CLASS VIII SCIENCE LESSON PLAN (2025-26)

BUDHA DAL PUBLIC SCHOOL,PATIALA

SCIENCE SYLLABUS (2025-26) CLASS VIII

TERM 1
Ch - 1- Crop Production and Management.
Ch - 2 - Microorganisms : Friend and Foe !
Ch - 3 - Coal and Petroleum.
Ch- 5 - Conservation of Plants and Animals.
Ch - 8 - Force and Pressure.
Ch - 9 - Friction .
Ch - 11 - Chemical Effects of Electric Current .

TERM 2
Ch - 4 - Combustion and Flame.
Ch - 13 - Light.
Ch - 6 - Reproduction in Animals.
Ch - 12 - Some Natural Phenomenon.
Ch - 7 - Reaching the Age of Adolescence.
Ch - 10 - Sound.
+ Ch - 9 - Friction (First Term)

Month-wise Distribution

TERM 1
APRIL
1. Crop Production and Management
2. Force and Pressure

MAY
3. Friction
4. Microorganisms: Friends and Foe

JULY
5. Coal and Petroleum
6. Chemical Effects of Electric Current

AUGUST
7. Conservation of Plants and Animals
   REVISION

PERIODIC 1
CROP PRODUCTION AND MANAGEMENT
FORCE AND PRESSURE

TERM 2
OCTOBER
1. Combustion and Flame
2. Light

NOVEMBER
3. Some Natural Phenomena
4. Reproduction in animals

DECEMBER
5. Reaching the Age of Adolescence

JANUARY
6. Sound
REVISION

NOTE: Chapter: FRICTION (From Term 1) to be included.

PERIODIC 2
COMBUSTION AND FLAME
LIGHT

LESSON PLAN
Month : April, Class :VIII
Subject : Science

Topic: Crop Production and Management
No. of days needed for completing the topic – 15 days

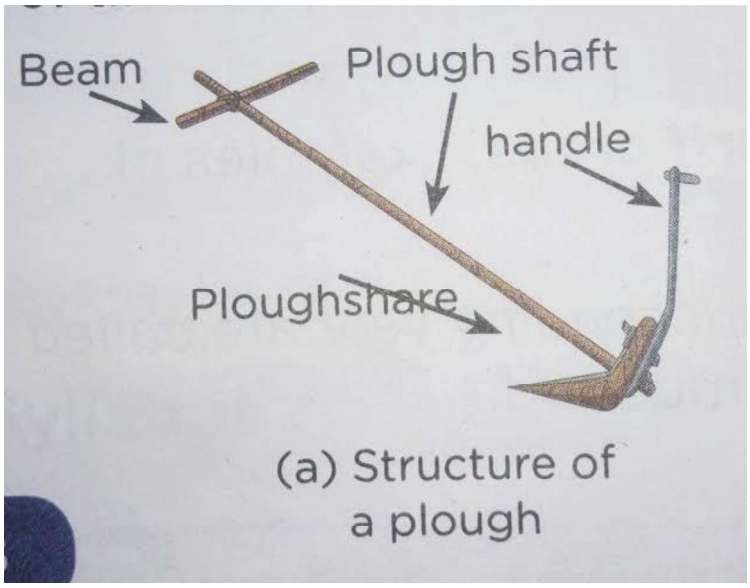
Objectives:
- Students will get knowledge about agriculture.
- Students will able to define Crop,Kharif and rabi crops,agricultural tools,transplantation etc.
- Students will be able to differentiate between manure and fertilizers.
- Students will understand the need of irrigation and its types.
- Students will know about the weeds,harvesting festivals,green revolution, hybridisation and animal husbandry.

Previous Knowledge Testing
Questions will be asked from the students to test their previous knowledge about the topic.
- Why do we need food?
- Where do we get food?
- Name two cereals.
- How do farmers grow crops?
- Can you recite any poem during the harvesting festival?

- **Important spellings**:
Sufficient, fertility, encouraged, nutrient, manure, cultivate, fertilizer, transplantation, weed, irrigation, thrashing, hybridization, emasculation.

Explanation with Innovative Methods used:
- Working model of modern methods of irrigation.
- To separate good and healthy seeds from damaged ones.
- To observe the growth of seedlings with manure and fertilizer.
- Topic will explained with the help of YouTube videos https://youtu.be/MYdb3NTE4nQ https://youtu.be/xR2DPnyLEE0
- Related diagrams will be drawn and explained.
- Students will make videos related to the topic and share in the class groups.

Procedure :
Brainstorming:
The class would start with the discussion on what the students have learnt in the previous classes and hence what is it that they would learn now. They would also be told about the significance of the topic that they would be studying.
Introduction of the topic:-
Topic will be introduced in the classroom by poem recitation.
(ii) Reading and discussion of the topic will be done and important terms will be underlined.
(iii) Content will be shown with the help of YouTube videos and related websites .



(iv) Diagrams of various agricultural tools will be drawn (v) Questions related to the topic will be discussed.
(vi) Agricultural practices will be discussed in detail.

Introduction of the topic:- Flip Learning: Digital content would be shared with students in their class group.

Participation of students :
(i) Students will write poems on agriculture.
(ii) Students will read the content and underline the important terms.
(iii) Students will draw diagrams of agricultural tools.

(iv) Students will frame questions and discussion will be done.
(v) Students will make collage on harvesting festivals in the notebook.

Experiential learning:
1. To separate the good and healthy seeds from d amaged seeds
2. To observe the growth of seedlings with manure and fertilizers

Art integration
1 Paste pictures of various crops like zaid ,kharif and rabi
Interdisciplinary: integrated with agriculture

Recapitulation:
- Agricultural practices will be revised by conducting **ROLE PLAY.**

- Group discussion will be on the topic 'modern methods of agriculture used in India.'

Assignments:

Q/Ans of related topics will be written in the notebook. Related MCQs, back exercises will be done

Related diagrams will be drawn. **Question/answers**

• What are the harmful effects Of weeds?

• Discuss the advantages of using manure.

• How do legume plants help in maintaining soil fertility?

• Name the two methods of sowing seeds.

• List any two factors on which time and the frequency of irrigation depends.

• Rhizobium bacteria is found in ____.

• Urea is ____.

• _____is an example of weedicide.

Art integration

(i) Students will make collage on harvesting festivals in India.

(ii) Diagrams of agricultural look will be drawn by students.

(iii) Students will also participate in poem recitation

Learning outcome:

-Students will come to know about agricultural practices .

- Students will be able to define Kharif and Rabi crops. -
  Students will be able to identify agricultural tools.
- They will understand difference between manure and
  fertilizers.
- Students will be able to critically analyze the use of fertilizers.
- Students will be able to appreciate the role of the plants in their
  life.
- Students will develop the skill of drawing

Appreciation and aesthetic sense/values :

The student will be able to

- Appreciate the role of various modern farming implements and practices that contribute for the improved crop yield.
- Appreciate the research work conducted by several scientists in the field of agriculture, poultry, Pisciculture, Apiculture, Sericulture, Aquaculture, etc.,
- Observe various animals employed in farming in their surroundings and try to protect them by providing feed and shelter along with medical care when required.

- Celebrates the joy of Colors on the onset of harvesting festival “Vaisakhi ”.

Application in real life / Concern towards Biodiversity:
The child will be able to

- Propagate the concept of modernizing the methods of agriculture among his fellow citizens.
  - Adopts eco-friendly systems of farming leading to establishing a harmony with Mother Nature.
- Formulates hypothesis and concepts pertaining to the subtle relation that exists between humans and animals in this Nature.

Resources:
NCERT Book
NCERT Exemplar

Co-Scholastic Activities:
(i) Critical thinking, keen observation, Group discussion and communication skills will be enhanced.
(ii) Co-Scholastic Activities :-
(iii) Critical thinking, keen observation, Group discussion and communication skills will develop.

Mode of Assessment:It will be done on the basis of the activities, responses, classification chart including quiz, MCQs, oral and written test etc.
CONVERSATIONS between
a) Teacher and Learners (Students)
b) Students with their peers
(Thinking Skills
- Spoken skills
- Understanding
- Self-assessment
- Peer assessment)

OBSERVATIONS(Planning & Drafting
- Hands-on tasks
- Critical thinking
- Collaboration Skills
- Participation Skills
- Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

PRODUCTS OF LEARNING(Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

Remedial Teaching

Teacher once again repeat the lesson.

1. Teacher discuss about the topic content
2. Those students who are found lacking in any of the above steps, then remedial teaching is given.
3. Find the slow learners and give two more explana- tions and activities
4. Use topic related videos for Remedial Teac hing

Writing

Focus on Reading skills

• Individualized educational program

• Using pictures/mazes/ stories

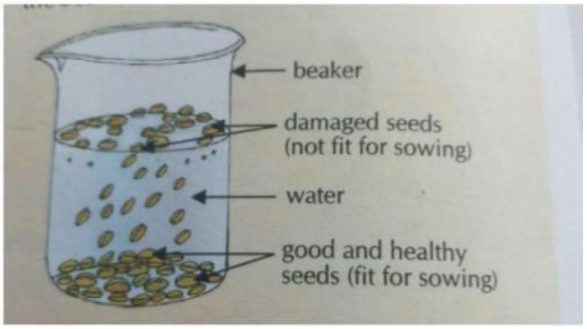
• Praising the student with positive remarks

Inclusive Practices and Full Participation without Discrimination

• All students will be encouraged to participate

• Recognising, accommodating and meeting the needs of all the students

• Including hands on learning and sensory activities



Method of separating healthy seeds from damaged seeds

Tractor driven cultivator

Transplantation

LESSON PLAN
Month: April
Class: VIII
Subject: Science
No. of days needed for completing the topic – 15 days
Topic: Force and Pressure

OBJECTIVES:

1. To define and understand the concept of force and identify its effects.
2. To explain contact and non-contact forces with examples.
3. To make students understand pressure and its application in daily life.
4. To differentiate between pressure exerted by solids, liquids, and gases.
5. To explain atmospheric pressure and how it affects objects on Earth.

