Adaptation.</p> <p>Polar and tropical region.</p>	<p>Students will learn about weather and climate</p> <p>Understanding of climate and factors which affects climate.</p> <p>Concept of maximum and minimum temperature will be given to the students.</p> <p>To co relate climate and adaptations.</p> <p>They will understand why organisms adapt and adaptations in</p>	<p>1.Collection of day to day weather reports and make a scrapbook.</p> <p>2.Activity: Record the temperature in morning, in noon and evening and record your observations.</p> <p>3.A video to show the various organisms and their adaptive features.</p> <p>4.Discussion about theadaptation in various living organism according to the climate of that area for examples cactus are adapted to survive in desert areas.</p> <p>5.Discussions about the climatic condition and adaptation in animals of polar and tropical region like animals in polar region have thick fur to escape cold</p>	<p><b><u>LEVEL 1</u></b></p> <p>1.The tropical rainforest has a large population of animals. Why?</p> <p>2.Explain with examples, why we find animals of certain kind living in particular climatic conditions?</p> <p>3. The bird ‘ X’ move from Siberia to places like Y in Rajasthan and ‘Z’ in Haryana in India during a particular season. It stays in India for a few months and then goes back.</p> <p>i) Name the bird X ii) What are the places Y &amp; Z?</p> <p>iii) What general name is given to birds like X?</p> <p>Iv) Name the season during which bird X moves from Siberia to India?</p> <p><b><u>LEVEL 2</u></b></p> <p>1. Name the elements that determine the weather of a place?</p> <p>2.When are the maximum and minimum temperature are likely to</p>	<p>Visit to your school garden and study characteristics of various types of plants.</p>
--------	--	--	--	---	--



		various organisms	winter.	<p>be occur during the day?</p> <p>3. Which feature adapt polar bears to live extensively cold climate?</p> <p><b><u>LEVEL 3</u></b></p> <p>1. What is weather?</p> <p>2. Define climate.</p> <p>3. What do you mean adaptation?</p>	
--	--	-------------------	---------	--	--

#### PROJECT: 1

Collect information about the Indian Meteorological Department. If possible visit its website: <http://www.imd.gov.in>.

#### PROJECT: 2

Plot a graph of daily changes in temperature. Material

Required

A centimetre graph sheet, temperature data from your local newspaper for at least ten days, and red and blue pencils.

What do I need to know?

We can plot a graph on a graph sheet with some given data and join them to show their variations.

Teacher's Activity: Teacher will arrange the materials for the individual and give instructions regarding the activity. How will you proceed?

Student's Activity:

1. Note down the date and the maximum and minimum temperatures from the newspaper for ten days.
2. On a graph sheet, plot the data on the x-axis and the corresponding maximum temperatures on the y-axis.
3. Join these points with a red pencil to get the maximum temperature graph.

4. Repeat step 2 for minimum temperatures. Now join the points with the blue pencil to get the minimum temperature graph.

What have you observed?

DAY	MAX. TEMP.	MIN. TEMP.
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

What have you learned?

We can see from the graph that the \_\_\_\_\_ and \_\_\_\_\_ temperature change daily. What more can we do?

- We can carry out this activity by noting the humidity content given in the weather report of a daily newspaper.

### PROJECT: 3

<b>Target Learning Outcome</b>	Learns to identify different factors affecting weather.
<b>Activity</b>	Measuring humidity , temperature , wind speed etc. over a period of 1 month and comparing it with a collection of weather reports from the newspaper.

**Suggested activities for other learning outcomes-**Making Cobalt Chloride flowers. PPT on adaptation of animals to different climatic conditions, PPT on Migratory birds. Marking the regions of different climates on map of India.

**Pedagogical tools for achieving learning indicators-** Surveys, field studies, observation, data collection etc.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: WINDS STORM AND CYCLONES**

Learner Previous Knowledge	Moving air is called wind Storms, winds and cyclones can cause natural disasters
Target Knowledge for this Topic	Properties of air such as:  Air expands on heating Air  exerts pressure  The above properties will be related with high wind speeds are accompanied by reduced air pressure.  How thunderstorms and cyclones are caused?  How thunderstorms and cyclones wreak havoc?
	Effective safety measures to be taken against thunderstorm and cyclones.

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills

AUGUST	<p>Air exerts pressure.</p> <p>High speed winds are accompanied by reduced air pressure.</p> <p>Air expands on heating.</p> <p>Wind</p> <p>Thunderstorms and cyclones.</p> <p>Destruction caused by cyclones.</p> <p>Effective safety measures.</p>	<p>Students would be able to know about the winds and effects produced by wind.</p> <p>Students would be able to know about the generation of wind</p> <p>To enable the students to understand the properties of air.</p> <p>They will learn how cyclones are formed..</p> <p>Harmful effects of cyclones.</p>	<p>To show that air exerts pressure with help of a tin can.</p> <p>Activity with balloon and boiling tube to show that air expands on heating.</p> <p>Activity to show that hot air rises upwards.</p> <p>Discussion about the thunderstorm that is moving warm air when comes in contact with fast coming water drops forms lightning and thunder and when low pressure and very high speed wind comes in contact cyclones are formed.</p>	<p><b><u>LEVEL 1</u></b></p> <p>1.Why do roofs of houses blow off by high wind speed?</p> <p>2.How do thunderstorm develop?</p> <p>3. Why is it difficult to ride a bicycle against the direction of wind?</p> <p><b><u>LEVEL 2</u></b></p> <p>1.Why smoke rises upwards?</p> <p>2.How are clouds formed?</p> <p>3.Why do tyre tubes if bicycle/vehicles burst during summer?</p> <p><b><u>LEVEL 3</u></b></p> <p>1.Define Wind.</p> <p>2.How wind is generated.</p> <p>3.How you will find out the direction of wind at a given</p>	<p>Suppose you are a member of a committee, which is responsible for creating development plan of a coastal state. What measures should be taken to reduce the sufferings of people of cyclone hit people.</p>
--------	---	--	---	--	--

		Safety measures against cyclones.	Discussion about the some safety measure like people living in coastal areas should listen cyclone forecast and prepare accordingly they should keep emergency phone number and do accordingly to the instruction given by government agency.	place.	
--	--	-----------------------------------	---	--------	--

### PROJECT: 1

<b>Target Learning Outcome</b>	Identifies relationships in the findings
<b>Activity</b>	<p>To show air exerts pressure :</p> <ol style="list-style-type: none"> <li>1) Take an empty tin, make one hole on the lid &amp; many holes in the bottom</li> <li>2) Keep this in a bowl of water, put one finger on the top hole and lift it. Water will not fall through the holes at the bottom due to the upward air pressure</li> <li>3) Remove the finger from the top hole, water will fall down in the form of shower since the downward air pressure is equal to the upward air pressure &amp; water falls due to its weight</li> </ol>

### Suggested activities for other learning outcomes-

i) Tornado in a jar

Take 3 cups of tap water in a jar

Add 1 tsp of dish soap

1 tsp of Vinegar and some glitter

Swirl the mixture, a Vortex is formed which appears like a tornado ii)

Making a cloud in a jar using chalk powder and water

**Pedagogical tools for achieving learning indicators-** Activities given in the book, pictures of cyclones, storms etc.  
; Video of these Natural disasters.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: SOIL**

Learner Previous Knowledge	Soil is made from weathering of rocks due to natural factors like wind water, temperature and erosion.
Target Knowledge for this Topic	Soil Profile Uses of Soil Soil Types Percolation Rate of water in soil Moisture in soil
	Absorption of water by soil Soil and crops

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---

SEPTEMBER	Soil teeming with life	Students would be able to know about the relation between soil and living organism.	Activity: To show the various layers of soil using soil and water.	<p><b><u>LEVEL 1</u></b></p> <p>1.How soil has formed? Is this still going on? Will it finish someday?</p> <p>2.Why soil doesn't have a uniform structure at all the places?</p> <p><b><u>LEVEL2</u></b></p> <p>1.What is the basis of classification of soil?</p> <p>2.Write the characters of various types of soil.</p> <p>3.Which soil has highest water retaining capacity? How is it useful to the crops?</p> <p><b><u>LEVEL1</u></b></p> <p>1.Why the soil is important?</p>	<p>Teacher will narrate the incidence in the class.</p> <p>Komal Saw a brick kiln near her house. Bricks were being made there. There was so much coming out of the kiln. She has seen truck loads of bricks being taken away for the construction of building.</p>
	Soil profile		Collect samples of different types of soil and study their properties.		
	Types of soil	Students would be able to know about the soil profile along with its properties.	Activity: To study the percolation rate of water in soil		
	Properties of soil		Activity: To demonstrate that the soil contains moisture.		
	Percolation rate of water in soil	Students would be able to know about the different types of soil.	presence of moisture		
	Moisture in soil				

	Absorption of water by soil  Soil and crops	Students would be able to know about the properties of soil.  Students would be able to know about the relation between crops and soil.	in soil.  Experiment to determine absorption capacity of soil.  Discussion about the relation between crops and soil that is crops are grown in soil having more amount of water like clay soil is good for cultivation of crops.	2.List the differences between clayey soil and sandy soil?  3.Sketch the cross section of soil and label various layers.	
--	---	---	---	--	--

<b>Target Learning Outcome</b>	Learns more about soil and its types
<b>Activity</b>	Taking pot A having “sandy soil” , pot B “clayey soil” and pot C with “loamy soil”  Growing plants in all the three pots and studying the water retaining capacities

## PROJECT

**Suggested activities for other learning outcomes-** Making a bottle Terrarium, making pots out of soil, marking the different types of soil found in India on a map and also the crops grown in different regions

**Pedagogical tools for achieving learning indicators-** Field studies, group activities, essay on soil pollution and erosion.

**CLASS: VII**



**CHAPTER: RESPIRATION IN ORGANISM**

Learner Previous Knowledge	Organs of respiratory system, function of respiratory system, physical movement of breathing
Target Knowledge for this Topic	Definition of respiration Organs of respiratory system Mechanism of breathing Respiration in Earthworm, insects, fish and mammals

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	<b>Suggested activities to inculcate life skills</b>
-------	--------------------	------------------------	-----------------------------------	--	--

SEPTEMBER	Breathing	Concept of respiration in Humans.	1.To find out the breathing rate of students in the class.	<b>LEVEL 1</b> 1.Why respiration is a vital process? 2. Describe the structure of lungs. 3. How do lungs function? 4. How do exchange of gases occur in lungs?	An activity in the class demonstrating extraction of nicotine and its effects on the human beings.
	Breathing In Human Beings	Understands the respiratory organs present in Human beings.	2.To measure the size of chest while breathing and record the observations.	<b>LEVEL 2</b> 1. Why does an athlete breathe faster and deeper than usual after finishing the race? 2. Where are lungs located in our body? 3. How many lungs are there in our body? 4. Which gas do we inhale <b>LEVEL 3</b> 1. Can we survive without respiration? 2. Are our both lungs of same size & structure. 3.Do plants also have lungs	
	Respiration Mechanism	Location of our respiratory organs.	3. Video showing the structure of respiratory system and mechanism of respiration in humans and other organisms.		
	Breathing in other Animals	Understand the Structure of Lungs	4. Discussion about the difference between aerobic and anaerobic respiration that is respiration in the presence of oxygen to release more energy is aerobic and respiration in the		
	Breathing under water	Knows about the respiration carried out by plants.			
	Respiration in Plants.	Students would be able to know about the difference between aerobic			
	Respiration in organism.				
	Need for				

	respiration	and anaerobic respiration.	absence of oxygen is called anaerobic respiration.	like us?	
	Aerobic and anaerobic respiration	Students would be able to know about the breathing rate during various activity of their daily life.	5.Discussion about the gasses that we inhale contains more % of oxygen and during exhalation % of CO <sub>2</sub> is more than that of oxygen.		

### PROJECT : 1

Fermentation in Yeast to show anaerobic respiration

Take some dry yeast powder used for making bread in a bowl and add some warm water to it. Also add some sugar to this mixture and record your observations

Materials used	Any bubbles right at the beginning?	Observations After 10 minutes.	Depth of Foam Layer (mm) at 15 minutes
Living yeast in			
plain water			
Living yeast in sugar water			

If yeast cells carry out alcoholic fermentation, would you expect CO<sub>2</sub> to be produced by:

☐ yeast cells in sugar water? yes\_\_\_ no \_\_\_

· yeast cells in plain water (without sugar)? yes\_\_\_ no \_\_\_

Explain your reasoning

## PROJECT: 2

### A BALLON MODEL OF HUMAN LUNGS Materials Required

One plastic bottle, two balloons, straw

**Suggested activities for other learning outcomes-** activities like quiz, breathing rate, diagram based activities, class room discussion on ‘harmful effects of smoking’, respiratory organs of other organisms.

