

BUDHA DAL PUBLIC SCHOOL,PATIALA

SCIENCE SYLLABUS (2023-24) CLASS VIII

Term 1-

- Chap 01- Crop Production and Management
- Chap 02- Microorganisms; Friends and Foe
- Chap 03- Synthetic Fibers and Plastics
- Chap 07- Conservation of Plants and Animals
- Chap 05- Coal and Petroleum
- Chap 11- Force and Pressure
- Chap 12 Friction
- Chap 14- Chemical effects of electric current
- Chap 18- Pollution of Air and Water

Term 2

- Chap 04 Metals and Non Metals
- Chap 06 Combustion and Flame
- Chap 08 Cell structure and Functions
- Chap 09 Reproduction in animals
- Chap 10 Reaching the age of adolescence
- Chap 15 Some natural Phenomenon
- Chap 13 Sound
- Chap 17 Stars and the Solar system
- Chap 16 Light

Month wise distribution

April

- Chap 1 Crop production and management
- Chap 03 Synthetic fibers and plastics
- Chap 11 force and pressure

May

- Chap 11 Force and pressure (contd)
- Chap 02 Microorganisms Friend and Foe
- Ch 5 coal and petroleum
- Ch 12 Friction + revision of periodic test 1

July

- Ch 12 Friction (contd.)
- Ch 7 conservation of plants and animals
- Ch 14 chemical effects of electric current

August

Ch -14 chemical effects of electric current (contd.) Ch 18 pollution of air and water+ Revision of PT2

September

Revision of half yearly examinations

October

Ch 8 cell structure and functions

Ch 4 metals and non metals

November

Ch 4 metals and non metals (contd)

Ch 13 Sound

Ch 9 Reproduction in animals

December

Ch 15 some natural phenomenon

Ch 6 combustion and flame + revision of PT3

January

Ch 10 reaching the age of adolescence

Ch 16 light

February

Ch 17 stars solar system + final term revision

Periodic tests syllabus

Periodic test 1

Ch 1 crop production and management

Ch 3 synthetic fibres

Ch 11 force and pressure

PT 2

Ch 12 Friction

Ch 7 conservation of plants and animals

Ch 05 coal and petroleum

Periodic test 3

Ch 8 cell structure and functions

Ch 13 Sound

Ch 4 metals and non metals

LESSON PLAN

Month : April–2023 Class :VIII

Subject : Science (Biology)

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

Objectives:

- Students will get knowledge about agriculture.
- Students will be 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 be 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 :

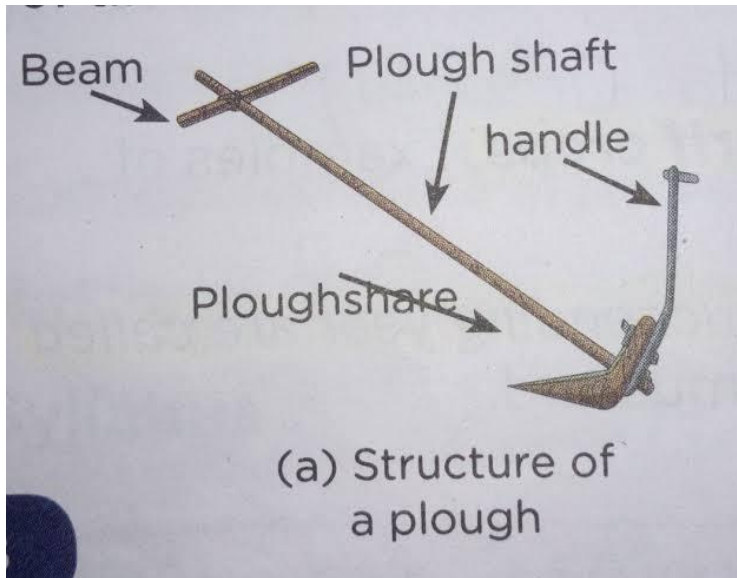
Brainstorming:

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 damaged 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:

Learning science by Cordova Publication, NCERT Book and Cordova software

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 explanations and activities
4. Use topic related videos for Remedial Teaching