PREVIOUS KNOWLEDGE TESTING:

Questions to be asked:

- What happens when you push or pull an object?
- Can we change the shape or motion of an object?
- What are the effects of applying force to a body?
- Why do sharp knives cut better than blunt ones?
- Why does a balloon burst when pricked?

VOCABULARY AND IMPORTANT SPELLINGS:

Force, pressure, contact, non-contact, gravitational, muscular, friction, magnetic, electrostatic, thrust, area, atmospheric, liquid, barometer, newton, vacuum, compression, hydraulic.

AIDS / INNOVATIVE METHODS USED TO EXPLAIN THE TOPIC:

- Smart class animations for different types of forces.
- Video demonstrations of applications of pressure (e.g., https://youtu.be/vseYDXlfjtI)
- Activities showing pressure distribution and effects of forces.
- Use of balloons, syringes, pins, rubber bands, plastic bottles, etc. for experiments.
- Interactive simulation tools for showing pressure in liquids and gases.

PROCEDURE:

Activities:

1. Students will push/pull objects (toy cars, books) to observe the effects of force.
2. Use of magnet and comb rubbed on hair to show non-contact forces.
3. Demonstration of pressure by placing the same weight on sharp and blunt nails.
4. Fill syringes with water and compress to show liquid pressure and Pascal's law.
5. Demonstrate atmospheric pressure using inverted glass and cardboard, or collapsing can experiment.
6. Observe air pressure using a suction cup.

Teaching Points:

1. Definition and effects of force: change in state of motion, shape, or direction.
2. Classification: Contact (muscular, frictional) and Non-contact (gravitational, magnetic, electrostatic).
3. Concept of pressure = Force / Area, unit of pressure.
4. Liquids exert pressure in all directions.
5. Gases exert pressure – demonstration using balloons.
6. Explanation of atmospheric pressure and real-life examples.
7. Real-world applications: hydraulic brakes, straws, vacuum packing, syringes, etc.
8. Recap with MCQs, short questions, diagrams, and exemplar discussion.

PARTICIPATION OF STUDENTS:

1. Students will give examples of forces they experience daily.
2. Categorize forces into contact and non-contact in a group activity.
3. Perform balloon experiments to feel gas pressure.
4. Create barometer models or write about their working.
5. Diagram drawing of contact/non-contact forces and pressure in liquids.
6. Discuss how pressure affects design (e.g., wide camel feet vs high heel shoes).
7. Compare forces acting in sports (football, cricket).
8. Debate: Which is stronger – muscular or gravitational force?

RECAPITULATION:

1. What is force? Mention two effects of force.
2. Define contact and non-contact force with examples.
3. What is the unit of pressure?
4. Why is it easier to cut vegetables with a sharp knife?
5. How does liquid pressure change with depth?
6. How do we experience atmospheric pressure?

ASSIGNMENTS:

- Prepare a presentation on different types of forces.
- Create a poster: “Applications of Pressure in Daily Life”.
- Group activity: Design and explain a model showing Pascal’s law.
- Write a report on how astronauts are trained to cope with zero atmospheric pressure.

RESOURCES:

- NCERT Science Textbook,
- NCERT Exemplar
- Online videos and simulations (e.g., https://youtu.be/vseYDXlfjtI)
- Lab kits and pressure demonstration tools

ART INTEGRATION AND OTHER DOMAINS:

(a) Students will draw:

- Diagram of barometer
- Contact vs Non-contact force chart

(b) Make a clay model showing hydraulic lift

Experiential Learning:

- Compare pressure using different sized blocks
- Compress balloon and syringes to show gas/liquid pressure

CO-SCHOLASTIC ACTIVITIES:

1. Analyze and compare the pressure applied by different shoes.
2. Design their own model to demonstrate atmospheric pressure.
3. Peer group discussions on uses of hydraulic systems.

LEARNING OUTCOMES:

Students will be able to:

- Define force and explain its effects.
- Differentiate between contact and non-contact forces.
- Explain pressure with real-life examples.
- Understand how pressure changes with area and depth.
- Describe applications of atmospheric pressure.
- Demonstrate scientific thinking through experiments.
- Exhibit creativity and analytical skills.
- Apply understanding to environmental and everyday contexts.

ASSESSMENT:

- Daily questions and class participation
- Group project presentations
- Peer and self-assessments
- Quizzes and MCQs
- Periodic test with conceptual and application-based questions

CONVERSATIONS:

Teacher–Student: Real-life questions on pushing/pulling objects, asking "why" for curiosity
Student–Peer: Group activities and presentation discussions
Skills: Spoken, understanding, reasoning, assessment

OBSERVATIONS:

- Planning and execution of experiments
- Critical thinking and collaboration
- Drawing and labelling diagrams
- Performance in quizzes and discussions
- Use of digital tools and active participation

PRODUCTS OF LEARNING:

- Diagram sheets
- Models of pressure-based devices
- Class presentations
- MCQ worksheets
- Posters on force/pressure applications

REMEDIAL TEACHING:

1. Re-explain concepts using models and videos.
2. Additional activities for slow learners.
3. Use of visuals and simplified notes.
4. One-on-one mentoring for specific doubts.

INCLUSIVE PRACTICES:

- Equal participation encouraged
- Sensory and hands-on activities for differently-abled students
- Use of visual aids for all learners

LESSON PLAN
Month May
Subject-science
No. of **days needed**-10 **days**
Topic Friction
Learning outcomes
To differentiate between static and kinetic friction

To learn about advantages and disadvantages of friction

To understand the various ways to reduce friction

To understand fluid friction

P **K testing**-

The teacher will introduce the topic by asking the students during class

1. What do you feel on a windy day?

2. Is it easy to ride a bicycle on grass or on road?

3. Why is it easy to pull a suitcase with wheels?

Vocabulary-

Static friction, limiting friction, kinetic friction, sliding friction, rolling friction,

Fluid, weight, ball bearings, Interlock, maximum, fluid, rollers, streamlined,

Necessity

Explanation-

The teacher will explain all the topics while reading from the book as well as

Explaining every topic. Various diagrams and activities will be shown to students

Procedure-

The teacher will explain the concept of friction by rubbing any two surfaces

And explain the interlocking forces of the surface.

The teacher will explain the types of friction-

Static friction

Limiting friction

The teacher will give various examples to make sure that the students

Understand the concept. Various factors affecting the friction will be discussed.

Student participation-

1. The students were involved in group discussions and they were

Motivated to share their own observations from daily life.
2. They will be encouraged to ask questions.

3. They will draw the various diagrams and sketches in the class with the

Teacher.

Recapitulation-

The students will be asked questions online so that they have complete

Understanding of each n every concept.

1. What is the cause of friction?

2. What is the difference between static and kinetic friction?

3. Why sliding friction is better than rolling friction?

4. How is friction a necessary evil. Explain

Learning outcomes-

1. The students will be able to examine the effect friction has on moving objects
2. They will understand the relationship between types of surface and Frictional force
3. Classify various types of friction
4. Plan and conduct simple activities and experiments
5. Explain various advantages and disadvantages of friction
6. Draw labelled diagrams for various activities
7. Applies scientific concepts in daily life

Innovative pedagogies-

1. The students will be shown various pictures using smart class to identify the various types of friction.
2. Various activities will be discussed during the class so that they have a

Better understanding of each concept

Resources-

https://youtu.be/e9zkdrV8Yhc

https://www.youtube.com/watch?v=e9zkdrV8Yhc **https://youtu.be/rVxE-MOWi_E**

NCERT Exemplar
Science NCERT

Assignment – 1 – Extra questions

Q1. Why do we slip when we step on a banana peel?

Ans. The inner side of banana peel being smooth and slippery reduces the

Friction between the sole of our shoes and the surface of road. Thus, we slip on It.

Q2. Why the sole of our shoes is grooved?

Ans. The grooves are made in the soles of shoes to increase friction with the

Ground so that the shoes get a better grip on the floor and we can walk safely.

Q3. Why a vehicle slows down when brakes are applied?

Ans. When brakes are applied, the brake pads press against the discs of the

Rotating car wheels. This produces friction between brake pads and the discs,

Making the wheels to slow down and ultimately stop.

Q4. Why it is convenient to pull the luggage fitted with rollers?

Ans. Rolling reduces friction. It is always easier to roll than to slide a body over

Another. That is the reason it is convenient to pull the luggage fitted with

Roller

LESSON PLAN
Month : May, Class :VIII Subject
: Science
No. of days needed for completing the topic – 15 days

<u>Topic : Microorganisms : Friends and Foe</u>

Objectives :-
(i) Students will get knowledge about different types of Microorganisms.
(ii) Students will understand about important role of micro organism in daily life
(iii) Students Become aware about Harmful Microorganisms which cause diseases in living organisms.
(iv) Students will be able to define Food Preservation and its different methods (v) They will understand about the Nitrogen Cycle in nature.

• **Previous Knowledge Testing** :-
Following questions will be asked
(i) Name the different types of living organisms.
(ii) Can you see the germs which cause diseases?
(iii) What are microorganisms?
(iv) Where do microorganisms live?

• **Important Spellings** :-

Unicellular, multicellular, bacteria, virus, algae, protozoa, antibiotics, immunity, preservation , dehydration, pasteurization, sodium benzoate,potassium, metabisulphite, assimilation, denitrification, ammonification.

• **AIDS / Innovative methods used topic** :- (i) Activity-To show the formation of curd takes place only in lukewarm milk

(ii) Charts related to bacteria, virus, protozoa will be drawn.