**Pedagogical tools for achieving learning indicators-** Experimentation, Discussion, Analysis of observations.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: TRANSPORTATION IN ANIMALS & PLANTS**

Learner Previous Knowledge	Nutrition and respiration in animals and plants
----------------------------	---

Target Knowledge for this Topic	<p>Transportation of energy in animals.</p> <p>Circulation of blood in animals</p> <p>Transportation of food, water and minerals in plants Excretion in animals Study the process of excretion in the plant</p>
---------------------------------	---

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
OCTOBER/ NOVEMBER	<p>Circulatory system</p> <p>Blood</p> <p>Blood vessel</p>	<p>Students will be able to learn about circulatory system</p> <p>To enable students to differentiate between arteries</p>	<p>1.Activity to find out the pulse rate of the various students.</p> <p>2.A video showing the structure of heart and</p>	<p><u>LEVEL I</u></p> <p>1.Why is transport of material is necessary in plants and animals?</p> <p>2. What will happen if there are no platelets in blood?</p> <p>3. Does transpiration serves any useful</p>	<p>Find out the rate of heart beat with the help of stethoscope of at least 15 students of your class in two different conditions:</p> <p>(a).Rest position</p> <p>(b).Immediately after running/Playing.</p> <p>Correlate tour findings with the body efficiency.</p>

	Arteries and veins	and veins	its functioning.	function in plants? Explain.	
	Structure of heart	Students will get familiar with the structure of heart and its functioning.	3.Activity: To prepare a model of stethoscope.	4.Draw a well labeled diagram of human heart and explain its working.	
	Heart beat		4.Video showing the excretory system and its working.	<b><u>LEVEL II</u></b> 1. Describe function of heart. 2.What are stomata? Give its two functions? 3.Why it is necessary to excrete waste products?	
	Excretion in animal	Understand concept of excretory system in human along with function of kidney.	5.Activity:to make a model of human excretory system	<b><u>LEVEL III</u></b> 1.Define following: (a). Artery (b).Veins 2. Name the components of blood? 3.Name the organ which pumps the blood in humans?	
	Excretory system in human	Students would be able to know about the materials that are transported in plants.	6.Activity:to study the process of transpiration using potted plant.		
	Transportation of substance in plants		7. Discussion about the transport of water and minerals by Xylem and food by Phloem in plants and the importance of transpiration.		
	Transportation of water and animal				
	Transpiration				

## PROJECT: 1

NAME OF THE ACTIVITY: VISUAL TREAT

METHODOLOGY OF ACTIVITY: Students will be shown a video on the structure of the heart.

WEB LINK:- [https://youtu.be/\\_qmNCJxpsr0](https://youtu.be/_qmNCJxpsr0)

1. Name the blood vessel through which the oxygen rich blood from heart reaches the other parts of the body.
2. Name the blood vessel through which the oxygenated blood from lungs reaches the heart.
3. Name the blood vessel by which blood rich in carbon-di-oxide reach the heart.
4. Which blood vessel carries blood rich in carbon-di-oxide from the heart to the lungs?

CURIOSITY QUESTIONS:

Is transpiration necessary for plants?

ANSWER GUIDE:

- Do the plants need a continuous supply of water and why?
- What do the plants absorb along with water

## PROJECT: 2

**DRAW A LABELLED DIAGRAM OF HUMAN HEART.**

**Other activities** like keeping a wilted plant in water and seeing it rejuvenate or labeling a diagram of human heart can be performed to learn the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: Class room discussion, experimenting and PowerPoint presentations.

**CLASS: VII**

**SUBJECT: SCIENCE**

## CHAPTER: REPRODUCTION IN PLANTS

Learner Previous Knowledge	Parts of plant Basic knowledge of Reproduction
Target Knowledge for this Topic	Fertilization process Fruit and seed formation Advantages of vegetative propagation Seed types Pollination

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---



NOVEMBER	Reproduction in plants	Students will learn	1.Activity:Examine a potato with magnifying glass and observe the buds.	<u><b>LEVEL I</b></u>	Collect &observe the various plants, their flowers, fruits & seeds. discuss their various aspects with your classmates. Also find the correlation of the structure of seeds/fruits with their means of dispersal.
	Reproduction.	What reproduction is?		1.Why are spores covered by hard protective coat?	
	Asexual reproduction.	Various modes of reproduction.	2.Cut a branch of rose or Champa and try to grow it in your school garden.	2. Why are flowers colorful &fragrant?	
	Cutting Budding Fragmentation	Able to grow the plants by cutting.		3. What is the size of the spores?	
	Spore formation			<u><b>LEVEL 2</b></u>	
	Sexual reproduction.	Able to differentiate between sexual and asexual reproduction.	3. Discussion about the methods of asexual reproduction likes budding, spore formation, fragmentation along with the examples.	1.What is vegetative reproduction?	
	Unisexual &bisexual flowers	Students will be able to identify the different parts of the flower.		2.Define pollination &fertilization.	
	Pollination and fertilization.			3.Differentiate between: a)Asexual &sexual reproduction b)Self pollination &cross pollination	
	Fruit &seed	Students would be able to know about the	4.Study the parts of flower using cucurbit (unisexual) and China rose(Bisexual Flower)	<u><b>LEVEL 1</b></u>	
				1.Define asexual reproduction.	
				2.Define sexual reproduction.	
				3.Draw a well labeled diagram of flower.	

	formation Seed dispersal	Pollination and fertilization along with their importance			
--	-----------------------------	--	--	--	--

### PROJECT: 1

**Understands plants reproduce through asexual methods.**

Students collect various samples of asexually reproducing plants like potato tuber, onion bulb, ginger rhizome, runners of mint and stolon's of grass or strawberry and identify these pictures.





## PROJECT: 2

Study the mode of reproduction in yeasts. Materials required

A beaker, warm water, dehydrated yeast powder, micro-slide, dropper, glass cover (cover slip), Compound Microscope.

What do I need to know?

Yeast reproduces by the process of asexual reproduction.

Teacher's Activity:

The teacher will arrange ten kits.

Each kit will have the following things – one teaspoon of dehydrated yeast powder, a dropper, a beaker and micro-slide. .

A microscope will be arranged for each of the ten groups.

Teacher will give instructions regarding the activity.

Student's Activity:

1. Take some warm water in a beaker.
2. Dissolve a spoonful of sugar in it.
3. Now add about 1 g of dehydrated yeast powder into the solution.
4. Keep the beaker in a warm place for about an hour.
5. With the help of a dropper, place a drop of the solution on a clear micro-slide.
6. Place a cover glass on it taking care that air bubbles do not enter beneath the cover glass.

Observe the slide under the microscope.

What have you observed?

A number of minute, rounded \_\_\_\_\_ yeast cells with a \_\_\_\_\_ like projection can be observed .

They appear like chains of \_\_\_\_\_ cells. What have you learned?

A bulb –like projection develops on the adult yeast cell called the \_\_\_\_\_ and this method of asexual reproduction of buds is called \_\_\_\_\_.

**Other activities** like dissecting a flower, collecting fruits to study the seeds can be conducted to test the learning outcomes like asking questions leading to investigations and analysis of findings.

**Pedagogical tools** for achieving learning indicators: Class room discussion , experimenting and power point presentations.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: MOTION AND TIME**

Learner Previous Knowledge	Measurement of distance ;Motion-periodic, circular and straight
Target Knowledge for this Topic	Motion; Speed-Average speed Measurement of Time-Time period, pendulum Units of Time and Speed Measuring Speed Distance-Time Graphs-How to plot graphs and learn about their uses

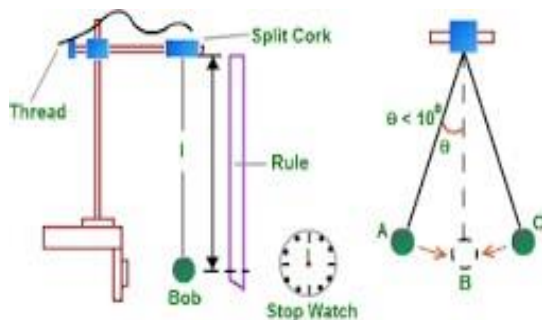
MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---

NOVEMBER	Slow or Fast	Students would be able to know about the body in slow and fast movement.	1.Activity: Make a list of ten objects moving along a straight path. Group the motion of objects as slow and fast.	<u>LEVEL I</u> 1. Draw distance time graph for motion of object moving with uniform motion and non uniform motion? 2. Show the shape of distance-time graph for the motion in following cases: (a).A car moving with constant speed. (b).A car parked on a side road.	Perform a Activity in your school park. Make a swing oscillate without anyone sitting on it. Find its time period. Make sure that there are no jerks in motion. Ask you friend to sit on swing. Push it once and let it swing naturally. Again measure its time period. Repeat the activity with different students sitting on swing. Compare the time period of swing measured in different case.
	Speed				
	Measurement of Time	Students would be able to know about the speed of object.			
	Units of time and Speed		2.Organising a race between students of 200 meter and noting the time taken by them to corelate time and distance		
	Measuring Speed	Students would be able to know about the measurement of time by examples from clock.		<u>LEVEL II</u> 1.A bus covers the distance of 5 km in 5min with speed of 1km/min .Is this motion of bus uniform or non uniform? Give reason for your answer. 2.How the distance speed and time are correlated to each other write the expression for it.	
	Distance-Time Graph	Students would be able to know about the unit of time and speed.	3. Making students to cover 60m distance in straight line in 3 minutes with speed of 20m/min and covering same distance with no		

		<p>Students would be able to know about the graph.</p> <p>Students would be able to know about the distance time graph.</p>	<p>directions in 3 minute again.</p> <p>Showing of speedometer and odometer in vehicle.</p>	<p>3. Name the device which measures the speed of vehicle?</p> <p><u>LEVEL III</u></p> <p>1.What do you mean by oscillatory motion?</p> <p>3.What is the basic unit of speed?</p>	
--	--	---	---	---	--

#### PROJECT:1

TLO	Understands the time period of a simple pendulum.
ACTIVITY	To measure the time period of a simple pendulum



Students will perform the activity and note the time period for different effective lengths of pendulum. other activities like to measure the speed of a ball, plot distance-time graph may demonstrated to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: to prove the hypothesis by performing activities, experiments.

**CLASS: VII**

Learner Previous Knowledge	Electricity and electric current Conductor and insulator
Target Knowledge for this Topic	Electric circuit, closed and open circuit Heating effect of electric current Mechanism of electric bell

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---



DECEMBER	Symbols of electric components	To understand basic symbols of electric component	1. Make a battery by using 2 or 3 cells	<b>LEVEL 1</b> 1. Give one application of electromagnets in the medical science? 2. How does an electric bell work? 3. Do you think electromagnet can be used to separate plastic bags from garbage heap?. Explain	Teacher will narrate the story to students and will ask the questions.  Ram and shyam saw a magic trick sometime back. The magician placed an iron box on the stand and asked Ram to lift the box. Ram could easily lift the box. Now the magician made a show of moving his stick around the box while muttering something. He again asked Ram to lift the box. This time he could not even move it.
	Battery	To differentiate between open and closed electric circuit.	2. To Make electric circuit by using cell, wire, bulb, switch		
	Electric circuit		3. Show element of electric iron to the students.	<b>LEVEL 2</b> 1. Name any two devices based on the effect of electric current.	
	Heating effect of electric current	To realize the importance of electric fuses.	4. Show electric fuses (MCBs) in school campus	2. Name the sources for electric current in our houses. 3. What is a battery?	
	Electric fuses (MCB)	To differentiate between heating effect and magnetic effect of electric current.	5. Activity: To make a electromagnet using iron nail and copper wire.	<b>LEVEL 3</b> 1. How many terminals a cell have? 2. What do you mean by electric fuse. 3. Draw the symbols of	
	Magnetic effect of electric current		6. Discussion about the electromagnet		
	Electromagnet and their uses	Students would be able to know about the electromagnet.			

	Electric bell	To know about the CFL, LED and tube lights	that is magnet prepared in the presence of electric current is called electromagnet and its uses in many electrical devices like electric bell.	following: Electric cell, electric bulb, Switch in on and off position.	
--	---------------	--	---	--	--

## PROJECT: 1

HEATING EFFECT OF ELECTRIC CURRENT

MATERIALS REQUIRED:

Two iron nails, Thermocol sheet, Copper wires - 2, a piece of Nichrome wire which is 10 cm long, electric cell and switch. (Note: Nichrome wire can be obtained from an electric repair shop or a piece of discarded coil of an electric heater made of Nichrome).