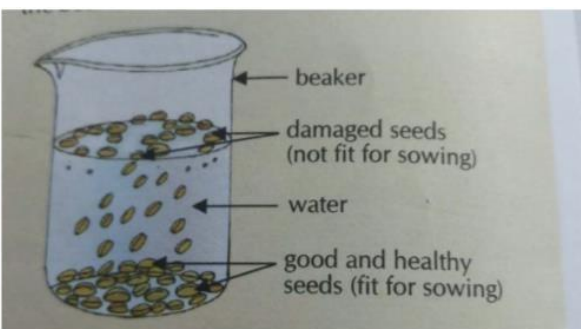
Writing

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



 Oil Expellers	 Mini Rice Plant	 Water Pump		
 Gears 078	 Disc Plough	 Mini Tractor		
 Disc Harrow	 Multicrop Thresher Bumper	 Multicrop Thresher Engine		
 Water Cooling Diesel Engine	 Chaff Cutter	 Mini Grinder		
				

LESSON PLAN

Month : April–2023 Class :VIII

Subject : science (Biology)

No. of days needed for completing the topic – 15 days

Topic:Synthetic fibres and plastics

Objectives: The students will be able to understand about

Natural fibers ,Types and sources of fibers, Characteristics Of Synthetic Fibers, Type Of Plastics,

Plastics are poor conductors of heat and electricity, Characteristics Of Plastics Biodegradable And Nonbiodegradable Plastics Plastics and the environment

USEFULNESS IN DAILY LIFE

Students will learn about

- Polymerization
- The types of fibers
- Manufacturing of fibers
- Fibers used in clothes which we wear in daily life
- Sources of fibers
- Synthetic fibers used in daily life
- Biodegradable/Non biodegradable materials
- Recycling of plastics
- Pollution caused by the plastics

Without learning this concept students will not understand

- The difference between natural & synthetic fibers
- Types of fibers used for our clothes
- The tensile strengths of fibers
- Plastics and the environment

This knowledge is helpful in: Textile industry, Dye making, synthetic material production, building and construction, packaging, and transportation, polymer industry etc Learn about what synthetic fibers are.

Recall the different types of synthetic fibers.

Learn about how the different types of synthetic fibers are made.

Differentiate the different types of synthetic fibers.

Get an idea about the characteristics of different types of synthetic fibers.

Previous Knowledge Testing –

What are natural Fibers and from where they are obtained? Why do we prefer to wear clothes made of natural fibers?

Vocabulary Used –

English (Synonyms of the terms)

Important Spellings –

Synthetic, monomers, polymers, polymerisation, amide, rayon, tyre cords, wrinkly, ester, conveyor, acrylic, abrasion, eczema.

AIDS / Innovative Methods Used To Explain The Topic –

Use of smart class to explain the type of fibers

Video/ PPT showing various uses of different synthetic fibers

Activity to compare water absorbing capacity of natural and synthetic fibers.

<https://www.learnbse.in/>

<https://www.youtube.com/watch?v=fS7fQzuDD2Y>

Procedure –

The classification of fibers will be explained with the help of example in Smart Class

It will be explained that polymers are substances with a very high molecular mass and is formed by joining of monomers

Monomers , Polymerisation , Polymer –

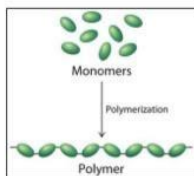


Figure 3: Source: Textbook

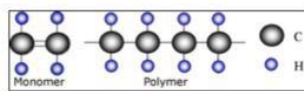


Figure 2: Source

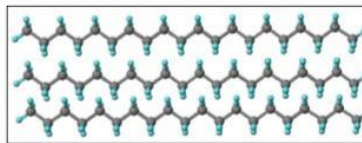


Figure 1: Source

The properties and uses of various synthetic fibres like nylon, rayon, polyester and acrylic will be discussed in the class

Experiential learning

1. To compare the tensile strength of different fibres of the same thickness and same length

2. To compare the water absorbing capacity of different fibres like natural and synthetic

Interdisciplinary : integrated with environmental

The students can have hands-on feeling various natural and synthetic fibers. They will Collect samples of various types of clothes, Paste it on a chart paper and Feel them with touch & identify as cotton, silk, nylon etc.

They will observe their texture, tensile strength and water absorbing capacity.

Various advantages and disadvantages of synthetic fibers can be discussed in the class in debate form.

They will *Collect samples of various types of clothes made from synthetic fibres.

*Paste it on a chart paper & label them.

*Explain the name & type of synthetic fibres.