(iii) Activity- To observe increase in the volume of dough during the fermentation of sugar present in the dough by yeast cell.

(iv) Content of the topic will be explained by using resources.

https://youtu.be/iKg0mjkEbRk • https://youtu.be/WwW-xzOL1A4

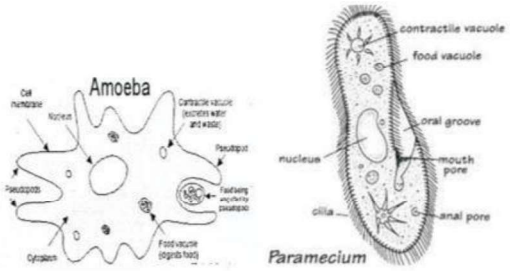
• **Procedure** :-

(i) Introduction of topic will be given in the class by using resources.

(ii) Reading and discussion of topic will be done in the class.

(iii) Related diagrams will be drawn.

(iv) Poem recitation on communicable diseases (v) Related question will be discussed.

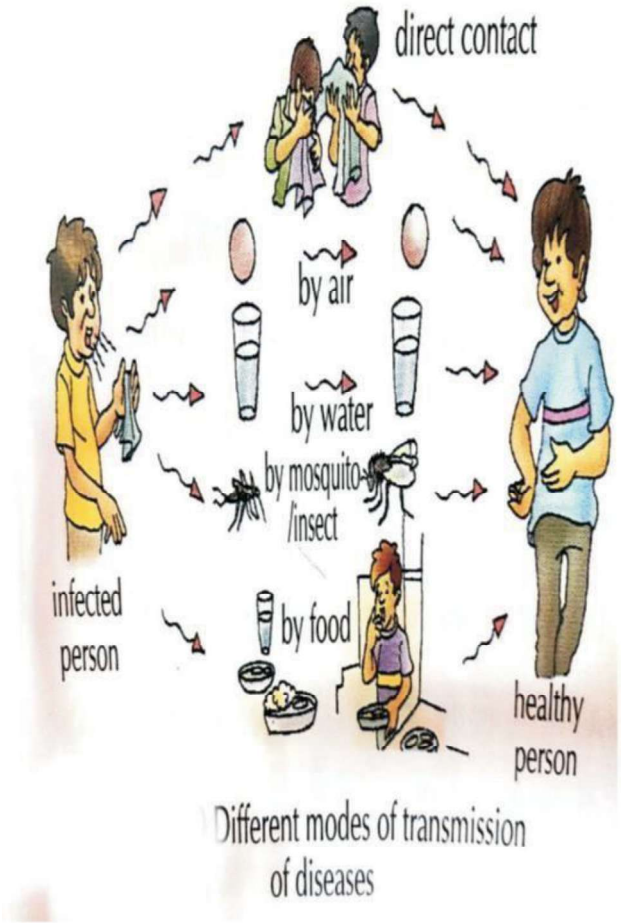


• **Participation of Students** :-

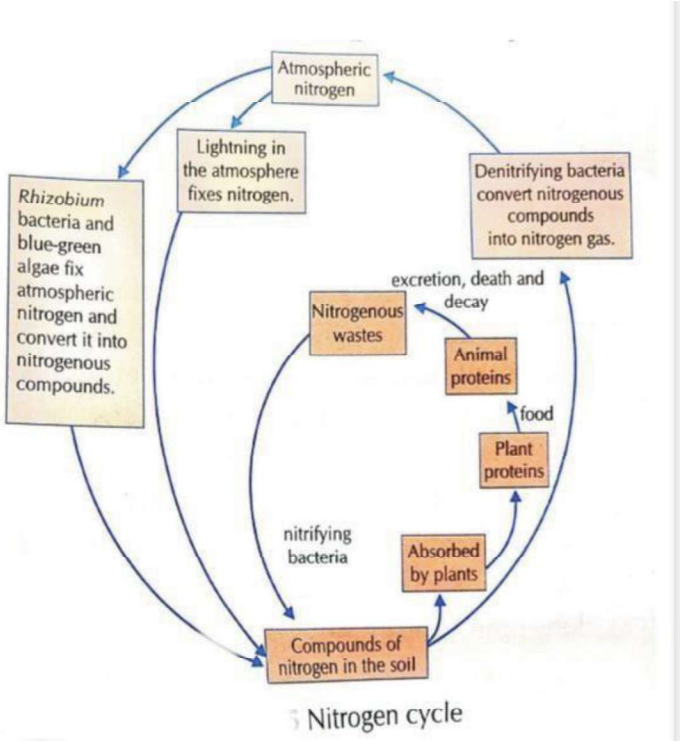
(i) Students will read the topic and discuss the topic.

(ii) Students will draw diagrams related to the topic in the notebook.

(iii) Students will collect pictures related to the topic and paste in the notebook.



Different modes of transmission of diseases



Nitrogen cycle

Recapitulation :

Oral revision will be done by asking the following questions

1. Name the different groups of microorganisms.
2. What is food preservation ?
3. Name two useful microorganisms.
4. What is nitrogen fixation?
5. What are antibiotics? 6. How can we prevent communicable diseases?
7. Discuss advantages of food preservation.
8. Name any two nitrifying bacteria.

Assignments

1. Students will complete questions answers in the notebook, MCQ and back Exercises.
2. Students will paste the pictures of different microorganisms in the notebook. Art Integration:

• Chart of the Nitrogen Cycle will be drawn.
• Poem recitation on communicable diseases.
• Diagrams of Amoeba, Paramecium and Euglena will be drawn.

Experiential learning

1. To show the presence of microorganisms in soil and water
2. To show that Carbon Dioxide is released during fer mentation
3. will show slides of microorganisms

Interdisciplinary; integrated with environ

Learning Outcomes :-
Explain the differences between different types of microorganisms.

- Reason out the causes for the occurrence of various diseases in their vicinity.
- Explain the importance of microorganisms in daily life.
- Explain the differences between various uses and misuses of microorganisms in the wake of diseases and Pandemics breaking out in the recent times.
- Explain with examples the various types of microorganisms.
- Explain the role of microorganisms in the preparation of various types of food. **Questioning & Making Hypothesis: The child will be able to**
- Question the occurrence of different types of microorganisms.
- Question the process of food preparation making use of microorganisms such as Yeast and Lactobacillus.
- Hypothesize the experimental results relating to usage of microorganisms.
- Question the reasons for death and stunted growth of plants when infected with viruses and bacteria plant diseases.
- Arrive at an idea with regard to importance of useful microorganisms for conservation of Nature.

Experiments – Field observations: The child will be able to

- Observe the different diseases and pathogens that cause the diseases and damage the food and comments on them.
- Observe the methods of preventing bacterial infections and viral infections in different methods using sanitizers and vaccines.
- Observe the bio-diversity among the microorganisms in Nature around him/her.

4. Informational Skills and Projects: The child will be able to

- Obtain information relating to preparation and preservation of food products using microorganisms.
- Visit the local village gardens/fields and collects the data relating to various plant diseases in the habitation.
- Obtain the information related to several diseases caused by microorganisms in his/her vicinity by discussing with doctors and teachers.

Drawing and Model making : The child will be able to

- Draw the pictures of various microorganisms after thorough observation through microscope in the laboratory.
- Makes the models of viruses, bacteria and protozoans using clay.
- Prepares and maintains a record of impact of microorganisms in agriculture and related data under the supervision of the teacher.

Students will be able to define major groups of microorganisms.
Students Will be able to identify useful microorganisms and harmful microorganisms. Students will become aware of Different methods of food preservation
Students will get knowledge about the Nitrogen cycle

Appreciation and aesthetic sense/values : The student will be able to

- Appreciate the microorganisms' role in food manufacture and preservation.
- Appreciate the research work conducted by several scientists in the field of Microbiology and Bioinformatics.
- Observe some plants depending on microorganisms such as Rhizobium and Azotobacter for food/survival in their surroundings.

Application in real life / Concern towards Biodiversity:
The child will be able to

- Propagate the concept of bio-diversity among his fellow citizens.
- Adopts Nature-loving habits to maintain proper relation with his environment.

- Formulates hypothesis and concepts pertaining to the subtle relation that exists between humans and microorganisms in this Nature.

Resources :-
NCERT Exemplar, Science NCERT
• **Co-Scholastic Activities** :- Critical thinking, keen observation, Group discussion and communication skills will develop.

Assessment
It will be done on the basis of Periodic test, activities activities, Oral test, class response and assignments

CONVERSATIONS between
a) Teacher and Learners (Students)
b) Students with their peers
(Thinking Skills
- Spoken skills
- Understanding
- Self-assessment
- Peer assessment)

OBSERVATIONS(Planning & Draftin g
- Hands-on tasks
- Critical thinking
- Collaboration Skills
- Participation Skills
- Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

PRODUCTS OF LEARNING(Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

Remedial Teaching

Teacher once again repeat the lesson.

1. Teacher discuss about the topic content
2. Those students who are found lacking in any of the above steps, then remedial teaching is given.
3. Find the slow learners and give two more explanations and activities
4. Use topic related videos for Remedial Teaching

Writing

- Individual attention
- Use of pictures

Inclusive Practices and Full Participation without Discrimination

- All students will be encouraged to participate
- Recognising, accommodating and meeting the needs of all the students
- Including hands on learning and sensory activities

LESSON PLAN
Month : July, Class :VIII Subject : Science
No. of days needed for completing the topic – 15 days

Topic:Coal and petroleum

Objectives:

State the meaning of natural resources.
Differentiate inexhaustible and exhaustible natural resources.
Define fossil fuel.
Cite examples of fossil fuel.
Describe how coal is formed.
Illustrate the products of coal

Learners will Learn about the formation of available natural resources like coal and petroleum.They will come to know the different products and uses of the same. They will be able to learn About the judicious use of the available resources and Will create awareness in the society.