#### METHODOLOGY OF ACTIVITY:

- Students are asked to take two iron nails and fix them some distance apart on a thermocol sheet.
  - Then the students are asked to tie Nichrome wire between the two nails.
  - Students are asked to connect the two nails to the two terminals of an electric cell through a switch using copper wires.
  - Now the circuit is switched 'ON' for few seconds and turned 'OFF'. Soon the students are asked to touch the Nichrome wire just for a moment and feel it.
1. How do you feel when the Nichrome wire is touched?
  2. What will happen if a battery is connected instead of an electric cell, to the above circuit?
  3. What will happen if the current is allowed to flow for longer duration? (Note: With one electric cell connected)

**Other activities** like observation of heating effect in electric hot plate, electric iron, glowing filament of an electric bulb, fuse used in buildings, miniature circuit breaker to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: to prove the hypothesis by performing activities, experiments.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: LIGHT**

Learner Previous Knowledge	Light and its sources; optical mediums; rectilinear propagation of light; shadows and reflection.
----------------------------	---

Target Knowledge for this Topic	<p>Examine how an image is formed when ray of light gets reflected; Discuss the characteristics of image formed by a plane mirror; Concept of real and virtual image; Find out how mirror can be used in daily life Investigate how spherical and curved mirrors can be useful in real life;</p> <p>Find out what are concave and convex lenses and what kind of images they form; Dispersion of light</p> <p>Figure out how light gets dispersed Lateral inversion; Regular and irregular reflection; reflected light reflected again</p>
---------------------------------	--

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
DECEMBER	<p>Light</p> <p>Properties of Light</p>	<p>Students will be able to understand the properties of light.</p> <p>Will be able to understand the image formed by</p>	<p><b>E- class</b> along with video and PPT on the chapter</p> <p>Activity: See candle flame through a straight and a bend pipe.</p>	<p><u><b>LEVEL I</b></u></p> <p>Why sunlight appear orange/red during sunrise or sunset?</p> <p>How rainbow is formed?</p>	<p>Here is a game that a group of children can play. One child will be chosen as object and another will act as image of the object. Both will sit opposite to each other. The object will make the movements such as raising hands, touching ears etc. The image will have to make the correct movement of the</p>

	Reflection of light	the plane mirror.			object. Rest of the group will watch the movement of image. If the image fails to make correct movement, she/he will be retired. Another child will take her/his position and the game will continue. A scoring scheme can be introduced.
	Mirror			<b><u>LEVEL II</u></b>	
	Plane mirror	Will be able to understand the image formed by the concave and convex mirror.	To show that mirrors changes the direction of light that falls on it by using a torch and plane mirror	What are the uses of lenses?	
	Characteristics of image formed by plane mirror		Image formation by projectors on screen and image formation by plane mirror	What are the characteristics of the image formed by plane mirror?	
	Lateral inversion	Students would be able to know about the spherical mirror that is concave and convex mirror.		What is virtual image? Give one condition when virtual image is formed?	
	Spherical mirrors		Discussion about the spherical mirror that is concave and convex mirror and the characteristics of image formed by spherical mirror.	<b><u>LEVEL III</u></b>	
	Concave mirror & convex mirror	Students would be able to know about the spherical lenses that is concave and convex lenses.		State two differences between concave and convex lens.	
	Characteristics of images formed by concave mirror and convex mirror		Discussion about the spherical lenses that is concave and convex lenses and image formed by lenses	What are the uses of convex and concave mirrors?	
	Uses of concave	They will come to know about the uses of various		How many colours are there in white light?	

	and convex mirror	types of mirrors and lenses.			
	Lens Concave & Convex lens	They will understand the phenomenon of rainbow and splitting of light.			
	Sunlight-White or coloured				
	Splitting of white light into seven colour				
	Rainbow formation				

TLO	Understands the light phenomenon refraction
ACTIVITY	To study the formation of images using convex and concave lens.

**Materials Required** A mirror stand, a concave mirror, a screen with a stand (about 20 cmx 15 cm), a candle, match box, a scale for measuring distances.

### What do I need to know?

When the reflecting surface bulges inwards then it is known as a concave mirror and when it bulges out, it is known as a convex mirror.

**Teacher’s Activity:**

The teacher will arrange ten kits.

Each kit will have the following things – a mirror stand, a concave mirror, a screen with a stand (about 20 cmx 15 cm), a candle, match box, a scale for measuring distances.

Teacher will give instructions regarding the activity.

**Student’s Activity:**

1. Find the approximate focal length of the concave mirror by focusing sunlight on a sheet of paper.
2. Fix the concave mirror on the stand and place it on a table.
3. Keep a lighted candle on the table at a distance of about thrice the focal length of the mirror.
4. Also, keep the screen on the table. Ensure that the screen does not obstruct the light from the candle falling on the mirror.
5. Try to obtain the image on the screen. For this move the screen forward, backward and sideways till a sharp image of the flame is obtained.

**Other activities** like formation of images by plane and spherical mirrors, observation of white light using a prism, observation of a rainbow may be conducted to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: to prove the hypothesis by performing activities, experiments.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: WATER A PRECIOUS RESOURCES**

Learner Previous Knowledge	Water cycle; Water and Air as natural resources; Anything found in the nature which is useful for living such as air and water are natural resources.
Target Knowledge for this Topic	Water- Water cycle, Sources of water, ground water conservation of ground water; factors responsible for depletion of ground water, water management and water wise habits

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
JANUARY	<p>Availability of potable water on the earth.</p> <p>Forms of water</p> <p>Water cycle</p> <p>Ground water and water table</p>	<p>Students would be able to know about water and its crises across world.</p> <p>Students would be able to know about the distribution of water in the world.</p> <p>Students would be</p>	<p>E- class along with video and PPT on the chapter</p> <p>Activity:</p> <p>Model/Chart of water cycle.</p> <p>Model of rain water harvesting.</p> <p>Discussion about the water as a natural gift of nature that is life</p>	<p><u>LEVEL 1</u></p> <p>Q. What steps will you take to conserve water.</p> <p>Q There is 70% of the water present on the earth still we are asked to conserve water why ?</p> <p><u>LEVEL 2</u></p> <p>Q1 Draw and explain water cycle.</p> <p>Q2.Explain the factors</p>	<p>Survey the campus and make a note of the following:</p> <p>a) Total number of taps.</p> <p>b) Number of taps leaking.</p> <p>c) Amount of water wasted due to leakage.</p> <p>d) Corrective measures taken.</p>



	Depletion of water table	able to know about the various uses of water.	line of every living Organism. It is very essential for survival of living things and about one-fourth of human population are not getting clean drinking water	responsible for depletion of water table.	
	Rain map of India	Students would be able to know about the various reasons for depletion of water.	Show annual rainfall on the map of India.	Q3 Explain how ground water is recharged ?	
	Water management			<u>LEVEL 3</u>	
	Measures for saving water and Water wise habit	Students would be able to know about the management of water.	Discussion about the management of water so that it remains available to the coming generation it can be done by water harvesting.	Q Write three forms of water.  Name any two methods of obtaining groundwater.  Q When world water day is celebrated? .	

--	--	--	--	--	--

### PROJECT: 1

<b>TLO</b>	Understands the water cycle and its significance.
<b>Activity</b>	WATER CYCLE

Put a tumbler inside a mixing bowl and pour in a small amount of boiling water (the tumbler must be in center and not float). Cover the mixing bowl completely with cling film and place small pebble in the center to create a slight slope to drain any condensation into the tumbler.

As the water evaporates children can see it condensing on the cling film and collecting in the tumbler. Students can measure total quantities of water involved, use sea/salty water to create pure water etc.

### PROJECT: 2

**Study the rainfall map of India.**

**What do we require?**

An outline map of India and colour pencils.

**What do I need to know?**

The rainfall received in different parts of India are different.

### Useful weblinks

1) <http://cbse.nic.in/ePub/webcbse/webcbse/ab-cbse-book-3.html>

- 2) <https://epathshala.nic.in//eresources.php?ln=en>
- 3) <http://mowr.gov.in/e-book>
- 4) <https://jalshakti-ddws.gov.in/>
- 5) <http://jalshakti-dowr.gov.in/>

**Other activities-** like studying 1. the water distribution map of India, 2.amount of water usage in various states ,poster and slogan writing related to water conservation can be done to achieve the other learning outcomes. **Pedagogical tools :** . Class room discussion , experimenting and making models and chart.

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: FOREST OUR LIFE LINE**

Learner Previous Knowledge	Generic knowledge of forests as resource Forests as habitat
Target Knowledge for this Topic	Types of trees in forests  Forestry Interdependence of plants and animals on each other. Importance of forests- products obtained from it;  how they affect weather; how they affect food chain
	Crown and canopy of forests Forest- Dynamic living entity Dangers and effects of deforestation

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---

JANUARY	Types of plants and animals in forests	Students would be able to know about the different types of natural resources.	E- class along with video and PPT on the chapter	<b><u>LEVEL I</u></b> 1.Explain how forests prevents flood?  2. Explain why there is no waste in the forests?  3. Why should we worry about the conditions and issues related to forests far from us?	Teacher will narrate a story as follows:  Prof Ahamd along with his students visited a nearby village.The weather of the village was pleasant. They interacted with the villagers and they told them that due to the surrounding forest they receive good rainfall. The air also remained cool. Noise pollution is too less because the forest absorbs the noise of the nearby highway. Children learnt about history of village and were surprised to know that village and fields were created after clearing the forests sixty years ago. Students interacted with the villagers and returned back.
	Products from the forests	Students would be able to know about the	Discussion about the various products obtained from forest like wood for fuel, fodder for animals, medicines, gums, fibres etc.	<b><u>LEVEL II</u></b> 1.How forests prevent floods?  2.Explain the role of forests in maintaining balance between oxygen and carbon dioxide in the atmosphere?  3.What are decomposers? Name any two of them.	
	Crown, canopy & understory	Students would be able to know about the things found in forest.	Scrapbook on the various animals and plants living in the forests.	<b><u>LEVEL III</u></b> 1.List five products we get	
	Floor of forests: humus	Students would be able to know about the characteristics of trees in the forest.	Activity: Formation of humus by digging a pit and putting vegetable waste.		
	Product obtained from forest.				
	Oxygen & carbon				

	dioxide balance			from forests?	
	Role of forest in maintaining balance in nature.	<p>Students would be able to know about the various products obtained from forest.</p> <p>Students would be able to know about the Role of forest in maintaining balance in nature</p>	Discussion about the Role of forest in maintaining balance in nature that is forest plays an important role maintaining balance of oxygen and carbon di- oxide through the process of respiration by animals and photosynthesis by animals. It also controls flood and pollution.	<p>2. Define:</p> <p>a)Producers</p> <p>b)Consumers</p> <p>c)Decomposers</p> <p>d)Humus</p> <p>3. How are forests important?(any three points)</p>	

## PROJECT: 1

**Students will perform the activity and analyze how the roots of the plants help in preventing soil erosion.**

**we have to do?**

To show that the roots of the plants help in preventing soil erosion.

**What is required?**

Six big plastic bottles, wood glue, a wooden board, scissors, soil, dry leaves, small plants or grass with roots, water and strings.

### **What do we need to know?**

Plants provide protective cover on the land and prevent soil erosion.

Plants slow down water as it flows over the land and this allows much of the rain to soak into the ground.

Plant roots hold the soil in position and prevent it from being blown or washed away. **How will you proceed?**

➤ Teacher's activity Teacher will explain how roots of plants can bind the soil and arrange for the materials for the experiment.

➤ Students' activity

1. Cut rectangular portions from sides of three of the big plastic bottles. A permanent marker can be used to draw the rectangle before it is cut.

2. Stick the bottles to the wood with wood glue making sure that the necks of the three bottles hang a little over the edge of the board.

Fill the first bottle with plain garden soil. Plant the grasses.

3. Fill the second bottle with soil and dry leaves and the third bottle with only soil. Press down soil in all bottles to make it compact.

4. Cut out cups from the other three plastic bottles. Make holes in the collection cups and hang them from the neck of the bottles having soil using strings.

5. Slowly pour around 250 ml water from the top on the soil in each of the three bottle and observe the water collected in the collection cups hanging from the neck of the bottles.

### **What have you observed?**

S. NO	COLLECTION BOTTLES	COLOUR OF WATER IN COLLECTION BOTTLES
1	First	
2	Second	
3	Third	

### **What you have learnt?**

The roots of the plants.....the soil and prevent..... **What**

### **more can we do?**

Compare the temperature using thermometer under a tree and on the open ground, in the afternoon. What do you observe? Why there is a difference in the temperature?

## PROJECT:2

<b>TLO</b>	Understands that forest and its products are being used everyday
<b>Activity</b>	From the Forest to Your House

We use many things from trees that may surprise you. With an adult, search around your home to find out how many items you use that come from trees. Place a check mark next to the items that you find. Have fun searching!