Burning of different cloth materials will be a Demonstration by teacher
 Students will understand the burning characteristics of fibres. Pieces of different clothes will be brought by the students. Teacher will collect the pieces of clothes from the students.

- * Burn one by one carefully.
- * Check the smell of each fiber

To study the tensile strength of fibers Student & Teacher

Threads of cotton, wool, silk, nylon of same length & thickness
 Different weights are needed, Details of the activity and detailed instructions to carry it out Take threads and hang one of them from a stand. Attach a pan at the other end.
 Add weights one by one to the pan until the thread breaks.
 Note the total weight required to break the thread.
 Repeat the process with other threads & compare their strength.
 Students will perform the activity in the supervision of the teacher

Division of all synthetic fibers – Production, properties and uses will be taken up through Q's and MCQ's in summative assignment in Smart Class

Recapitulation –

- Are fibers used only to make fabrics?
- List examples to explain that polymers can be natural as well as synthetic Which type of fabric should be worn while working in kitchen or while burning crackers?
- How is eczema caused by wearing synthetic clothes?
- Compare cotton, wool and nylon on the basis of their strength and which of them is the strongest?

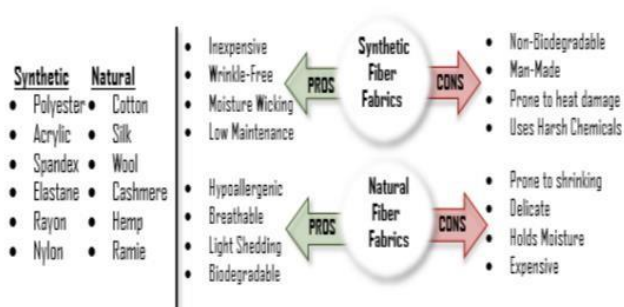
Assignments –

Pasting of 4 natural and 4 synthetic fibers in the notebook and name them

The students will write an article on PET bottles

The students will search on the topic: -

Biodegradable Synthetic Fibers



Previous Knowledge Testing –

Are fibers used for making fabric only?

What is polymerisation?

Why does a person feel uncomfortable wearing synthetic clothes?

Important Spellings –

Polythene, Polyvinyl, Polystyrene, Bakelite, Melamine, Formica, Thermocol, Fragile, Teflon, Clogging, Wrappers, Thermosetting, Moulded.

AIDS/ Innovative Methods Used To Explain The Topic –

Video/PPT will be shown to the students about thermoplastics and thermosetting plastics. Uses of Bakelite, Formica, Melamine, PVS, Teflon, Polystyrene, Thermocol etc will be discovered. <https://www.learnbse.in/>

<https://www.youtube.com/watch?v=fS7fQzuDD2Y>

Procedure –

Various characteristics of thermoplastics and thermosetting plastics along with examples

General properties of plastics and then uses in our daily life would be discussed

Revision of various subtopics, reason-based questions will be taken up in the class

It will be discussed that improper disposal of plastic waste can cause various health and environmental hazards.

5-R Principle along with other methods to solve problems created by plastics will be discussed.

The students will be told to dispose waste in green and blue bins separately i.e. Biodegradable wastes should be thrown in green bins.

Why should we not burn plastics and synthetic fibers?



Assignments –

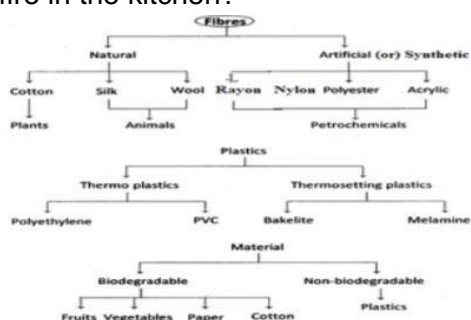
The students will write an article – “Plastics Boon or A Curse”.

They will differentiate thermoplastics and thermosetting Plastics along with examples

They will find out different uses of Formica in daily life

They will collect the information about Bioplastics and compare them with conventional plastics.

1. Describe an activity to show that thermoplastic is a poor conductor of electricity.
2. What are the characteristics of synthetic fibers?
3. Suggest some ways to solve plastic pollution.
4. Why is it advised not to wear synthetic clothes while working in a laboratory or working with a fire in the kitchen?