Previous Knowledge Testing –

1. What us difference between renewable and non-renewable natural resources?
2. What are fossils?

3. Which fuel is used in steam engine? How it is different from metro trains?

Important Spellings –

Exhaustible, Carbonisation, Porous, Ammoniacal Liquor, Drilling Rigs, Pennsylvania, Volatile, Furnaces, Petromax, Methane, Butane, Propane, Haemoglobin, Tremendous, Judicious, Engineers.

Aids/ Innovative Methods Used To Explain The Topic –

With the help of smart class the process of destructive distillation of coal and the useful products formed in it will be explained.

Videos/ppt will be shown to explain extraction of petroleum till its refining

https://www.learncbse.in/

https://www.youtube.com/watch?v=SxLSD-292YM

Procedure –

Discussion and Explain resources by natural
and man-made.

Discussion and Explain Natural resources and their types.

Explain coal and the story of coal.

Discussion and Explain the products of coal.

Explain the formation of petroleum.

Discussion and Explain the refining of petroleum.

Explain various constituents of petroleum and their uses.

Explain Natural gas.

Discussion and Explain some natural resources are limited.

Different types of natural resource with the help of examples will be explained and discussed in the class

Inexhaustible Resources – Sunlight, Air, Water, Rainfall, Clay, Sand.

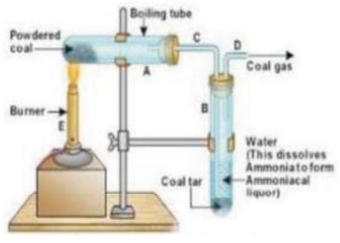
Inexhaustible Resources –

Renewable – Forests, Wild Life

Non Renewable – Coal, Petroleum, Natural Gas

With the help of Smart Class, Formation of Coal i.e. Carbonisation process, uses of coal and destructive distillation of coal will be discussed.

Students will draw the diagrams related to destructive distillation of Coal, Refining of Petroleum in their notebook.



The uses of useful products of Coal, various fractions of Petroleum will be discussed in the form of quiz.

The origin of Natural Gas and its uses will also be discussed in Smart Class.
The students will speak about limitations of fossil fuel and why we should use them judiciously.

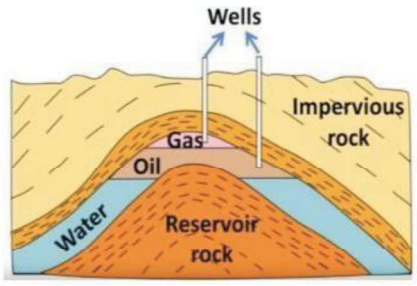
Participation of Students –
Students give examples of natural resources
Students make a survey on the energy consumption (coal, gas, electricity, petrol, kerosene etc,) and measures to conserve the energy of their neighborhood.
Is coal fossil fuels? - Discuss
Students prepare the uses of coal in table form
Students collect some information about the coal and petroleum deposits in India and mark them in outline map of India and World map.
Students explain the refining of petroleum in own way.
Students collect the information on various constituents of petroleum and their uses.
What would happen if fossil fuels were banned?----- Discuss Collect the information on how to save petrol/diesel while driving.
They will actively participate in class discussions/ quiz or debate and answer the Q's during discussion.
They will draw the diagrams related to various subtopics of Coal and Petroleum.

Experience and Reflection:
1. Students use resources properly for future needs.
2. Students will protect the environment by using petroleum products according to their needs.
3. Students understand how fuels are made and conserve fuels.

Art integration:
Students to make a poster on the uses of alternate sources of energy

Experiential learning:
1. The learners will take an account of the fuel consumption in homes like LPG ,petrol/diesel or the CNG
2. learners will mark the places in India where super thermal power plant and petroleum refineries are located

Interdisciplinary : integrated with sst

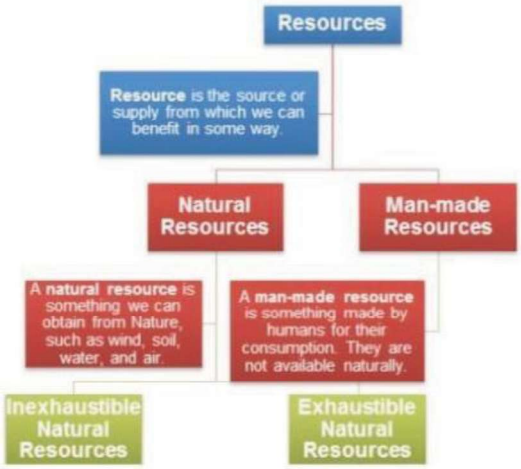


Recapitulation –

What are Fossil Fuels?

What are different varieties of Coal and their Carbon Content. Why is petroleum called Black Gold?

What will happened if we inhale of CO?



Assignments –

Extended Learning — Activities and Projects

Get an outline map of India. Mark the places in the map where coal, petroleum and natural gas are found. Show the places where petroleum refineries are situated.

Choose any five families of your neighbourhood. Enquire whether their energy consumption (coal, gas, electricity, petrol, kerosene) has increased or decreased in the last five years. Enquire also about the measures they adopt to conserve energy.

Find out the location of major thermal power plants in India. What could be the reasons for their being located at those places? www.energyquest.ca.gov/story/chapter08.html

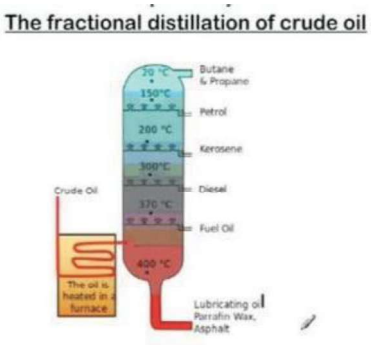
en.wikipedia.org/wiki/Non-renewable_resources
http://lsa.colorado.edu/summarystreet/texts/coal.html
http://www.eia.doe.gov/kids/energyfacts/sources/nonrenewable/oil.html

The students will be told to prepare a project report on the use of alternative sources of energy like Solar Energy, Wind Energy and Tidal Energy.

They can collect information on the topic –

"Should the Fossil Fuels be replaced by Bio Fuels " during their Summer vacations.

They will enlist Various fractions of Petroleum in Tabular Form, their uses along with pictures in their notebook.



Learning outcomes:

differentiates different petroleum products

- classifies materials as exhaustible and inexhaustible natural resources.
- relates processes and phenomenon related to formation of petroleum
- explains processes and phenomenon, related to refining of petroleum
- draws labelled diagram/flow charts related to formation of petroleum and its refining.
- discusses and appreciates stories of scientific discoveries such as discovery of Coal.
- constructs models using materials from surroundings and explains their working,
- applies learning of scientific concepts in day to- day life, e.g., uses of various petroleum products
- discusses and appreciates stories of scientific discoveries
- makes efforts to protect environment, e.g., using resources judiciously; suggesting ways to cope with environmental hazards .
- exhibits creativity in designing, planning, making use of available resources, etc. exhibits values

of honesty, objectivity,coop eration, freedom from fear and prejudices

ASSESSMENT:

Quiz in the form of teams. Daily practice questions. Peer assessment. Group discussions. Activity work.

Class tests. Periodic test.

CONVERSATIONS between
a) Teacher and Learners (Students)
b) Students with their peers
(Thinking Skills
- Spoken skills
- Understanding
- Self-assessment
- Peer assessment)

OBSERVATIONS(Planning & Drafting
- Hands-on tasks
- Critical thinking
- Collaboration Skills
- Participation Skills
- Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

PRODUCTS OF LEARNING(Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

Remedial Teaching

Teacher once again repea t the lesson.

1. Teacher discuss about the topic content
2. Those students who are found lacking in any of the above steps, then remedial teaching is given.
3. Find the slow learners and give two more explanations and activities
4. Use topic related videos for Remedial Teaching

Writing

• Individual attention
• Use of pictures

Inclusive Practices and Full Participation without Discrimination

• All students will be encouraged to participate
• Recognising, accommodating and meeting the needs of all the students
• Including hands on learning and sensory activities

Resources

NCERT Exemplar, Science NCERT

Class – 8
Month July,
Topic - Chemical effects of **electric Current**
No of days needed-15
Objectives-

To define conductors and insulators
To learn how to use an electric tester

To understand the term electrical conductivity

To learn the various terms used to describe chemical effects of current

To list various uses of electroplating and electrolysis

P K **testing**-

The teacher will introduce the topic by asking the students about good

Conductors and bad conductors of electric current during online session

1. Why only copper wires are used for electric wiring?

2. Do you know, how artificial jewelry is made?

3. Can liquids also conduct electric current?

New words

Circuit, conductivity, diode, filament, cations, anions, electrode, cathode,

Anode, electrolyte, electroplating, electric current, electrolyte, electrolysis

Explanation

All the topics will be introduced during the class one by one. The topics

Will be made clear to the students with the help of various examples and

Activities will be discussed share the learners will be encouraged To watch the content related topics during their free time. The learners

Will be made aware of the current developments of this field. Various diagrams

Will be discussed in the class and the students will be asked to draw those

Themselves so that they have a better understanding. Learners will be asked to

Analyse their ideas by comparing it with the facts

Procedure-

The teacher will discuss about the open and closed circuit and will explain the

Problems related to circuits by showing the diagrams during online session. By

Showing the picture of a LED, the teacher will discuss it by showing its positive

And negative terminals. The teacher will discuss the various terms related to

Chemical effects of electric current.

the teacher will explain the process of

Electroplating.
Student participation-

The students will be asked to watch various activities online to show that

Distilled water is a bad conductor of electricity. They will be asked to observe

Cells at home so that they could check the positive and negative terminals of a

Cell.