\_\_\_ cherries (fruit)

\_\_\_ cinnamon

toilet paper

\_\_\_ charcoal

\_\_\_ rolling pin

\_\_\_ wrapping paper

\_\_\_ almonds (nut)

\_\_\_ bay leaves

newspaper

\_\_\_ nutmeg (fruit)

\_\_\_ chewing gum (sap)

\_\_\_ clothes made with rayon

\_\_\_ couch

\_\_\_ apples (fruit)

\_\_\_ suntan lotion

\_\_\_ crayons (sap)

**CLASS: VII**

**SUBJECT: SCIENCE**

**CHAPTER: WASTE WATER STORY**

Learner Previous Knowledge	Uses of water, sources of water, water pollution
----------------------------	--

Target Knowledge for this Topic	<p>Treatment of polluted water</p> <p>Waste water treatment</p> <p>Waterborne diseases</p> <p>Sanitation</p>
---------------------------------	--

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS	Suggested activities to inculcate life skills
-------	--------------------	------------------------	-----------------------------------	--	---



FEBRUARY	Water our life line	Students would be able to know about the importance of water.	Video Showing working of waste water treatment plant or visit to any nearby Sewage treatment Plant.	<u>LEVEL I</u> 1. Write in brief the working of Waste water treatment plant. 2. What is dry Sludge? How it is obtained. 3. Why should oils and fats should not be released in drain? Explain. 4. Untreated human excreta is a health hazard. Explain.	Children will be asked to prepare Golden rules of good sanitation giving the chart and marker
	What is sewage?	Students would be able to know about the sewage and its constituent	Poster/chart making showing various daily life activities where water is used and contaminating agents.		
	Water Freshens Up-An Eventful Journey				
	Treatment of Polluted Water	Students would be able to know about the treatment of polluted water to make them usable.	Discussion about the importance of water along with its uses in daily life like water is used for bathing, cooking food, and other household activity.	<u>LEVEL II</u> 1. Name the steps in obtaining potable water from polluted water. 2. What role an active citizen should take to conserve drinking water. 3. What is sewage? Why it is harmful to discharge untreated sewage into rivers or seas?	
	Waste water Treatment Plant				
	Become an active citizen	Students would be able to know about the some housekeeping practices which will decrease	Discussion about the Sanitation at public places so that our environment becomes neat and	<u>LEVEL III</u> 1. Suggest any three activities from our daily	
	Better house Keeping Practices				

	Sanitation and Disease	pollutant in sewage.	clean.	life where water is used.	
	Alternative arrangement for Sewage Disposal	Students would be able to know about the sanitation at public places.		2.Suggest any three ways in which drinking water becomes contaminated.	
	Sanitation at Public Places			3.Name the chemicals used to disinfect water.	

## PROJECT: 1

### NAME OF THE ACTIVITY: TREATMENT OF POLLUTED WATER

#### MATERIALS REQUIRED:

Different kinds of dirt like grass /bits of leaves, dust (got by sweeping the floor), pieces of plastic (milk sachet), oil, detergent powder and few drops of ink or any color.

#### METHODOLGY OF ACTIVITY:

- ☐ Sample of polluted water is prepared by the teacher mixing the materials mentioned above in 2 litres of water.
- ☐ The contents are mixed well and placed in a closed container under the sun for 2 days to form a ‘Sample polluted water’.

□ Students are divided into four groups and a sample of 200 ml of polluted water is given to each group. □ Each group is asked to shake this mixture and pour a small sample into a test tube and label it as ‘SAMPLE 1 – BEFORE TREATMENT’

□ They are then asked to aerate the polluted mixture by pouring it in another container and back to the same container repeatedly several times in a day. (AERATION) □ Next day, when aeration is complete students are asked to take its sample in another test tube and label it as ‘SAMPLE 2 – AFTER AERATION’

□ Each group is then asked to take a funnel and a 500ml beaker and do the following.

□ A filter paper is folded to form a cone and placed in a funnel.

□ Layers of sand, fine gravel and medium sized gravel are arranged in the funnel. This funnel is placed above 500 ml beaker and is fixed to a funnel stand.

□ The remaining aerated liquid is poured into the funnel (above set up) and is collected in 500 ml beaker.[ Note: If the water is not clean this step is repeated till a clear water is obtained]

□ Again a sample of this clear filtered water is to be taken in a test tube and labelled as ‘SAMPLE 3 – AFTER FILTRATION’

□ A sample of filtered water is to be taken in another test tube and a chlorine tablet is added to it. The chlorine tablet is mixed well till the water turn clear. This is labelled as ‘SAMPLE 4 – AFTER CHLORINATION’.

□ Students are asked to smell all the samples.

□ A sample of filtered water is to be taken in another test tube and add crushed charcoal to it. Leave it for a day after labeling it as ‘SAMPLE 5 – AFTER ADDING CARBON’. Observe the same the next day by smelling it.

1. Is there any change in colour of the sample?
2. Did aeration change the colour and odour of the sample?
3. Can you find the materials removed by sand filter?
4. Did chlorine remove / change the colour?
5. How did the sample with charcoal smell the next day?

#### CURIOSITY QUESTIONS:

Will the water from industries and factories have same kind of pollutants?

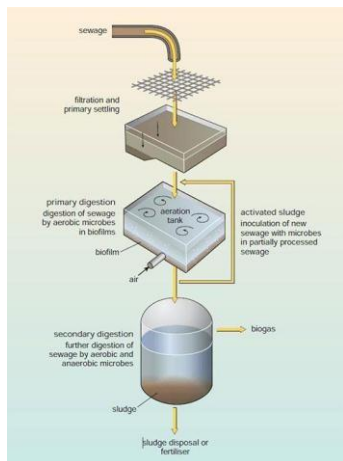
Can it be treated in the same way as the waste water from houses?

## ANSWER GUIDE:

- Will factories and industries use same kind of substances used at home?
- Are those substances useful or harmful to the environment?
- Should we follow other ways to get rid off them?

### PROJECT: 2

Identify the different steps studied by you in this diagram.



**Other activities** like identifying wastes which are being thrown in water and should not be and identifying better sanitation practices can be conducted to achieve other outcomes.

**Pedagogical tools:** Class room discussion, ppts and crossword can be used.

## MONTH WISE SPLIT UP SYLLABUS Class: VIII

**Subject: Science**

**Topic: Crop Production and Management**

Learner Previous Knowledge	Meaning of manure, fertilizers and humus Harvesting methods: threshing and winnowing Importance of soil for crops
----------------------------------	---

Target Knowledge for this topic	Crop production Agricultural practices Sowing, using manure and fertilizers, weeding, harvesting and storing of crops
---------------------------------------	---

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
APRIL	<p>Food</p> <p>Agricultural practices.</p> <p>Activities in agricultural practices</p> <p>Irrigation, fertilizers and manure</p> <p>Weeds</p> <p>Harvesting and</p>	<p>Students would be able to know about some agricultural practices that are involved for growing of crop</p> <p>Students would be able to know about the different steps in agricultural practices</p> <p>Students would be able to know about sources of irrigation and about manure</p> <p>Students would be able to know about some weeds and their harmful effect on plants.</p> <p>Students would be</p>	<p>Quiz</p> <p>Daily Practice</p> <p>Problem</p> <p>MCQ</p> <p>Peer Assessment</p> <p>Student teacher interaction,</p> <p>Wipro-G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys</p>	<p>Discussion about some agricultural practices that are involved for growing of crop along with their importance.</p> <p>Discussion about the activities during agricultural practices like preparation of soil using plough and cultivator, sowing seeds in the fields, adding manure, irrigation .</p> <p>Discussion about the different sources of irrigation like rivers, tube wells, canals and about use of manure and fertilizers their differences and importance for crops. Discussion about the weeds their impact on crop production and the ways to reduce loss to crops from weeds.</p> <p>Discussion about theharvesting of the crops when they are mature and methods and tools involved in it and also about the proper way to store crops so that minimum loss occurs to crops.</p> <p>Discussion about the Kharif and Rabi crops their climatic condition along with their examples and the areas where they grows</p>	<p>LEVEL 3</p> <p>How soil gets affected by continuous plantation of crops in a field?</p> <p>Name implements used for threshing and harvesting</p> <p>LEVEL 2</p> <p>Why should we use seed drill for sowing seeds?</p> <p>Why should we rear animals?</p> <p>LEVEL 1</p> <p>Name any two Rabi and two Kharif crops with examples?</p> <p>How excessive weeds destroy our crops?</p>

	storage	able to know about the method of harvesting crops and the way to store crops.			
	Types of crops	Students would be able to know about the different types of crop grown in different climate.			

## CHAPTER 1 CROP PRODUCTION AND MANAGEMENT

### SUB TOPIC: MANURE PREPARATION

#### EXPERIENTIAL LEARNING

ACTIVITY AIM: To enable the students how prepare manure(vermicompost)

PRINCIPLE: This process is mainly prepared to add nutrients to the soil. Compost is a natural fertilizer that allows an easy flow of water and to the growing the plants. The earthworms are mainly used in this process as they eat the organic matter and produce castings through their digestive systems

#### MATERIALS REQUIRED

Water.

Cow dung.

Thatch Roof.

Soil or Sand.

Gunny bags.

Earthworms.

Weed biomass

A large bin (plastic or cemented tank).

Dry straw and leaves collected from paddy fields. Biodegradable wastes collected from fields and kitchen.

#### PROCEDURE

- ✓ To prepare compost, either a plastic or a concrete tank can be used. The size of the tank depends upon the availability of raw materials.
- ✓ Collect the biomass and place it under the sun for about 8-12 days. Now chop it to the required size using the cutter.
- ✓ Prepare a cow dung slurry and sprinkle it on the heap for quick decomposition.
- ✓ Add a layer (2 – 3 inch) of soil or sand at the bottom of the tank.
- ✓ Now prepare a fine bedding by adding partially decomposed cow dung, dried leaves and other biodegradable wastes collected from fields and kitchen. Distribute them evenly on the sand layer.
- ✓ Continue adding both the chopped bio-waste and partially decomposed cow dung layer-wise into the tank up to a depth of 0.5-1.0 ft.
- ✓ Once, after adding all the bio-wastes, release the earthworm species over the mixture and cover the compost mixture with dry straw or gunny bags.
- ✓ Sprinkle water on a regular basis to maintain the moisture content of the compost.
- ✓ Cover the tank with a thatch roof to prevent the entry of ants, lizards, mouse, snakes, etc. and protect the compost from rainwater and direct sunshine.
- ✓ Have a frequent check to avoid the compost from overheating. Maintain proper moisture and temperature. **RESULT** After the 24th day, around 4000 to 5000 new worms are introduced and the entire raw material is turned into the vermicompost.

**ADVANTAGES OF VERMICOMPOSTING** The major benefits of vermicomposting are:

- ✓ Develops roots of the plants.
- ✓ Improves the physical structure of the soil.

- ✓ Vermicomposting increases the fertility and water-resistance of the soil.
- ✓ Helps in germination, plant growth, and crop yield.
- ✓ Nurtures soil with plant growth hormones such as auxins, gibberellic acid, etc

**Class:8**

**Subject: Science**

**Topic: Microorganisms: Friend and foe**

Learner Previous Knowledge	Living things can exist in different habitats and environments.
Target Knowledge for this topic	Know what microorganisms are; Types of microorganisms Investigate about the various types of microorganisms; Advantages and disadvantages of microbes

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--



April	Types of microorganism	Students would be able to know about different forms of living organism along with microorganism.	Quiz Daily Practice Problem MCQ Peer Assessment Student teacher interaction, Wipro-G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/loud reading, collaborative learning, Research work/surveys	Discussion about the various forms of life on earth ranging from microscopic to huge whale. Discussion about the various groups of microorganism like bacteria, fungi, virus, algae, protozoa along with their examples	LEVEL 3 What are the harmful effects of microorganism?  What are the useful activities of microorganism
	Habitat of microorganism.	Students would be able to know about the various groups of microorganism.		Discussion about the different habitats of microorganism like soil, air, and water ie; microorganisms are present everywhere where life exists.  Discussions about the usefulness of microorganism in different fields of life along with examples like microorganism are used in the production of antibiotics, vaccine, alcohol, in bakery industries etc.	LEVEL 2 What is nitrogen cycle?  What are antibiotics?  LEVEL 1 what are microorganism?
	Uses of microorganism.	Students would be able to know about the different habitat of microorganism		Discussion about the harmful activities of microorganism like they causes diseases in animals, human and plants, they spoil food items etc.  Discussion about the nitrogen cycle along with ray diagram and its importance in increasing fertility of soil and in agriculture,	Name the various groups of microorganism.
	Harmful	Students would be			

	Microorganism.	able to know about the various usefulness of microorganism			
	Nitrogen cycle	Students would be able to know about the harmful effect of microorganism			

# CHAPTER 1 MICRO-ORGANISMS FRIEND AND FOE

## SUB TOPIC: FRIENDLY MICRO-ORGANISM – YEAST

### EXPERIENTIA LEARNING

ACTIVITY AIM: To enable the students to learn the role of a friendly micro-organism.

### MATERIALS REQUIRED

Beaker, sugar, water, yeast

### PROCEDURE

The students will be divided into four groups.

□ Each group will be asked to fill a beaker with three-fourth of water.

□ Two –three teaspoons of sugar will be dissolved in it.

□ Half a teaspoon of yeast will be added to it.

□ Students will be advised to keep the setup covered and kept undisturbed for 4 –5 hours.

□ They will be asked to smell the solution and record their observation.

□ The students will be able to understand the role of micro –organisms in food processing.

**Class:8**

**Subject: Science**

**Topic: SYNTHETIC FABRIC AND PLASTICS**

Learner Previous Knowledge	<ul style="list-style-type: none"> <li>❑ What is a fibre?</li> <li>❑ What are different types of fibres?</li> <li>❑ What are plastics?</li> <li>❑ What are natural and synthetic fibres?</li> <li>❑ Why are synthetic fibres required?</li> </ul> <p>This lesson requires previous knowledge of -</p>
Target Knowledge for this topic	<p>Types of fibre</p> <p>Characteristics of synthetic fibres, Properties of plastics</p>

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--

May/June	Types of fibre	Students would be able to know about the different types of fibres.	Quiz Daily Practice Problem MCQ Peer Assessment Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	<p>Discussion about the different types of natural and synthetic fibres along with their source and uses in daily life</p> <p>Discussion about the different types of synthetic fibres like rayon, nylon, polyester, acrylic their source and their uses in daily life.</p> <p>Discussion about the different characteristics of synthetic fibres like synthetic fibres are durable, less expensive, easy to maintain, strong, easy to handle etc. .</p> <p>Discussion about the different types of objects that are made up of plastics and types of plastics like thermoplastic and thermosetting plastics and objects made from these plastics.</p> <p>Discussion about the properties of plastics like plastics is nonreactive, plastics are light, durable and strong these properties make plastics very useful.</p> <p>Discussions about the hazard caused by plastics like plastics are non-biodegradable.</p>	<p>LEVEL 3 Explain why should we avoid plastics as far as possible?</p> <p>What does 4 R principal means?</p> <p>LEVEL 2 What are the properties of plastics?</p> <p>What are the differences between thermoplastic and thermosetting plastics/</p> <p>LEVEL 1 What are the differences between natural and synthetic fibres.</p> <p>What are the properties of synthetic fibres?</p>
	Synthetic fibres	Students would be able to know about the different types of synthetic fibres and their uses.			
	Characteristics of synthetic fibres.	Students would be able to know about the different characteristics of synthetic fibres			
	Plastics.	Students would be able to know about different types of plastic and their uses.			

	Properties of plastics	Students would be able to know about the properties of plastics.			
	Plastics and environment.	Students would be able to know about the disadvantage of plastics disposal.			

## **CHAPTER : SYNTHETIC FABRIC AND PLASTICS**

### **SUB TOPIC: CHARACTERISTICS OF THE SYNTHETIC FIBRES EXPERIENTIA LEARNING**

**ACTIVITY AIM:** To enable the students to understand the properties of both natural and synthetic fibres. **MATERIALS**

**REQUIRED:** Beakers, small pieces of silk cloth, cotton cloth and polyester cloth, water

#### **PROCEDURE:**

Students will be divided into three groups.

☐ Three beakers A, B, C will be half filled with water and handed over to each group.

☐ The students will be soaking three small pieces of the cotton, silk, polyester cloths with same dimension in the beakers A, B and C, respectively.

☐ The cloth pieces will be taken out and dried under sun for few minutes.

☐ The remaining water in each beaker will be measured using a measuring jar and the

observations will be recorded on the basis of the time taken for drying and the amount of water

left in each beaker.

☐ The students will learn and conclude through their experience the advantages of

synthetic fibres over natural fibres.

**Class:8**

**Subject: Science**

**Topic:** MATERIALS METALS AND NON METALS

Learner Previous Knowledge	Different natural occurring substances
Target Knowledge for this topic	Basic introduction to Periodic Table and explain with reference to metals only; Classification of elements: Know that elements can be classified as metals, non- metals or metalloids; Physical and chemical properties of metals and non-metals Study the physical and chemical properties of metals and non-metals; Uses Find out about the various uses of metals and non-metals;

MONTH	GIST OF THE	TARGET LERNING	Techniques to	TEACHING LEARNING	QUESTION ON TLOs, HOTS & CORRELATION WITH
-------	-------------	----------------	---------------	-------------------	---

	LESSON	OUTCOME	be used:	ACTIVITY PLANED	OTHER SUBJECTS
--	--------	---------	----------	-----------------	----------------

July	<p>Materials Metals and non-metals Properties of metals.</p> <p>Physical properties of nonmetals.</p> <p>Chemical properties of metals and nonmetals.</p>	<p>Students would be able to know about the physical properties of metals</p> <p>Students would be able to know about the physical properties of non-metals.</p> <p>Students would be able to know about chemical properties of metals and nonmetals.</p>	<p>Quiz Daily Practice Problem MCQ Peer Assessment Student teacher interaction, Wipro-G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/loud reading, collaborative learning, Research work/surveys</p>	<p>Discussion about the physical properties of metals on the basis of their hardness, metals are malleable that is they can be beaten into thin sheets, metals are ductile, metals are lustrous, metals are sonorous, metals are good conductor of heat and electricity.</p> <p>Discussions about the physical properties of non-metals like nonmetals are nonmalleable nonlustrous, nonsonorous, non-ductile, bad conductor of heat and electricity along with examples.</p> <p>Discussion about the chemical properties of metals and non-metals like metals react with air (oxygen) to form metal oxide which basic in nature, non-</p>	<p>LEVEL 3 Why colour of the copper sulphate solution changes when iron is mixed in it?</p> <p>Why we do not store pickles in aluminium utensils?</p> <p>LEVEL 2 What is malleability?</p> <p>What is the nature of non-metallic acid?</p> <p>LEVEL 1 Name a metal liquid at normal room temperature.</p> <p>What are the uses of metals?</p>
------	---	---	---	--	---

	Uses of metals and non-metals.	Students would be able to know about the different uses of metals and nonmetals.	<p>metals forms oxide which is acidic in nature metals react with water to form hydroxide, metals react with acid to form salt and hydrogen gas which burns with pop sound generally nonmetals do not react with water or acids.</p> <p>Discussions about the different uses metals and non-metals like metals are used in making automobile car train.</p>	
--	--------------------------------	--	---	--

## **CHAPTER : MATERIALS METALS AND NON METALS**

### **SUB TOPIC: DUCTILITY, MALLEABILITY AND HARDNESS**

#### **EXPERIENTIAL LEARNING**

**ACTIVITY AIM:** To enable the students to understand the physical properties of metals and non-metals.

**MATERIALS REQUIRED:** Aluminium foil, copper wire, metallic (mosquito) mesh, zinc granules, iodine crystals etc.

#### **PROCEDURE:**

Students will be divided into three groups.

- ☐ Each group will be instructed to bring aluminium foil or sheets, copper wire, a piece of aluminium (mosquito) mesh, respectively.



- ☐ Teacher will bring zinc granules and iodine crystals and hammer the zinc granules making the students to observe the effect.
- ☐ Iodine crystals will be beaten up using a duster and the effect will be observed by the students.
- ☐ Students will be asked to compare the effects of both the activities.
- ☐ The students will compare the hammered zinc granules with the items they have brought.
- ☐ The teacher will ask the following questions:

### **CURIOSITY QUESTION:**

Have you ever wondered about the shapes of some metals like copper and silver used in the making of utensils, jewellery and electrical appliances?

### **ANSWER GUIDE:**

- o Name the material which turned into thin sheet after hammering. Which group has brought similar type of material?
- o How can the same aluminium be drawn into wires in the case of mosquito mesh?
- o Have you ever thought about the processes behind them?
- o If these metals are made into sheets and wires, why can't the iodine granules be made into sheets and wires?

**Class:8**

**Subject: Science**

**Topic: COAL AND PETROLEUM**

Learner Previous Knowledge

This lesson requires previous knowledge of

- ☐ Name different types of materials you use in daily life.
- ☐ Classify them as naturally occurring and man made materials.
- ☐ What are natural resources?
- ☐ Can we use our natural resources forever?

-

Target Knowledge for this topic	Preparation, properties and uses of coal and petroleum. Describe the uses of coal and petroleum. list the various products obtained from coal and petroleum..
---------------------------------	---

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
July	Resources	Students would be able to know about the different types of resources found on the earth.	Quiz Daily Practice Problem MCQ Peer Assessment	Discussion about the natural and man-made resources along with examples like animals, plants. Car bike etc.	LEVEL 3 What is coke? Write its properties and uses.
	Exhaustible and inexhaustible natural resources	Students would be able to know about the Exhaustible and inexhaustible natural resources	Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	Discussion about the Exhaustible and inexhaustible natural resources along with examples like coal and petroleum exhaustible whereas air water and sunlight inexhaustible.	What are the harmful effects of burning fossil fuels?
	Coal	Students would be able to know about the coal its properties and uses.		Discussion about the history of coal and its formation. Coal is used as fuel for houses and industries and is processed to get various products like coke, coal tar and coal gas and their uses.	LEVEL 2 Where is petroleum found in our country?
				Discussion about the uses of	What are fossil fuels?
					LEVEL 1 Name two cleaner fuels.
					Name two exhaustible natural resources.

	Petroleum.	Students would be able to know about petroleum and its uses.		<p>petroleum in automobiles. Formation of petroleum and various constituent obtained during refining of petroleum like petrol, diesel, lubricating oil paraffin wax, and liquefied natural gas along with their uses in different fields.</p> <p>Discussion about thenatural gasses like CNG and ANG Compressed natural gas are used as fuel in industries and in automobiles CNG are supplied through pipelines in some parts of our country for domestic uses.</p>	
	Natural gas	Students would be able to know about natural gas and its uses.			

## **CHAPTER : COAL AND PETROLEUM**

### **SUB TOPIC: INEXHAUSTIBLE AND EXHAUSTIBLE RESOURCES**

#### **EXPERIENTIA LEARNING**

**ACTIVITY AIM:** To enable the students to understand the importance of inexhaustible and exhaustible resources

**MATERIALS REQUIRED:** Basket, chocolates etc.

#### **PROCEDURE:**

Students will be divided into groups of seven.

- ☐ These seven students will be further divided into three sub groups with four students

labeled as generation I, two students labeled as generation II and one student as generation III (4, 2, 1).

Each group will be provided with a basket full of chocolates and will be asked to consume.

The consumption will be strictly based on generations I, II, III, respectively.

Finally, the students will be advised to check among themselves, the number of chocolates consumed by generation I, generation II, and availability/non-availability of chocolates for generation III.

The students will be advised to compare the chocolates with the non-renewable resources and to think about the availability of these resources for the future generation.

The teacher will instruct the students to suggest some measures how its wastage could be controlled and could be made available for future generation.

### CURIOSITY QUESTIONS:

What will happen if all the natural resources are exhausted?

### ANSWER GUIDE:

o Why can't we depend upon the inexhaustible resources completely?

**Class:8**

**Subject: Science**

**Topic: COMBUSTION AND FLAME**

Learner Previous Knowledge	Generic knowledge of different types of fuels used at home, in automobiles and in industries
Target Knowledge for this topic	<b>Combustion</b> Understand what combustion is; Experiment whether a substance is combustible or not; Find out the conditions necessary for combustion; Find out about the different types of combustion; Study the different zones of a flame and their characteristics; Investigate the functioning of a fire extinguisher; <b>Fuel</b>
	Investigate about the different types of fuel and so understand what a fuel is;(Connect this with the concept of fossil fuels) Understand what is the efficiency of fuel; Study the characteristics of an ideal fuel; Learn and find out what happens when a fuel burns;

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--

July	Combustion	Students would be able to know about the condition of combustion and condition necessary for combustion	Quiz Daily Practice Problem MCQ Peer Assessment Student teacher interaction, Wipro-G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/loud reading, collaborative learning, Research work/surveys	<p>Discussion about the definition of combustion that “A chemical process in which substance react with oxygen to heat is called combustion” the condition necessary for combustion that is presence of combustible material, presence of air, and attainment of ignition temperature (Lowest temperature at which substance catches fire)</p> <p>Discussions about the types of combustion rapid combustion which occur rapidly, spontaneous combustion occur spontaneously.</p> <p>Discussion about the flame with activity of burning candle flame outermost upper zone of flame having blue colour is hottest middle zone having yellow colour is moderately hot while innermost black zone is least hot.</p> <p>Discussion about the different types of fuel their calorific value</p>	<p>LEVEL 3 Explain acid rain.</p> <p>how can we control fire?</p> <p>Draw well labelled diagram of a burning candle.</p> <p>LEVEL 2 What are the conditions necessary for burning of fuel?</p> <p>What is calorific value of fuel?</p> <p>LEVEL 1 what is combustion?</p> <p>What is ignition temperature?</p>
	Types of combustion.	Students would be able to know about the types of combustion.			
	Flame	Students would be			

	Fuel and Fuel efficiency and harmful effect of burning fossil fuel.	able to know about the different parts of flame  Students would be able to know about the fuel and its efficiency and harmful effect of burning fossil fuel.		gaseous fuels are good because they have more calorific value.	
--	---	--	--	--	--

## CHAPTER : COMBUSTION AND FLAME

### SUB TOPIC: IGNITION TEMPERATURE

#### EXPERIENTIA LEARNING

**ACTIVITY AIM:** To enable the students to understand the term “ignition temperature”

**MATERIALS REQUIRED:** Wood, Paper, Chalk piece, Igniter etc.

#### PROCEDURE:

Students will be given a piece of wood, a small piece of paper and an igniter.