Recapitulation-

The teacher will ask the students to

1. Give examples of Conductors and insulators.

2. To describe the commonly used terms to understand the chemical

Effects of electric current

3. How is electroplating useful to us in our life?

Learning outcomes

1. The students should be able to differentiate between conductors and

Insulators

2. The students will be able to identify the two terminals of a battery/cell.

3. The students will understand the importance of electroplating in real

Life.

Innovative pedagogies

1. Audio visual aids will be used so that each and every concept is clear to

The students

2. A visit to physics lab will be done to have a look at the various cells,

Electrodes and batteries present in the lab.

Art integration

1. While drawing various diagrams, the students learn to draw and label

The diagrams.

2. While doing the role play for electrolysis the students will be able

Understand the concept deeply

Resources

https://www.youtube.com/watch?v=6NAzlIZ_qYI https://youtu.be/zWJsvcF9cAQ

Assesment
Following methods will be used to assess the grasping ability and acquisition

Of knowledge of the learners

1. Multiple choice questions via google form tests.

2. One word answers- oral test during online class.

3. Group discussions

4. Placards with related questions

Assignment- 1

Fill in the blanks

1. Electrolysis is used for _____one metal over another metal.
2. A combination of cells is known as _____.
3. In liquid the moving charges are called _____.
4. The driving force that carries charges around a circuit is _____ force.
5. Electric current is the flow of negatively charged particles called _____.
6. An electric current can bring about a _____change.
7. An _____when dissolved in water, breaks up into ions.
8. _____are materials that allow electricity to flow through them.
9. _____are also called as insulators.
10. A source of electricity is called a _____.

ASSIGNMENT- 2

State True/ False

1. Natural water that runs down the hills is 100% pure water
2. Formation of a new chemical compound by electricity is electrolysis.

3. Kerosene is a nonelectrolyte.

4. Lemon juice is an electrolyte.

5. All liquids conduct electricity.
6. Passing electric currents through a conducting liquid causes chemical changes.

7. Electrolysis is an application of electroplating.

8. Vinegar is a conductor of electricity.

9. A solution that contains oppositely charged ions conducts electricity.

10. Glucose solution is an electrolyte and hence conducts electricity.

11. Every ion has both positive as well as negative charges.

12. Electricity is a form of energy.

Resources
Science NCERT, NCERT Exemplar

LESSON PLAN
Month : August, Class :VIII
Subject : Science
No. of days needed for completing the topic – 15 days

Topic:Conservation of plants and animals

Objectives:
1. Students will understand the importance of biodiversity.
2. Students will also define Endemic species, exotic species, endangered species, vulnerable species.
3. Students will be aware about Conservation of forests and wildlife.
4. Students will get knowledge about Protected areas.

The students will learn
5. About deforestation, its brief report in the notebook regarding various factors disturbing the biodiversity of their area causes and consequences.
6. To appreciate the use of recycled paper, To define and differentiate between different protected areas.

7. Importance of flora and fauna in the ecosystem and also learn the value of conservation of wildlife.

Previous knowledge Testing:
Teacher will ask questions from the students .
What is your surrounding called?
Name few animals.
What are abiotic components of environment? What do we say to the variety of plants and animals found in the nature?

Important spellings:
Biodiversity, species, habitat,desertification, poaching, exotic, endangered, environmental, flora,fauna, vulnerable, threatened, afforestation Innovative methods used:

- Teacher will explain the content with the help of YouTube videos and online resources. • Teacher will explain the content from the book.
- Teacher will explain about major National parks and wildlife sanctuaries with the help of mapwork.
- Following links will be used to explain https://youtu.be/vuWTxddqP_c https://youtu.be/YwiTVPWxk48

Procedure:

- Teacher will introduce the topic with the help of online resources.
- Reading and explanation of the topic will be done in class.
- Related Q/Ans will be discussed.
- MCQ will be discussed.

Participation of the students:

- Students will read and understand the content of the topic.
- Students will write related Q/ans in the notebook.
- Students will paste the related pictures in the notebook.
- Students will plants trees.
- Students will make videos related to the topic and share in the class groups.

• **ASSIGNMENTS AND RECAPITULATION:**
Students will compete Q/ans in the notebook. Students will complete MCQ and back exercises.
Students will give answers to the following questions.
1. Name any two exotic species.
2------are undisturbed habitats for wildlife.
3--------is set up for conservation of one horned rhinoceros.
4---------are biotic components.
5. What is biodiversity?
6. Why do birds migrate?

7------- is a National park.
8--------- is an endangered species.
9. What is poaching?

Interdisciplinary:
Make a report on endangered species and present it in the class
(Integrated with sst)

Art Integration :-
(i) Student will make collage on biodiversity. (ii)
Map of India will be filled with location of major
national parks and wildlife sanctuaries.
(iii) Poem recitation on Environment conservation

1. **Learning Outcomes** :-
(i) Student will become aware about importance of biodiversity.
(ii) Students will be able to define Different type of Endemic, Exotic, Endangered spaces will be learnt by students.
(iii) Students will become aware about conservation of forests and Wildlife.
(iv) Students will get knowledge about different protected areas and migration.

2. **Resources** :-
Science NCERT, NCERT Exemplar

3. **Co-Scholastic Activities**:-
Group discussion, awareness about environment, critical thinking and communication skill will discussed.

ASSESSMENT:
Quiz in the form of teams. Daily practice questions. Peer assessment. Group discussions. Activity work.
Class tests. Periodic test.

CONVERSATIONS between
a) Teacher and Learners (Students)
b) Students with their peers
(Thinking Skills
- Spoken skills

- Understanding
- Self-assessment
- Peer assessment)

OBSERVATIONS(Planning & Drafting
- Hands-on tasks
- Critical thinking
- Collaboration Skills
- Participation Skills
- Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

PRODUCTS OF LEARNING(Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

Remedial Teaching

Teacher once again repeat the lesson.

1. Teacher discuss about the topic content
2. Those students who are found lacking in any of the above steps, then remedial teaching is given.
3. Find the slow learners and give two more explanations and activities
4. Use topic related videos for Remedial Teaching

Writing

• Individual attention

• Use of pictures

Inclusive Practices and Full Participation without Discrimination

• All students will be encouraged to participate

• Recognising, accommodating and meeting the needs of all the students

• Including hands on learning and sensory activities

LESSON PLAN
Month : October, Class :VIII Subject : Science
No. of days needed for completing the topic – 15 days

Topic: Combustion and flame

OBJECTIVES :
1. To categorize items according to their rate of combustion and explain different types of combustion 2.To teach students about the features of com bustible and non combustible substances. To provide knowledge about principles of fire fighting. 3. To make them understand about various zones of candle flame.
4. To discuss the harmful products formed due to burning of fuel and their effects. To teac h them about the features of an ideal fuel.

PREVIOUS KNOWLEDGE TESTING : Questions to be asked.....
Which fuel is used for cooking purpose?
Which gas is required for the process of burning?
Name two fossil fuels.
Which gas is produced during incomplete combustion of fuel?
Name a cleaner and environment friendly fuel.

VOCABULARY AND IMPORTANT SPELLINGS :
Combustion, Bunsen, charcoal, spontaneous, phosphorus, attainment, ignition, supporter, inflammable, nozzle, saponin, extinguisher, blisters, camphor, luminous, moderately, goldsmith, calorific, carboxyhemoglobin, unleaded, corrosive.

AIDS/INNOVATIVE METHODS USED TO EXPLAIN THE TOPIC:
Explanation of various types of combustion in the smart class.
It will be explained in the class with the help of videos how to use fire extinguishers – (https://youtu.be/IUojO1HvC8c) (https://youtu.be/w4jHpHoYZhk)
Activities to study the conditions required for the combustion process will be performed in the class. Types of fire extinguishers and their use will be discussed with the help of video.(https://youtu.be/GjSoxJF3RD4)

PROCEDURE:
Activities
1. Learners will collect different types of materials like – paper, cotton, straw, wooden icecream stick, dry leaves, nylon rope,piece of stone, piece of glass, iron nail, Copper wire, charcoal etc. each of the piece is held over flame for some time. Materials that catch fire and burn are noted.
2. A paper cup filled with water has to be kept on a stand over a flame and observed whether it burns or not. The reasons are to be expressed for the same.
3. The learners need information on the different types of fuels used for various purposes. They will also find out which one is least expensive and least polluting.

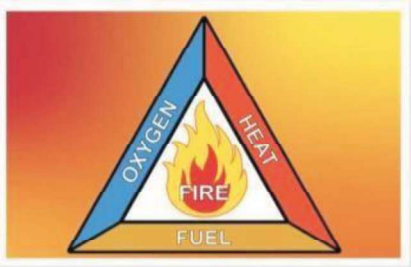
1. The difference between burning and combustion will be discussed in the smart class.

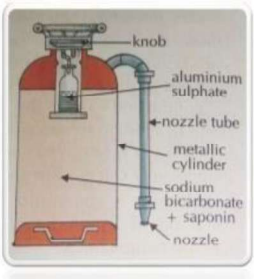
2. It will be discussed with the help of various activities in the composite lab that there are three conditions necessary for combustion process—
- Combustible substance (FUEL)
- Supporter of combustion (AIR)
- Ignition temperature

3. The fire fighting principles and types of fire extinguishers will be explained with the help of video.
4. The working and construction of foam type fire extinguisher and how to use fire extinguisher will be discussed with the help of videos.
5. Various zones of candle flame will be explained in the smart class and compared on the basis of hotness and colors.
6. The classification of fuels on the basis of their state (solid, liquid, gas) will be discussed with various examples.
7. Characteristics of good fuel and harmful products formed on burning of fuels will be explained by smartclass.
8. Revision of various subtopics will be taken up in the class(MCQ ,short questions ,definitions ,reason based questions , diagrams) and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS :

1. The students will take examples of combustible substances from their daily life and then categorize them into combustible and non-combustible substances.
2. The students will draw the diagram of fire triangle and show the conditions needed for combustion.