☐ They will be asked to draw three boxes on the table with each box carrying the names

“wood”, “paper” and “LPG”, respectively.

☐ Wood and paper will be kept in their respective boxes and the students will be advised to

imagine an “LPG” cylinder is kept in the last box.

☐ The students will start thinking and analyze the reason why the given materials are kept

in separate boxes.

### CURIOSITY QUESTION:

Have you ever seen the villagers igniting the wood by using the gas lighter?

### ANSWER GUIDE:

- o Why can't they make use of the gas lighter to fire the wood?
- o If you try to burn all these substances by producing a single spark in your igniter, which substance will catch fire first?
- o Why is the wood not able to catch fire at first?
- o Is the heat /temperature required by the wood same as that of paper and LPG?

**Class:8**      **Subject: Science**      **Topic: CONSERVATION OF PLANTS AND ANIMALS**

Learner Previous Knowledge	Habitats & Adaptations; Food chains and food webs; How human activities have affected the biodiversity of different habitats
Target Knowledge for this topic	Biodiversity and its importance Understand what biodiversity is and why it is important; Destruction and conservation of ecosystem Find out the various factors responsible for destruction of the ecosystem and how can we conserve it; Endemic species Investigate and find out the various endemic species and also about how the data gets recorded for all the endangered species; identify endangered species in the state. Evaluate reasons for endangerment and efforts (and impact of efforts) towards conservation that are being currently taken up.

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--

August	Deforestation and its causes	Students would be able to know about the causes of deforestation.	Quiz Daily Practice Problem MCQ Peer Assessment Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	Discussion about the various causes of deforestation like clearing of the forest for building colonies, school, roads due to increase in human population.	LEVEL 3 Why project tiger was launched?
	Consequences of deforestation	Students would be able to know about the consequences of deforestation		Discussion about the consequences of deforestation Like frequent drought, flood, and desertification, loss of animal's habitat and loss of fertility of soil.	What is biosphere reserve? Give two examples.  LEVEL 2 What are the consequences of deforestation?  What is reforestation?
	Conservation of forest and wild life.	Students would be able to know about the need and ways to conserve animals and wildlife.		Discussion about the need and ways to conserve animals and wildlife by development of protected areas like Sanctuary, National parks and Biosphere reserve along with some examples of these areas of our country.  Discussion about the Flora and Fauna of our country along with examples of some plants and animals found in our country.	LEVEL 1 What is deforestation?  Name two national parks of our country.
	Flora and Fauna	Students would be		Discussion about the endemic species of plants and animals along with examples and red data book which	



		able to know about some Flora and Fauna of our country.		includes endangered species.	
	Endemic species and Red data book	Students would be able to know about the endemic species and red data book.		Discussion about the importance of reforestation for maintenance of ecosystem.	
	Reforestation	Students would be able to know about the reforestation and its importance.			

## CHAPTER : CONSERVATION OF PLANTS AND ANIMALS

**Project 1-** Animal life is also affected by deforestation, how? List the points and discuss them in your class.

**Project 2** - To find out the number of national parks, wildlife sanctuaries and biosphere reserve in your district, state and country.

**Project 3** - List factors disturbing biodiversity of your area by human activities and how to check these activities. Prepare a brief report.

**Project 4-** Try to identify the flora and fauna of your area and list them.

**Project 5-** To find out endemic plants and animals of the region where you live.

**Project 6-** Visit Zoo of animal and plant. are better than natural habitat animals comfortable in artificial habitat.

**Project 7-** Study the biodiversity in your school campus and prepare a detailed report with photographs and sketches of flora and fauna.

**Class:8****Subject: Science****Topic:** CELL STRUCTURE AND FUNCTION

Learner Previous Knowledge	In the living organisms, Cells are basic structural units. All basic chemical and physiological functions like repairing, growth, excretion movement, immunity, communication, and digestion - are happening inside of cells.
Target Knowledge for this topic	<ul style="list-style-type: none"><li>☐ list the main components of cells;</li><li>☐ summarise the structure and function of the different components;</li><li>☐ Define organelles present in both animal and plant cells;</li><li>☐ Describe the functions of the various organelles in the cell;</li><li>☐ Explain the difference between prokaryotic and eukaryotic cells.</li></ul>

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--

August	Cell and its discovery	Students would be able to know about the cell and its discovery.	Quiz Daily Practice Problem MCQ Peer Assessment Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	Discussion about the discovery of cell by Robert Hooke from cork cell and its definition that is cell is the structural and functional unit of life.	LEVEL 3 What are the difference between plant cell and animal cell?  What are the difference between prokaryotes and eukaryotes?
	Cell shape and size.	Students would be able to know about the different types of cell along with its size.		Discussion about the different shapes of the cell lie Irregular shape amoeba, Spindle shape muscles shape, Comma shape bacteria, Rod shape bacteria etc. along with the size that is Smallest size bacteria, Largest –ostrich egg, longest- nerve cell.	LEVEL 2 What is the function of plasma membrane?  what are the function of nucleus of cell?
	Cell structure and function and cell organelles.	Students would be able to know about the general structure of cell along with its some parts.		Discussion about the cell structure that is all cells have nearly same cell organelles like Plasma membrane along with its definition and function that is it allow the movement of substance both inward and outward Cytoplasm is the region between cell membrane and nucleus and contains many cell organelles and Nucleus lies in the centre and controls all metabolic activities of the cell.	LEVEL 1 Who discover cell?  What is cell?
	Plant cell and animal cell	Students would be able to know about the difference between animal cell and plant cell.		Discussion about the difference between plant cell and animal cell based on cell wall, chloroplast, vacuoles types of food they store.	

## CHAPTER : CELL STRUCTURE AND FUNCTION

### SUB TOPIC: PARTS OF THE CELL

### EXPERIENTIA LEARNING

**ACTIVITY AIM:** To enable the students to recall the names of the cell organelles and their functions.

**MATERIALS REQUIRED:** Bread slice, cheese spread, pepper granules, cut pieces of vegetables.

**PROCEDURE:**

The students will be divided into four groups.

- Each group will be instructed to bring a bread slice, one cheese spread, 5–6 peels of onion, a thin cut slice of carrot, a thin cut piece of tomato, a cut piece of capsicum and half a spoon of pepper granules.
- The teacher will have a brief discussion with the students.
- Each group will be suggested to make a model of cell using the items they have brought.
- As the students engage themselves, the teacher will be asking the following questions to them:

**CURIOSITY QUESTION:**

What are the items that are spread on the bread slice called?

**ANSWER GUIDE:**

- o To which organelle can the cheese spread be compared?
- o Which organelle does the carrot represent? What is its function?
- o Name the cell organelle which is referred to by capsicum.
- o Name the type of cell.

**Class:8**

**Subject: Science**

**Topic: REPRODUCTION IN ANIMALS**

Learner Previous Knowledge	Life processes: Movement, digestion and respiration in animals
Target Knowledge for this topic	Reproduction Study various modes of asexual reproduction (Budding, Binary fission) and sexual reproduction in animals; Learn about different animals based on the process of reproduction and classify them accordingly (viviparous and oviparous)

MONTH	GIST OF THE LESSON	TARGET LEARNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANNED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	-------------------------	------------------------	------------------------------------	--

September	<p>Reproduction and modes of reproduction</p> <p>Asexual reproduction.</p> <p>Sexual reproduction.</p>	<p>Students would be able to know about the definition and modes of reproduction in animals.</p> <p>Students would be able to know about the asexual reproduction like binary fission and budding.</p> <p>Students would be able to know about the sexual reproduction in human beings.</p>	<p>Quiz</p> <p>Daily Practice Problem</p> <p>MCQ</p> <p>Peer Assessment</p> <p>Student -teacher interaction,</p> <p>Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix),</p> <p>silent/ loud reading,</p> <p>collaborative learning, Research work/surveys</p>	<p>Discussion about the definition of reproduction that is producing off springs of its own kind and difference between asexual and sexual reproduction.</p> <p>Discussion about the definition of asexual reproduction along with explanation of binary fission in amoeba and budding in hydra and yeast.</p> <p>Discussion about the sexual reproduction in human beings along with explanation of male reproductive system and female reproductive system along with their figure and explanation of function main parts like testis in male and ovary in female.</p> <p>Discussion about the definition and site of fertilisation in human that is fusion of male gamete sperm and</p>	<p>LEVEL 3</p> <p>Where does embryo develop in human? Name the tissue by which it gets its nourishment.</p> <p>LEVEL 2</p> <p>Name the primary sex organs of male and female human?</p> <p>Differentiate between asexual and sexual reproduction?</p> <p>LEVEL 1</p> <p>What is reproduction?</p> <p>What is fertilisation?</p>
	<p>Fertilisation in human.</p> <p>Development of embryo.</p>	<p>Students would be able to know about the fertilisation in human.</p> <p>Students would be able to know about the development of embryo in human.</p>		<p>female gamete ova is fertilisation and it occurs in fallopian tube or oviduct.</p> <p>Discussion about the development of embryo in uterus of female along with some developmental stage that is foetus and how it obtains its food.</p>	

## **CHAPTER : REPRODUCTIUON IN ANIMALS**

### **Project I**

**SUB TOPIC:** Metamorphosis in Frogs

#### **EXPERIENTIA LEARNING**

**ACTIVITY AIM:** To observe Metamorphosis in Frogs

**MATERIALS REQUIRED:** Pond water, Glass jar, Observation book, Pen and Pencil

#### **PROCEDURE:**

Students will be taken near the garden pond in which differenttypes of aquatic animals like fishes, frog, water insects etc are present.The students will be asked to collect fresh fertilised eggs along withpond water in glass jars. These eggs will be subjected to theobservation study in the Biology lab.

#### **Observation:**

The students will be asked to note down their observations on dailybasis. They will be provided best possible chance to experiencemetamorphosis and different stages like larva with two legs, larvawith four legs and froglets will be identified by the students. Theywill be guided to make an observation table and sketch the diagrams.They will be advised to release the froglets back to the pond withoutharming them by which they will get to know never to disturb ourecosystem. **Project II**

**SUB TOPIC:**Oviparous animals

**ACTIVITY AIM:** To observe different size and shapes of eggs of various animals.

**MATERIALS REQUIRED:** Eggs of small creatures, Magnifying glass, Observation book, Pencil and eraser

#### **PROCEDURE:**

Collect small eggs of harmless creatures. Ask the students to sketchthe shape of egg of each animal; compare their sizes and shapes;notethem down in observation books. Make a list of animals which layeggs. Try to procure clippings of these animals and paste their eggsbeneath and make an oviparous album.

**Class:8****Subject: Science****Topic: REACHING THE AGE OF ADOLESCENCE**

Learner Previous Knowledge	Living organism produce young one of their own kind. Reproduction help in the continuity of life from one generation to the next. The ability to produce new individual is known as reproduction. Changes that take place in the human body after which a person becomes capable of reproduction.
Target Knowledge for this topic	To understand the adolescence and puberty, changes which occur at this stage and the reason for the change, Reproductive phase in human, sex determination in a baby, other hormones of our body, reproductive health.

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--

September	Adolescence and puberty.	Students would be able to know about the definition of adolescence and puberty.	Quiz Daily Practice Problem MCQ Peer Assessment Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	Discussion about the adolescence and puberty along with their definition that is period of life when body undergoes changes.	LEVEL 3 Explain how sex is determined in human child.
	Changes at puberty.	Students would be able to know about the changes that occur in them during puberty.		Discussion about the changes that occur in them during puberty that is Increase in the height of boys and girls, is nearly completed at the age of 18 years, change in body shape like chest and shoulder size in girls and boys, Change in voice of boys and girls, Development of their sex organs etc.	What type of diet is necessary for adolescence?
	Secondary sexual character.	Students would be able to know about the secondary sexual character in boys and girls.		Discussion about the secondary sexual character in boys like Growth of beard, Hairs on chest, in girls Enlargement of breast, growth of pubic hairs and hair under arm in both boys and girls these changes are controlled by male and female hormone.	LEVEL 2 What are the secondary sexual characters of boys?  What are the changes that occur in boys and girls during adolescence?
	Sex determination in new born baby. Development of embryo.	Students would be able to know about the reason why new born baby is boy or girl.		Discussion about the sex determination in child that is sex in human is determined by 23 <sup>rd</sup> pair of chromosome father. If a child receives X chromosome from father it becomes girl and if it receives Y chromosome from father it becomes boy.	LEVEL 1 Name the sound producing organ of man.  Name the male and female hormone.