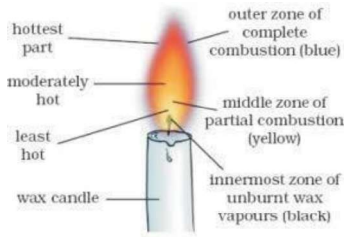




3. The students will speak on various fire incidents , their causes and what to do in that situation.
5. They will draw a diagram of foam type fire extinguishers and also make a project on different types of fire extinguishers.
6. They will speak on the points related to taking care of fire victims.
7. They will compare different fuels used on the basis of calorific value and find out which is the best one.

They will participate actively in the class on the topic –Judicious use of fossil fuels.

8. They will also highlight the harmful effects of burning fossil fuels.
9. They will draw diagram of zones of candle flame in their notebooks.
10. Learners will understand that it is very dangerous to sleep in a room with a coal fire burning and the doors and windows closed.
11. The learners will be aware of the fire dousing and in times of need will render assistance.



10.They will actively answer the questions , draw diagrams ,solve MCQs and objective questions and participate in the discussions.

RECAPITULATION :

1. Give example of spontaneous combustion.
2. Why water cannot be used to extinguish the fires caused by electrical short circuit or burning oil ?
3. Why is carbon dioxide considered as best fire extinguisher ?
4. Why do coal and charcoal burn without producing flame ?
5. What happens when fuel burns in insufficient supply of oxygen ?
6. What are the effects of acid rain ?

ASSIGNMENTS :

The class will be divided into groups of five students each and they will prepare presentation on various subtopics and these will be followed by discussions.

The students will be told to make a project on various types of fire extinguishers.

They will be told to prepare a write up on topic – Use of alternate sources of energy.

RESOURCES :

Science NCERT, NCERT Exemplar.

Videos (https://youtu.be/IUojOHvC8c) (https://youtu.be/w4jHpHoYZhk) (https://youtu.be/GjSoxJF3RD4).

ART INTEGRATION AND OTHER DOMAINS :

(a) The students will draw diagrams of fire extinguisher and zones of candle flame. (Art education)

(b) Make a model of a greenhouse

Experiential learning:

1. To show that oxygen is necessary for combustion of the substance.
2. to find whether the given substance is combustible or non combustible

Co-SCHOLASTIC ACTIVITIES :

1. The students will critically analyze the conditions required for the combustion process through different activities.
2. They will develop decision making skills after learning about types of fuels and their calorific values & will decide which fuel is best for the environment.
3. They will discuss characteristics of an ideal fuel thus developing collaborative learning and communication skills.

Learning outcomes:

The students will be able to

1.recall the process of combustion and the conditions needed for it.

2.differentiate and analyze the types of combustion occurring in real life.

3.understand regarding the working of fire extinguishers.

4. they will be able to analyze the cleaner fuel, that is least expensive and sustainable.

4.differentiates combustible and non combustible substances, different zones of flame • classifies materials as combustible and non combustible substances • conducts simple investigations to seek answers to queries, e.g., What are the conditions required for combustion, observe different zones of flame.

- relates processes and phenomenon with causes, e.g., ignition temperature of fuels, Forest Fire, etc.
- explains processes and phenomenon, such as how is fire controlled .
- draws labelled diagram of structure of flame, activities, etc.
- constructs models using materials from surroundings and explains their working such as fire extinguisher scientific concepts in day to-day life such as use of fire extinguisher, control on fire caused due to different reasons • makes efforts to protect environment, e.g., using resources judiciously;; suggesting ways to cope with environmental hazards, etc. • exhibits creativity in designing, planning, making use of available resources, etc. • exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices

ASSESSMENT:

Quiz in the form of teams. Daily practice questions. Peer assessment. Group discussions. Activity work.

Class tests. Periodic test.

CONVERSATIONS between

a) Teacher and Learners (Students)

b) Students with their peers

(Thinking Skills

- Spoken skills
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- Peer assessment)

OBSERVATIONS(Planning & Drafting
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PRODUCTS OF LEARNING(Written Works
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Remedial Teaching

Teacher once again repeat the lesson.

1. Teacher discuss about the topic content
2. Those students who are found lacking in any of the above steps, then remedial teaching is given.
3. Find the slow learners and give two more explanations and activities
4. Use topic related videos for Remedial Teaching

Writing

• Individual attention

• Use of pictures

Inclusive Practices and Full Participation without Discrimination

• All students will be encouraged to participate

• Recognising, accommodating and meeting the needs of all the students

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Class 8th
Science
Month October Topic -
Light
No of days required – 14 days
Learning Objectives

To define reflection in plane mirrors

To understand the laws of reflection

To identify multiple images formed in a plane mirror

To learn how to construct a Kaleidoscope

To explain the structure of human eye

To list out the ways to protect our eyes

To understand how braille can be used for visually handicapped people

P K testing

The teacher will ask the following questions during online class

1. **Do you know the differences between regular and diffused reflection?**
2. **Do you know the light from sun rays is made up of different colors?**
3. **Do you know about the parts of human eye?**

Vocabulary

Incident ray, normal, reflected ray, diffused, luminous, kaleidoscope, sclera,

Choroid, cornea, retina, iris, pupil, vitreous, aqueous

Explanation

The teacher will discuss the following one by one by the help of diagrams

Shared through scree n share

1. **The laws of reflection**

2. **Formation of images by a plane mirror**

3. **Multiple image formation in kaleidoscope**

4. **The structure of human eye**

5. **Power of accommodation**

6. **Defects of human eyeProcedure**

7. Starting with light each n every concept will be discussed in detail n class.
8. The learners will be encouraged to watch the content related the topics online
9. The learners will be made aware of the current developments of this field.
10. Various diagrams will be discussed in the class and the students will be asked
11. to draw those themselves so that they have a better understanding.
12. Learners will be asked to analyse their ideas by comparing it with the facts
13. Actual pictures will be shown during online class.
14. Recapitulation
15. The students will be able to answer the following
16. 1. What is reflection of light?
17. 2. What are the laws of reflection?
18. 3. What are the characteristics of the image formed by the plane mirror?
19. 4. What are luminous and non -luminous objects?
20. 5. What is a kaleidoscope?
21. 6. Define persistence of human eye
22. 7. Define dispersion of light.
23. Innovative Pedagogies
24. 1. Students will make a kaleidoscope with the help of youtube tutorail and
25. understand in detail how multiple images are formed
26. 2. Students will be requested to go online and look at braille texts.
27. Integration with other domain
28. 1. While discussing the diagrams for reflection, the students will learn
29. about the mathematical concept of normal
30. 2. While discussing the formula for the number of multiple images formed,
31. the students will learn how to put vales in a formula and do calculations
32. 3. With the discussion of various defects of eye, the students will be
33. equipped to help the persons better who have certain eye deficiencies

Art integration

Knowledge of drawing will be required by the students to draw the various

Diagrams related to reflection of light in plane mirror.

Student Participation

1. The students will be involved in group discussions during online sessions.
2. They will be encouraged to share their own observations
3. Students will be encouraged to ask questions during zoom sessions.
4. They will draw the various diagrams and figures in the class themselves

With the teacher.

Learning Outcomes

The students will be able to

1. Plan and conduct simple activities and experiments
2. Explain various types of reflection in plane mirrors
3. Applies scientific concepts in daily life
4. Understand laws of reflection
5. Identify multiple images formed
6. Construct a kaleidoscope
7. Explain the structure of human eye
8. List out the ways to protect eyes

Understand

9. How braille can be used for visually handicapped people

Assessment

Following methods will be used to assess the grasping ability n acquisition of

Knowledge of the learners

1. Mcq's in the form of google forms

2. One word answers during online oral tests

3. Group discussions
4. Placards with related questions

Resources

1. Extra mark slides
2. NCERT Exemplar
3. Science NCERT
4. https://youtu.be/sZXVS1uSCeg
5. https://youtu.be/OrobTDEYs2M

Assignment- 1- Fill in the blanks

(1) The _____at the point of incidence is called the normal.

(2) _____is a light sensitive screen in human eye.

(3) When two mirrors are kept parallel to each other the number of images is _____.

(4) Kaleidoscope works on the principle of _____.

(5) The splitting of white light into its constituent colours is called _____.

(6) The coloured part of eye is _____.

(7) The _____muscles alter the _____of the eye lens.

(8) The normal value for a _____is approximately 25cm.

(9) Droplets of water split sunlight to form a spectrum known as _____.

(10) _____can be corrected by using a concave lens of suitable focal Length.

(11) Refraction occurs because the _____of light is different in different Medium.

(12) When white light passes through a prism, it is _____.

(13) In a Kaleidoscope, the mirrors make an angle of _____with each other.

(14) The English Braille system uses _____dots.

(15) Lateral displacement takes place due to refraction in a _____.

6. How is sound produced?

7. Name a musical instrument which produces sound by blowing air into it.

LESSON PLAN
Month: November
Class: VIII
Subject: Science
No. of days needed for completing the topic – 12 days
Topic: Some Natural Phenomena

OBJECTIVES:

- To introduce the concepts of lightning and earthquakes as natural phenomena.
- To explain the formation of charges and types of charges in detail.
- To make students aware of the safety measures during lightning and earthquakes.
- To understand electroscope and how it detects charges.
- To raise awareness about disaster preparedness and earthquake-safe structures.

PREVIOUS KNOWLEDGE TESTING:

Questions to be asked:

1. Have you seen lightning in the sky?
2. What do you do when there is a thunderstorm?
3. What is an earthquake?
4. What precautions do we take during natural disasters?
5. Can you name some devices that detect or measure earthquakes?