## CHAPTER : REACHING THE AGE OF ADOLESCENCE

### SUB TOPIC: NUTRITIONAL NEEDS OF ADOLESCENTS

### EXPERIENTIA LEARNING

**ACTIVITY AIM:** To enable the students to realize the importance of their nutritional needs.



**MATERIALS REQUIRED:** Charts, Sketch pens, Sketch pencils.

**PROCEDURE:**

Students will be instructed to prepare charts or posters which carry the details of the balanced diets.

☞ They will be guided to show the healthy breakfast, lunch and supper to create an awareness among the youngsters about the food that should be consumed during the transition period.

☞ The best charts will be pasted in the classroom and the students will be allowed to talk about the need of healthy food for their growth and development.

**CURIOSITY QUESTION:**

Does anyone have a dream of becoming a model or body builder?

**ANSWER GUIDE:**

o What happens to your dream if you eat junk foods?

o If you don't intake the actual requirement of required nutrients, what will be its consequences?

**Class:8**

**Subject: Science**

**Topic: FORCE AND PRESSURE**

Learner Previous Knowledge

Force, friction and work  
Types of force  
Understand types of force;

Target Knowledge for this topic	<p>Force &amp; Pressure-Recap of force and its effects; The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion.</p> <p>Different type force i.e. contact and non-contact forces.</p> <p>Pressure and its effects</p> <p>Find out what is pressure; Calculate pressure exerted by a body; Investigate about how pressure can be applicable in the daily life; Learn about how liquid and air exerts pressure; Find out how liquid pressure can be applied in the daily life; Measure the liquid and atmospheric pressure.</p>
---------------------------------	--

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
October	<p>Force.</p> <p>Effect produced by force.</p>	<p>Students would be able to know force and its definition</p> <p>Students would be able to know about the changes</p>	<p>Quiz</p> <p>Daily Practice</p> <p>Problem</p> <p>MCQ</p> <p>Peer Assessment</p> <p>Student teacher interaction,</p> <p>Wipro-G.O.s(web chart, flow chart and differentiation table,</p>	<p>Discussion about the force along with its definition that is an external factor that cause the body to move to stop the moving body or to change the direction of moving body.</p> <p>Discussion about the effect produced by force that is it can move the body, it can stop the moving body, it can change the direction of</p>	<p>LEVEL 3</p> <p>What are the factor affecting pressure?</p> <p>Why dams have broad wall at the base?</p> <p>LEVEL 2 what are the effect produced by force?</p> <p>What is pressure?</p> <p>LEVEL 1</p> <p>What is force?</p> <p>Name two non-contact force?</p>

	Types of force.	produced by force. Students would be able to know about the	compare-contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	moving body and can change the shape of body.  Discussion about the contact that is muscular and friction force and noncontact force that is Magnetic and Electrostatic force.	
	Pressure.	Students would be able to know about the different types of forces.		Discussion about the definition and the factor affecting pressure on the body and its application in daily life	
	Liquid and atmospheric pressure.	Students would be able to know about the definition and importance of pressure.		Discussion about the factor affecting pressure in liquid and its application in daily life and definition of atmospheric pressure along with its value at sea level that is 760mm Hg	
		Students would be able to know about the liquid and atmospheric pressure.			

**CHAPTER : FORCE AND PRESSURE SUB TOPIC: TYPES OF FORCE**

**EXPERIENTIA LEARNING**

**ACTIVITY AIM:** To enable the students to understand the different types of force.

**MATERIALS REQUIRED:** A tennis ball, balloons.

**PROCEDURE:**

❑ MUSCULAR FORCE:

o Students will be asked to do arm wrestling.

❑ FRICTIONAL FORCE AND GRAVITATIONAL FORCE: o

A tennis ball will be thrown upwards by a student.

o Each time the ball will be thrown to different heights.

❑ ELECTROSTATIC FORCE:

o Each student will be given a balloon and will be asked to inflate it and tie it. o The inflated balloon will be rubbed vigorously against their palm.

o The rubbed balloon will be brought close to their hair and the students will be asked to observe.

❑ The students experience and learn the different types of force.

**CURIOSITY QUESTION:**

Why is the ball always moving down even though it is thrown upwards at different heights?

**ANSWER GUIDE:**

o While falling down, does the ball remain in contact with the ground for a longtime? Why?

o Where are you applying force in the case of arm wrestling? o Is there any force acting between the balloon and the hair?

**Class:8**

**Subject: Science**

**Topic: FRICTION**

Learner Previous Knowledge	Any push or pull is called force. Friction is a Contact Force
Target Knowledge for this topic	Friction: What is friction? Causes of Friction. Advantages and disadvantages of friction. Ways to minimise and increase friction.

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
October	Friction.  Factor affecting friction.	Students would be able to know definition of friction.  Students would be able to know about the factor affecting friction. Students would be able to know about the  Students would be able to know about	Quiz Daily Practice Problem MCQ Peer Assessment Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	Discussion about the definition of friction that is opposite force that tends to stop the moving body is called friction.  Discussion about the factor affecting friction that is nature of the surface (rough surface have more friction and smooth surface have less friction)  Discussion about the importance of friction that is its advantage like It help us to walk, It help to write on blackboard and its disadvantage like It tears soles of shoes, It damages parts of	LEVEL 3 How can we minimise friction?  What are the modifications in fish to reduce friction offered by water?  LEVEL 2 What are the factors affecting friction?  What are the advantages and disadvantages of friction?  LEVEL 1 What is friction?  Name the different types of

	Friction a necessary evil.	the importance of friction in daily life.		machine.	friction.
	Reducing friction.	Students would be able to know about the ways to reduce friction.		Discussion about the method to reduce friction by applying lubricants, by making surface smooth by using ball bearing.	
	Fluid friction.	Students would be able to know about the friction offered by fluid and air.		Discussion about the friction offered by fluid and air and animals shape to reduce friction and the structure of aeroplane that help it to minimise air friction.	

## CHAPTER : FRICTION

### SUB TOPIC: Fluid Friction

### EXPERIENTIA LEARNING

**ACTIVITY AIM:** To demonstrate the effect of density of fluid on drag.

**MATERIALS REQUIRED:** A table,four glasses, water, sugar syrup, mustered oil,honey,gram seeds and stop watch.

#### PROCEDURE:

- 1.Lable the three glasses 1, 2, 3 and 4.
- 2.Put water in glass 1, sugar syrup in glass2, mustered oil in the glass 3 and honey inglass4.
3. Then put the gram seeds one by one in these the glasses and record the time of fall at the bottom.

#### Observation:

Record your observations in the table given below:

GLASS	SAMPLES	TIME TAKEN BY GRAM SEEDS TO FALL AT THE BOTTOM
<u>1</u>	WATER	

<u>2</u>	SUGAR SYRUP	
<u>3</u>	MUSTERED OIL	
<u>4</u>	HONEY	

**Class:8**

**Subject: Science**

**Topic: SOUND**

Learner Previous Knowledge	Basic knowledge of sound. Basic knowledge of the terms Sound, amplitude, frequency.
Target Knowledge for this topic	The characteristics of sound, identify the difference between audible and inaudible range, understand the various aspects of sound energy and its production.

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
November	<p>Production of sound.</p> <p>Sound produced by human.</p>	<p>Students would be able to know ways of production of sound.</p> <p>Students would be able to know about the production of sound by human.</p>	<p>Quiz</p> <p>Daily Practice Problem</p> <p>MCQ</p> <p>Peer Assessment</p> <p>Student -teacher interaction,</p> <p>Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix),</p> <p>silent/ loud reading,</p>	<p>Discussion about the production of sound that is sound is produced by vibrating objects like by vibrating membrane, air column, and objects.</p> <p>Discussion about the production of sound by human by vibrating vocal cord</p> <p>Discussion about the</p>	<p>LEVEL 3</p> <p>How sound is produced in humans?</p> <p>What are the sources of noise pollution?</p> <p>How will you limit noise pollution around your locality?</p> <p>LEVEL 2</p> <p>What is audible range of frequency of sound for human?</p>

	Sound need medium for its propagation.	Students would be able to know about the medium of propagation of sound	collaborative learning, Research work/surveys	medium like solid, liquid and gas for propagation of sound speed of sound is more in solid than liquid and gas.	<p>What is difference between noise and music?</p> <p>LEVEL 1</p> <p>What is sound?</p> <p>Name objects used to produce sound in your school music room.</p>
	Hearing organ ear.	Students would be able to know about the sound detecting organ that is ear.		Discussion about the structure of ear and its function for detecting sound.	
	Characteristic of sound.	Students would be able to know about the characteristic of sound wave.		Discussion about the Characteristic of sound wave like amplitude, time period, frequency, loudness and pitch.	
	Sound pollution	Students would be able to know about the sound pollution and its hazard.		Discussion about the causes of noise pollution like sound produced by automobile, crackers, loudspeaker etc. and its hazard on human health and ways to minimise noise pollution.	

## CHAPTER : SOUND SUB TOPIC: Vibration produces sound EXPERIENTIA LEARNING

**ACTIVITY AIM:** To produce sound by a vibrating body.

**MATERIALS REQUIRED:** Big Bowl, Plastic Wrap, Uncooked Rice, Metal Pan/ plate, Metal Spoon **PROCEDURE:**

1. Put the plastic wrap tightly over the bowl. (One sheet, as tight as you can get it.) Put about 1 teaspoon of rice on the plastic.



2. Then hold the metal pan close to the bowl and have your child hit it with the spoon. The harder they hit it the better. The rice will dance!

What is happening is that the pan vibrates, creating a sound wave. This wave is transmitted through the air molecules and cause the plastic wrap to start vibrating as well, making the rice dance!



**Class:8**

**Subject: Science**

**Topic: CHEMICAL EFFECT OF ELECTRIC CURRENT**

Learner Previous Knowledge	Represent the various components of electric circuits along with their symbols; Different kinds of circuits; Electromagnetism and its application; Heating effect of electric current
Target Knowledge for this topic	Chemical effect of current Study the chemical effects of current and its various application; Electric Charge and conductivity
	Demonstrate electrical conductivity through liquids; Electrolysis; electroplating Usage of liquids to produce electricity

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--

November	Conductor and insulator.	Students would be able to know conductor and insulator.	Quiz Daily Practice Problem MCQ Peer Assessment Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	Discussion about the conductor and insulator on the basis of conductivity of electricity.  Discussion about the liquid that are conductor due to presence of ions along with examples like lemon juice and acids.  Discussion about the chemical effect of electric current along with electrolysis that is when electric current passes through conducting solution change of colour, deposition of metal occur on the electrode. Discussion about the process of electroplating along with its definition and application in the articles of daily life like electroplating of silver on spoon, electroplating of chromium on handles of bicycle, bath taps due to non-corrosive nature of chromium	LEVEL 3 How can you make pure water as conductor?  What are effect produced by electric current?  LEVEL 2 What is electroplating?  Give two examples of objects that are electroplated?  LEVEL 1 What are conductors?  Name two liquid that are conductor.
	Liquid conductor.	Students would be able to know about the liquid that conduct electric current.			
	Chemical effect of electric current.	Students would be able to know about the chemical effect of electric current			
	Electroplating.	Students would be able to know about the process of electroplating.			

## CHAPTER : CHEMICAL EFFECT OF ELECTRIC CURRENT

**SUB TOPIC:** Electrolysis

### EXPERIENTIA LEARNING

**ACTIVITY AIM:** To purify impure copper metal.

**MATERIALS REQUIRED:** Beaker, distilled water, Copper sulphate, dilute Sulphuric acid, Copper rod, copper plate, battery.

### PROCEDURE:

1. Take 250 ml of distilled water in a clean beaker.

- 2 . Dissolve 2 teaspoon full of copper sulphate in it.
3. Add a few drops of dilute sulphuric acid to copper sulphate solution.
4. A thick rod of impure copper metal is made positive electrode by connecting it to the positive terminal of the battery.
5. A thin plate of pure copper metal is made negative electrode by connecting it to the negative terminal of the battery.
6. Switch on the electric current by closing the switch.
7. Allowed the current to pass for about half an hour.

### Observation-

It will be observed that the impure copper rod goes on becoming thinner and thinner whereas the pure copper plate goes on becoming thicker and thicker. This is because the impure copper metal of anode goes on dissolving in copper sulphate solution whereas the pure metal from copper sulphate solution goes on depositing on copper plate cathode. Impurities present in impure rod of copper fall to the bottom of the beaker . **Result** - the copper metal of impure copper rod (anode) gets deposited on the pure copper plate (cathode).

### Questions -

1. Why do copper ions move towards cathode?
2. Why do impurities not move towards cathode or anode?

**Class:8**                      **Subject: Science**                      **Topic: SOME NATURAL PHENOMENON**

Learner Previous Knowledge	Generic meaning of earthquake. General knowledge of what happens during earthquake.
Target Knowledge for this topic	How do Earthquake and Lightning happen? Causes of Earthquake and Lightning Effects of Earthquake and Lightning Protection measures against Earthquake and Lightning.