VOCABULARY AND IMPORTANT SPELLINGS:

Lightning, electroscope, charging, discharging, earthing, fault zones, Richter scale, seismograph, tremors, thunderstorm, conductors, insulators, neutral, cloud-to-ground, magnitude, tectonic, preparedness, calamity, shockwaves.

AIDS / INNOVATIVE METHODS USED TO EXPLAIN THE TOPIC:

- Smart class animations on formation of lightning and working of seismographs.
- Video demonstrations and documentaries (e.g., https://youtu.be/Ui6wg8WpPeI for lightning safety).
- Use of electroscope model and balloon experiments for static electricity.
- Earthquake shake table model demonstration.
- Infographics and charts for "Do's and Don'ts during Earthquake".

PROCEDURE:

Activities & Teaching Points:

Understanding Charges:
Rubbing a balloon on dry hair and attracting paper bits to show static electricity.
Explaining types of charges: positive and negative; like charges repel, unlike attract.

Electroscope Demonstration:
Simple homemade electroscope using aluminum foil and glass jar.
Show charge detection.

Lightning Formation:
Explanation of charge separation in clouds.
Lightning and thunder with cause and sequence.
Safety tips using video demonstrations and storytelling of real events.

Earthquakes:
Explanation of tectonic plates and seismic waves.
Working of a seismograph.
Richter scale and magnitude discussion.

Disaster Preparedness:
Safety steps at home and in school during an earthquake.
Do's and Don'ts posters.
Discussion on safe building structures.

Review & Reinforcement:
Smart class revision of concepts.
MCQs, short answer questions, cause-effect reasoning, diagrams.

PARTICIPATION OF STUDENTS:

- Demonstrate balloon-paper charge activity.
- Make and explain a working electroscope model.
- Enact a skit on "How to stay safe during lightning."
- Prepare earthquake preparedness checklist for home.
- Make models of seismograph or earthquake-resistant buildings.
- Draw labelled diagrams of electroscope and seismograph in notebooks.
- Discuss causes of recent natural disasters in news and their impact.
- Participate in role plays showing emergency drills during earthquakes.

RECAPITULATION:

1. What are the two types of charges?
2. How is lightning produced in nature?
3. What is an electroscope?
4. What causes earthquakes?
5. What are the safety measures to be followed during an earthquake?
6. Name the instrument used to measure the magnitude of an earthquake.
7. What is earthing and why is it done?

ASSIGNMENTS:

Prepare a poster on "Lightning Safety Tips".
Group project: Make a disaster management plan for your school.
Write a report on recent earthquakes in India (with data like magnitude, place, year).
Make a presentation explaining the Richter scale and seismic zones of India.

RESOURCES:

NCERT Science Textbook, NCERT Exemplar
Videos (https://youtu.be/Ui6wg8WpPeI, https://youtu.be/FJcGO2M5XI0)
Model kits, balloon, wool, glass jar, metal strips, charts

ART INTEGRATION AND OTHER DOMAINS:

Art Education:
Drawing diagrams of electroscope and seismograph
Poster making: Earthquake safety / Lightning safety

Experiential Learning:
Make working models of electroscope or shake table
Simulate a school earthquake drill
Observe charging using daily items like plastic comb

CO-SCHOLASTIC ACTIVITIES:

- Organize a mock earthquake drill for the class.
- Disaster preparedness awareness speech competition.
- Group discussion on how human activities affect the severity of natural disasters.
- Quiz on natural disasters and safety measures.

LEARNING OUTCOMES:
Students will be able to:

- Explain static electricity and charging by rubbing.
- Differentiate between types of charges and describe their interactions.
- Understand and describe lightning and related safety measures.
- Define earthquake, its causes, and how it is measured.
- Demonstrate safety measures and awareness about natural disasters.
- Draw diagrams of electroscope, seismograph.
- Exhibit critical thinking in preparedness planning.
- Use models and experiments to apply theoretical concepts.

ASSESSMENT:

Daily review questions
Diagram-based test
Hands-on activity evaluation
Class test with MCQs and short answers
Oral quiz and team discussions
Peer and self-assessment during project work

CONVERSATIONS:

Teacher–Student: Discussion on everyday phenomena (e.g., lightning while camping)Student–Peer: Group planning for emergency response and model building
Skills Developed:

- Observation
- Communication
- Decision-making
- Teamwork
- Logical reasoning

OBSERVATIONS:

- Model-making skills
- Participation in drill/mock activities
- Concept clarity through questioning
- Creativity in poster/project work
- Involvement in group activities

PRODUCTS OF LEARNING:

- Poster on safety during lightning
- Earthquake survival kit demo
- Electroscope and seismograph models
- Report on recent natural disasters
- MCQ worksheets and creative diagrams

REMEDIAL TEACHING:

- Re-explanation of concepts through animations.
- Extra hands-on time for slower learners.
- Focused group discussions and demonstrations.
- More visual aids and real-life analogies.
- One-on-one mentoring and repetition with simpler activities.

INCLUSIVE PRACTICES:

- Use of models and videos for different learning abilities.
- Encourage team work and mixed ability groups.
- Ensure all students participate in drills and hands-on tasks.
- Adapt activities for students with different sensory or motor needs.

LESSON PLAN Class VIII
Subject : Science
Month- November
Topic : Reproduction in Animals
No. of days needed for completing the topic – 15 days

Learning Objective :-

Students will be able to define the following.

(i) Modes of reproduction
(ii) Fertilisation
(iii) Reproduction in human beings
(iv) Viviparous and oviparous animals
(v) Fertilization in human beings (vi)Asexual reproduction (vii)Test tube babies.

•**Previous Knowledge Testing :-**

Following questions will be asked to test the previous Knowledge about the topic (i) Differentiate between living and non living things.
(ii) How do different organisms increase their number?
(iii) What is reproduction?

• **Important spellings** :-

Fertilization, sperm, zygote, viviparous, oviparous,
testes, scrotum, testosterone, vas deferens, urethra, oviducts, estrogen, uterus, Amoeba, Hydra

AIDS / Innovative methods used to explain the topic :-

• Online resources
• YouTube videos
• Deeksha platform
• Topic will be explained by using the following links
• https://youtu.be/66HLbRublzI

Procedure :-

(i) Introduction of the topic will be given in the online class.
(ii) Reading and discussion of the topic will be done .
(iii) Related question / answer will be discussed diagrams will be drawn and discussed
(iv) Human ovum (v) Human sperm
vi) Male reproductive system (vii)
Female reproductive system
The need and importance of Reproduction in animals for maintenance of race is clearly explained.

➢ Demonstration of consequences of lack of reproduction is done by displaying a video. ?

Drawings of various reproductive mechanisms in animals (Asexual and Sexual modes) are depicted.

➢ Asexual modes of reproduction such as Budding and Bisexual reproduction methods are explained using charts and videos.

- Differences between Asexual and Sexual modes of reproduction are explained using charts and screening of videos

Open-ended questions are put to the children to derive new dimensional thoughts. ?

Eliciting spontaneous answers by conducting quiz programs frequently during the transaction of lesson in the classroom.

- Allotting group tasks relating to Project Works based on inquisitiveness to enrich the knowledge acquiring skills among the pupils and build confidence of learning new concepts outside the classroom as well.

Participation of the students :-

(i) Students will read and discuss the topic Questions/ answers will be written by the students in the notebook (ii) Students will draw the diagrams in the notebook.
Children discuss the importance of reproduction and arrive at a meaningful conclusion in groups.

- Participate in groups actively in model making of reproductive systems using clay and colors.
- Express their concern over modes of reproduction in animals in various seasons. ?

  Children undertake simple project works relating to preparation of a list of several reproductive methods and present a paper later in the classroom.

Assignments and Recapitulation:

Students will complete Q/ans in the notebook. Students will draw related diagrams. Students will complete MCQ and back exercises. Following questions will be asked by the teacher
What is the function of the testes? Expand IVF.
The zygote give rise to _____.
Binary fission take place in _____. Male gamete is also known as _____. _____produces ovum.
What are oviparous animals? Why is reproduction important?

Experiential learning:

Look out for the clusters of frog eggs floating in water and write down the color and size of eggs
Innovative

1 In the group of four, collect information related to cloning technique.write content for a blog on its advantages

Appreciation and aesthetic sense/values : The student will be able to

- Appreciate the role of Nature in deciding the mode of reproduction in several animals based on their life style and abode.
- Appreciate the research work conducted by scientists in this regard (Andrology and Gynecology).
- Observe various species of animals with regard to reproductive modes and admires the care taken by the mother towards the progeny.

Application in real life / Concern towards Biodiversity: The child will be able to

- Propagate the awareness on the concept of reproduction in animals among his fellow citizens.
- Adopts Nature-loving habits to maintain proper relation with his environment.
- Formulates hypothesis and concepts pertaining to the cordial relation that exists between different species of animals in this Nature.

Art Integration :-
Shown chart of male reproductive system and female reproductive system
Group discussion
Role play
Collage of viviparous animals

Learning Outcomes :-
(i) Students will be able to define reproduction, types of reproduction.
Students will :
1. Understand male and female reproductive system
2. Differentiate Between oviparous and Viviparous animals.
3. Learn about IVF Technique and test tube Babies.
4. How do babies Develop inside the Mother?
5. Why does our body Change when we reach Our teen age.
6. How sex of the baby Is determined.
7. Some animals lay Eggs while some give Birth to young ones.

• **Resources :-**

Science NCERT, NCERT Exemplar
• **Co-Scholastic activities** :-
(i) Awareness, Critical thinking, Group discussion, keen observation and communication skills will develop.

ASSESSMENT:
Quiz in the form of teams. Daily practice questions. Peer assessment. Group discussions. Activity work.
Class tests. Periodic test.