MONTH	GIST OF THE LESSON	TARGET LEARNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANNED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	-------------------------	------------------------	------------------------------------	--

December	<p>Lightening.</p> <p>Charge and their interaction.</p>	<p>Students would be able to know the concept of lightening.</p> <p>Students would be able to know about the charge and their interaction Students would be</p>	<p>Quiz</p> <p>Daily Practice Problem</p> <p>MCQ</p> <p>Peer Assessment</p> <p>Student -teacher interaction,</p> <p>Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix),</p>	<p>Discussion about the concept of lightening that lightening in the sky is seen when clouds having charge rub each other.</p> <p>Discussion about the charge and their interaction that charges are of two types positive and negative, like charges repel each other while unlike charges attract each other.</p> <p>Discussion about the safety</p>	<p>LEVEL 3</p> <p>What is lightening conductor?</p> <p>Suggest measures to protect ourselves from lightening?</p> <p>LEVEL 2</p> <p>List some precaution during earthquake?</p> <p>Name two earthquake prone states of our country?</p> <p>LEVEL 1</p>
----------	---	---	---	--	--

		able to know about the	silent/ loud reading, collaborative learning, Research work/surveys	measure during lightening that is we should take some precaution in and outside of the house during lightening.	What is lightening?  Name types of charges?
	Lightning safety.	Students would be able to know about the safety measure during lightening.		Discussion about the earthquake that is sudden shaking of earth is called earthquake it leads to the destruction of life and properties.	
	Earthquake.	Students would be able to know about the earthquake and its consequences.		Discussion about protection against earthquake that is we should take some precautions to minimise the loss caused by earthquake in and outside house.	
	Safety measures against Earthquake.	Students would be able to know about the protection against earthquake.			

**CHAPTER : SOME NATURAL PHENOMENAN SUB TOPIC: Earthquake**

### **EXPERIENTIA LEARNING**

**ACTIVITY AIM:** To enable the students to understand the effects of an earthquake. **MATERIALS**

**REQUIRED:** Bowl, plastic scale/duster, Table, water

**PROCEDURE:**

1. Students will be instructed to fill bowl with water and place it on the table top.
2. The table top will be struck mildly by them with a duster or plastic scale and the waves produced will be drawn by them in a notebook.
3. The side edges of the table top will be struck by them with a duster or plastic scale and the waves produced will be drawn by them in a notebook.
4. The frequency of the striking will be increased and the students will be recording their observation.
5. They will be asked to compare the effect of vibration in all the three cases and this will be compared with the shaking of the ocean floor.
6. Later, they will be explained about the causes of tsunami.

**Curiosity Questions**

Did you ever watch the video of earthquake footage?

**Answer Guide**

- Do you have experienced the shake of the earth at least once?
- What could be the effect of this disaster?
- Have you heard the geological department predicting the earthquake in news channel?

**Class:8****Subject: Science****Topic: LIGHT**

Learner Previous Knowledge	Light and its sources; optical mediums; rectilinear propagation of light; shadows and reflection; characteristics of images formed by a mirror; Uses of mirror
Target Knowledge for this topic	Laws of reflection Lateral inversion; Regular and irregular reflection; reflected light reflected again- Multiple images; Making a kaleidoscope; Refraction-definition- Dispersion of light; Human eye ; perception of image; Taking care of eyes; Braille system

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
December	<p>Laws of reflection.</p> <p>Characteristic of image formed by plane mirror.</p>	<p>Students would be able to know about the laws of reflection.</p> <p>Students would be able to know about the Characteristic of image formed by plane mirror.</p>	<p>Quiz</p> <p>Daily Practice</p> <p>Problem</p> <p>MCQ</p> <p>Peer Assessment</p> <p>Student teacher interaction, Wipro-G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), silent/loud</p>	<p>Discussion about the laws of reflection that is Incident ray, normal and reflected ray all lie in same line and angle of incidence is equal to the angle of reflection.</p> <p>Discussion about the Characteristic of image formed by plane mirror that is image formed is of same size, virtual and laterally inverted.</p> <p>Discussion about the types of reflection that is regular and diffused reflection that occurs at smooth and rough surfaces.</p> <p>Discussion about the multiple</p>	<p>LEVEL 3</p> <p>What is the characteristic of image formed by plane mirror?</p> <p>How can we take care of our eye?</p> <p>LEVEL 2</p> <p>What are laws of reflection?</p> <p>What is Braille system?</p> <p>LEVEL 1</p> <p>What is light?</p> <p>Name the different colours present in white light.</p>

	Types of reflection.	Students would be able to know about the types of reflection.	reading, collaborative learning, Research work/surveys	images when two plane mirrors are placed at an angle with each other.	
	Multiple images.	Students would be able to know about the multiple images		Discussion about the human eye that is human eye is like camera and consist of convex lens which converge the light falling on it on retina which have sensory nerve and carry the message to the brain which aware us about image.	
	Human eye.	Students would be able to know about the human eye and its function.			

## CHAPTER : LIGHT

**SUB TOPIC:** Periscope used in Submarines

### EXPERIENTIA LEARNING

**ACTIVITY AIM:** To demonstrate multiple images using periscope.

**MATERIALS REQUIRED:** Empty carton/ cardboard box, Cardboard cutter, tape, Pencil, two rectangular hand mirrors, Ruler, Scissors

### PROCEDURE:

- Using a cardboard cutter, make a window at the base of the carton. This is your viewing window.
- Lay the carton on its side so that the window is facing the right. Draw a line  $45^\circ$  from the bottom right-hand corner to where it meets the left hand edge.
- Flip the carton over so that the window is now facing the left and draw a line  $45^\circ$  from the bottom left-hand corner to where it meets the right-hand edge.



- Make a cut on that line ONLY as long as the shorter side of the hand mirror.
- Flip the box over and do the same on the other diagonal line.
- Insert the mirror into the slot (if the cut is too narrow, widen the cut to fit the mirror). The reflecting side must face the window.
- Hold the carton up and look through the window. Ask your partner to wiggle their fingers over the top. If what you see is tilted or distorted, adjust your mirror until it straightens out. If the mirror is loose, tape it in place.
- Hold it sideways to see around corners.
- You can also look through the bottom window and see over fences. Look through the top window and see under tables. Experiment with a longer tube and notice that the image gets smaller.

**Class:8**

**Subject: Science**

**Topic: STAR AND THE SOLAR SYSTEM**

Learner Previous Knowledge	Meaning of Universe Solar system and names of its planets
Target Knowledge for this topic	Phases of Moon Sun Planets and their relevant facts Constellations Asteroids, comets, meteors and satellites(natural and artificial)

MONTH	GIST OF THE	TARGET LERNING	Techniques to	TEACHING LEARNING ACTIVITY	QUESTION ON TLOs, HOTS & CORRELATION
-------	-------------	----------------	---------------	----------------------------	--------------------------------------

	LESSON	OUTCOME	be used:	PLANED	WITH OTHER SUBJECTS
--	--------	---------	----------	--------	---------------------

January	<p>Celestial bodies.</p> <p>Stars.</p> <p>The solar system.</p>	<p>Students would be able to know celestial bodies like moon.</p> <p>Students would be able to know about the stars</p> <p>Students would be able to know about the solar system.</p>	<p>Quiz Daily Practice Problem MCQ Peer Assessment Student teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys</p>	<p>Discussion about the celestial bodies like moonit revolves around earth and is natural satellite of our planet and its surface is uneven having deep craters and high mountains.</p> <p>Discussion about the stars that is stars are hot glowing bodies of gasses very far away from us group of stars having definite recognisable pattern is called constellation like Ursa major orion etc.</p> <p>Discussion about the solar system that is sun along with planet that revolves around sun is called solar system there are eight planets in our solar system Mercury, Venus, Earth, mars, Jupiter, Saturn, Uranus and Neptune.</p> <p>Discussion about the Some other members of solar system like Asteroids, Meteors and Meteorites.</p>	<p>LEVEL 3 What is light year?  What are the uses of artificial satellite?</p> <p>LEVEL 2 What is constellation? Name any two constellations.  What are asteroids?</p> <p>LEVEL 1 What is Solar system?  Name the largest planet of our solar system?</p>
---------	---	---	--	---	---

	Some other members of solar system.	Students would be able to know about the some other members of solar system.		Discussion about the artificial satellite like INSAT, IRS that are used for weather forecasting and telecommunication.	
	Artificial satellite.	Students would be able to know about the artificial satellite.			

## CHAPTER : STAR AND THE SOLAR SYSTEM

### SUB TOPIC: PHASES OF MOON EXPERIENTIA LEARNING

**ACTIVITY AIM:** To enable the students to understand the different phases of moon.

**MATERIALS REQUIRED:** OREO Biscuits, A4 sheet or quarter size chart paper.

#### PROCEDURE:

- ☐ Students will be given a pack of OREO biscuits (vanilla flavoured) and will be asked to consider the biscuit base as night sky and the creamy portion as moon.
- ☐ The non-creamy part will be considered as new moon day and the full creamy portion as full moon day.
- ☐ Rest of the phases – waxing and waning – will be carved by removing the cream part accordingly using a spoon and the students will experience the different phases of the moon.
- ☐ The students will be asked to arrange them in order - the new moon, waxing crescent, half moon, waxing gibbous, full moon, waning gibbous, half moon, waning crescent and new moon in an A4 sheet or quarter size chart paper.

#### CURIOSITY QUESTION:

Have you ever imagined how the backside of the moon looks like? Have you seen it?

**ANSWER GUIDE:**

o How many times a full moon can be seen in a month? o If a full moon appears on 20th June, on which date will 'no moon' be seen?

**Class:8****Subject: Science****Topic: POLLUTION OF AIR AND WATER**

Learner Previous Knowledge	What is pollution; Causes and effects of air and water pollution and preventive measures to be taken against it.
Target Knowledge for this topic	Air Pollution- Specific air pollutants, Case Study/Project on Pollution affecting Taj Mahal, Greenhouse effect, Global warming, preventive measures Water Pollution- Case Study/Project on Pollution affecting Ganga, Pollutants/major causes Of water pollution. What is potable water its effects possible measures to reduce it

MONTH	GIST OF THE LESSON	TARGET LERNING OUTCOME	Techniques to be used:	TEACHING LEARNING ACTIVITY PLANED	QUESTION ON TLOs, HOTS & CORRELATION WITH OTHER SUBJECTS
-------	--------------------	------------------------	------------------------	-----------------------------------	--

February	Pollution.	Students would be able to know about the pollution.	Quiz Daily Practice Problem MCQ Peer Assessment Student teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys	<p>Discussion about the pollution along with its definition and consequences on our environment.</p> <p>Discussion about the air pollution that is Contamination of air with unwanted harmful chemicals is called air pollution. Air gets polluted by factories and automobiles.</p> <p>Discussion about the greenhouse effect that is trapping of sun's heat due to increase level of carbon dioxide Methane gas it leads to the increase in the temperature of earth.</p> <p>Discussion about the water pollution that is contamination of water with harmful chemical leading to the deterioration of water. Water gets polluted by industries and household liquid waste.</p> <p>Discussion about measures to</p>	<p>LEVEL 3 How can we control air pollution?</p> <p>Describe the threat to the beauty of the Taj Mahal?</p> <p>LEVEL 2 Describe Greenhouse effect?</p> <p>What are the cause of water pollution?</p> <p>LEVEL 1 What is pollution?</p> <p>What are the causes of air pollution?</p>
	Air pollution.	Students would be able to know about the air pollution.			
	Greenhouse effect.	Students would be able to know about the greenhouse effect.			

	Water pollution.	Students would be able to know about the water pollution and its consequences.		reduce pollution like we should use public transport, factories should be provided with filters to reduce pollution.	
	Measures to reduce pollution.	Students would be able to know about the measures to reduce pollution.			

## **CHAPTER : POLLUTION OF AIR AND WATER**

### **SUB TOPIC: CAUSES & EFFECTS OF AIR POLLUTION**

#### **EXPERIENTIA LEARNING**

**ACTIVITY AIM:** To enable the students to know the causes and effects of air pollution **MATERIALS**

**REQUIRED:** A notebook and a pen to record their observation

#### **PROCEDURE:**

☐ Students will be taken to the nearby road of the school and will be made to stand on either sides of the road.

☐ They will be provided with a mask to safeguard from the smoke emitted by the vehicles.

☐ They are instructed to observe and make a report on the number of diesel and petrol vehicles – the four wheelers, three wheelers and two wheelers – the pedestrians and cyclists moving along the path in one hour.

#### **CURIOSITY QUESTION:**

Imagine the world is left with highly polluted water and air which cannot be purified at all.

What will you do to save the world?

## ANSWER GUIDE:

- o Can the cause of the air pollution be controlled by doing so?
- o What may be the cause of air pollution? o How many vehicles were emitting their smoke in one hour? o Do the cyclists and the pedestrians play a role in polluting our atmosphere? o By accommodating people using 5 two wheelers in a car, people using 20 two wheelers in a bus, can we make an attempt to reduce the air pollution?