CONVERSATIONS between
a) Teacher and Learners (Students)
b) Students with their peers
(Thinking Skills
- Spoken skills
- Understanding
- Self-assessment
- Peer assessment)

OBSERVATIONS(Planning & Drafting
- Hands-on tasks
- Critical thinking
- Collaboration Skills
- Participation Skills
- Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

PRODUCTS OF LEARNING(Written Works
- Projects
- Performance Tasks
- Quizzes, MCQs
- Use of Technology)

Remedial Teaching
Teacher once again repeated the lesson.

1. Teacher discuss about the topic content
2. Those students who are found lacking in any of the above steps, then remedial teaching is given. 3. Find the slow learners and give two more explana - tions and activities
4. Use topic related videos for Remedial Teaching Writing

• Individual attention

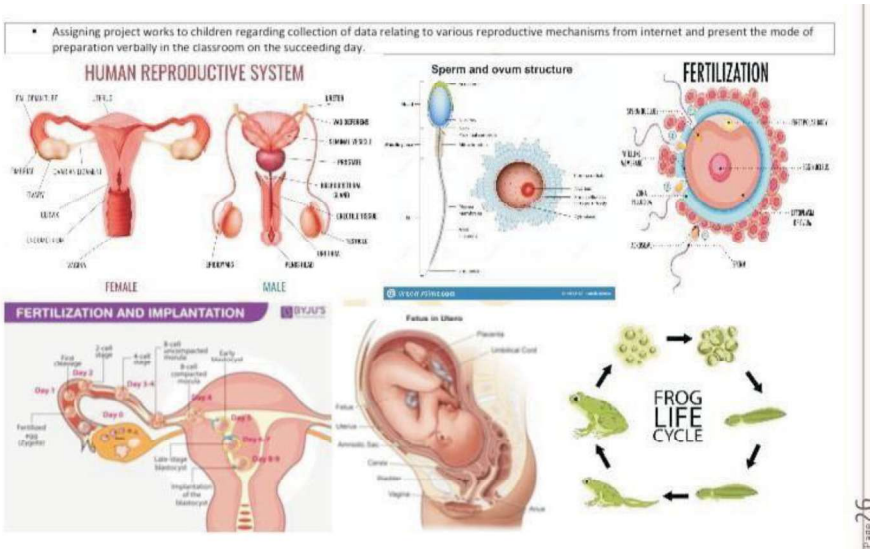
• Use of pictures

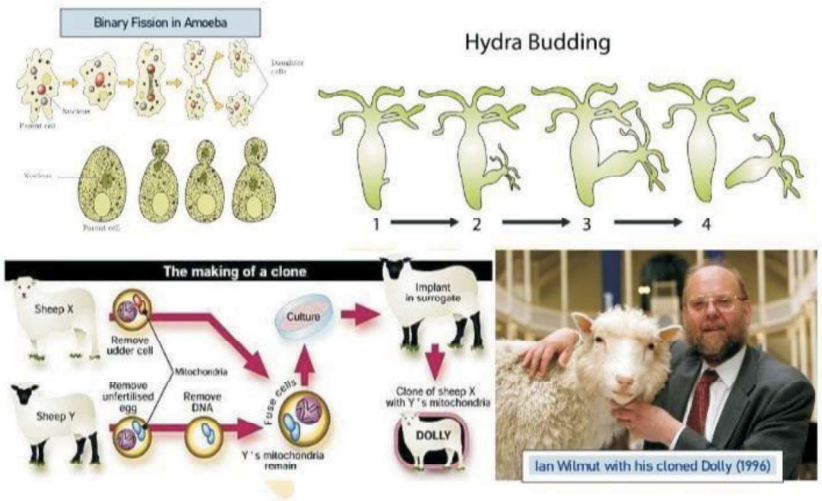
Inclusive Practices and Full Participation without Discrimination

• All students will be encouraged to participate

• Recognising, accommodating and meeting the needs of all the students

• Including hands on learning and sensory activities





Lesson plan 8th
Science
Month December
Topic - Reaching the Age of Adoloscence
No of days needed -13

Learning Objective :- Students will be able to

Define

(i) Adolescence

(ii) Puberty

(iii) Change at puberty and adolescence

(iv) Secondary sexual characters

(v) Hormones

(vi) Reproductive phase of life in human (vii)

Determination of sex of a body

(vii) Hormones other than sex hormones

(viii) Role of hormones in completing the life cycle of insects

And frogs.

(ix) Reproductive health

(x) AIDS

• **Previous Knowledge Testing** :-

Following questions will be asked to test the previous

Knowledge about topic .

(i) Name the different stages of human life.

(ii) What is life cycle?

(iii) What is adolescence?

• **Important spellings** :-

Adolescence, puberty, oestrogen, progesterone,

Intellectual emotional maturity, hormones, menstrual

Cycle, menarche, menopause, personal hygiene,

Metamorphosis

• AIDS / Innovative methods used topic :

Ppt. and videos

YouTube links

https://youtu.be/Q---eUEDy7w

Procedure :-

(i) Introduction of the topic will be by using online

Resources.

(ii) Reading and discussion of the topic will be done in the

Classroom

(iii) Related question / answer will be discussed.

(iv) Table information about endocrine glands will be

Discussed.

(v) Sub-topic – AIDS will be discussed and explained in

Detail.

• Participation of the students :-

(i) Student will be read and discuss the topic

(ii) Questions / answer will be discussed and written by the

Students in the notebook

(iii) Student will complete back exercises of the topic.

Assignments and **Recapitulation**:

Students will complete Q/ans in the notebook.

Students will draw related charts and table.

Students will complete MCQ and back exercises

Teacher will ask questions

1.Name the female sex hormone.

3. What is the full form of AIDS.

4. Name sexually transmitted disease.

5. _____produces growth hormone.

5._____no. of chromosomes are present in

Humanbeings.

6. Metamorphosis is controlled by _____.

7. Testes produce_____hormone.

Art Integration :-

(i) Poem recitation on 'say no to drugs'

(ii) Role play on role of hormones in human body.

(iii) Group discussion

Learning Outcomes :-

• Students will understand about adolescence, role of

Hormone secondary sexual characters.

• Students will get aware about reproductive health and

AIDS.

• Students will get knowledge about personal hygiene,

Exercises and importance of balanced diet during this

Pandemic.

Resources :-

(i) Science NCERT
(ii) NCERT exemplar
(iii) Extramarks software
(iv) Chart making on information about endocrine glands.

Co-Scholastic activities :-
Group discussion, Critical thinking, keen observation and
Communication skill will develop.
Assessment:
It will be done on the basis of periodic test, activities, oral test, class response and assignments.

Lesson plan
Month -January
Class 8
Topic sound
No of days needed- 15

Learning objectives-

To understand that sound is caused by vibrations

To know about the various musical instruments

To identify the sound from musical instruments

To understand how sound is produced and propagated by humans

To acquire knowledge whether sound requires a material medium to

Propagate or not

To analyse the working of human ear

To learn about amplitude, time period n frequency

To distinguish between loudness n pitch

To differentiate between noise n music

To understand noise pollution and methods to control it.

P K testing

The teacher will ask the following questions during class to introduce

The lesson

1. Have you heard musical instruments like guitar and tabla in your music

Class?

2. Can you differentiate between music and noise?

3. Can you hear all sounds produced by all living and non- living organisms?

Vocabulary

Vibration, medium, vacuum, frequency, amplitude, pitch, larynx, decibel, hertz,

Canals

Explanation

The teacher will discuss will discuss the following using various pictures in smart class

1. How sound is created with a vibrating object?

2. Speed of sound in different media

3. Pitch, loudness and quality will be discussed in detail

4. Structure of human ear will be discussed in detail

5. Reflection of sound and echo will be discussed in detail

6. Noise and music will be discussed

Procedure

Starting with sound and its cause, each and every concept will be discussed in Detail. The learners will be encouraged to watch the content related topics during their free time. The learners will be made aware of the current Developments of this field. Various diagrams will be discussed in the class and The students will be asked to draw those themselves so that they have a better Understanding.

Learners will be asked to analyse their ideas by comparing it with the facts.

Actual pictures will be shown during sessions.

Innovative pedagogies

1. Students will be shown pictures of various musical instruments
2. Students will be asked to create jal tarang at home and experience the Various different sounds created.

Art integration

1. Knowledge of drawing is required to understand the complex diagram of Human ear
2. Harmful effects of noise pollution will teach the students to be Considerate about the firecrackers they burst during Diwali festival.

Integration with other domain

1. When echo and various forts are discussed, it creates an interest of Students in history and various monuments.
2. Discussion about the science behind various musical instruments create

The interest of students in art and playing of instruments Student participation

1. The students will be involved in group discussions.
2. They will be encouraged to share their own observations.
3. Students will be encouraged to ask questions during classes
4. They will draw the various diagrams and figures in the class itself.

Learning outcomes-

Understand that sound is caused by vibrations Know

about the various musical instruments Identify the sound

from various musical instruments

Understand that how sound is produced and propagated by human ear Acquire

knowledge whether sound requires a material medium to propagate Or not

Analyse the working of human ear

Define amplitude, time period n frequency

Distinguish between loudness n pitch

Differentiate between noise n music
Understand about noise pollution and its control RESOURCES:

https://youtu.be/s86O-K_cjcg

NCERT TEXT BOOK,

NCERT EXEMPLAR

EXTRA MARKS SLIDES

ASSESSMENT:

Following methods will be used to assess the grasping ability n acquisition of Knowledge of the learners

1. Mcq's will be discussed
2. One word questions will be asked during oral tests.
3. Group discussions
4. Placards with related questions

Assignment- 1 Answer the following.

1. What does voice box or larynx of human produces?
2. In which medium sound propagates the maximum?
3. Name the sound producing organ in human.
4. What is vibration?
5. Do all bodies produce sound?