1. Factual:

Check For Understanding Questions

1. How is rayon different from synthetic fibers?
2. Is a plastic bag non-biodegradable? Why?
3. Do all plastics have the same type of arrangement of units?

2. Open Ended/Critical Thinking:

1. Why is silk called the Queen of fibers?
2. Why is acrylic more popular than wool?
3. Can recycled plastics be used in food containers? Why or why not?

3. Student Practice Questions & Activities:

1. Explain the difference between thermoplastic and thermosetting plastics.
2. Categorize the materials of the following products into 'can be recycled' and 'cannot be recycled'.

Telephone instruments, Plastic toys, Cooker handles, Carry bags, Ball point pens, Plastic bowls, Plastic covering on electrical wires, Plastic chairs, Electrical switches.

3. Give examples to show that plastics are non corrosive in nature.
4. 'Avoid plastics as far as possible'. Comment on this advice.

Learning Outcomes: The students will be able to

1. Differentiate materials of natural and human made fibers on the basis of their properties. 2. Relates process and phenomenon which causes of preparation of synthetic fibers
3. Draws the flow chart of uses of man-made fibers.
4. Conducts simple investigations to seek answers to queries on Man-made fibers that are stronger than natural fibers.
5. Exhibits creativity in designing, planning, making use of synthetic fibers and plastics.
6. Draws flow charts of characteristics of synthetic fibers.
7. Applies learning of scientific concepts in day-to-day life on usage of synthetic fibers.
8. Discusses and appreciates stories of scientific discoveries of Synthetic fibers and plastics.
9. Differentiates materials of thermosetting plastics and thermoplastics.
10. Differentiates materials of biodegradable and non-biodegradable materials on the basis of their properties.
11. Applies learning of scientific concepts in day-to-day life of segregating biodegradable and non-biodegradable wastes.
12. Classifies materials based on properties of can be recycled' and 'cannot be recycled
13. Makes efforts to protect the environment of using plastics resources.

Experience and Reflection:

1. Students will acquire adequate knowledge in dressing according to the period.
2. Students apply 5R principles in daily life.
3. Students play their part in protecting the environment when they use synthetic fibers.

Assessment:

It will be done on the basis of Periodic test, activities activities, Oral test, class response and assignments 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 & 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
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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
- Including hands on learning and sensory activities



Month-April and May 2023

Subject-science(physics)

No.of days -10days

Topic -force and pressure

Learning objectives

- 1.To understand force and various effects of force**
- 2.To discuss the resultant force**
- 3.To study about muscular force, mechanical force and frictional force**
- 4.To learn about magnetic force, electrostatic force and gravitational force**
- 5.To study about pressure and various applications of pressure**
- 6.To learn about atmospheric pressure**

P K testing

The teacher will ask the students

- 1. What changes do you observe when you apply force to**

A football

A piece of clay

A swing

A stationary chair

Vocabulary

**Stationary, resultant, contact force, gravity, manometer, capillaries, Pascal,
Atmospheric pressure, newton, magnetic force**

Explanation

The students will recognize various changes observed by the force and the

**Teacher will explain the units of force which are Newton and kgf. By showing
Various examples, the teacher will explain the resultant**

Force and addition and subtraction of forces.

The teacher will explain the various forces by performing different activities.

Paper clips of iron are attracted by the magnet due to magnetic force. A

Charged comb attracts the pieces of paper due to electrostatic force. The

Teacher will introduce the term pressure

SI units of pressure are pascal.

Pressure= force/area

The teacher will perform various activities online so that the students relate

Pressure with liquids.

Procedure

Starting with force and its kinds each and every concept will be discussed in

Detail through zoom class. The learners will be encouraged to watch the

Content related topics online during their free time.

The learners will be made aware of the current developments of this field.

Various diagrams will be discussed 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.**

Innovative pedagogies

1. Students will be asked to have a game of tug of war with equal number

Of members to learn about resultant force

2. They will be asked to see a bar magnet and how it attracts the iron

Piece.

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.

4. They will draw the various diagrams and figures in the class itself

5. B. A force can act on an object with or without being in contact with it

6. C. Gases does not exert pressure on the walls of their container

9. D. The force exerted by a charged body on another charged or uncharged body

10. Is known as gravitational force

12 E. magnetic force is a contact force 14

force of gravity is an attractive force

15 Atmosphere pressure at high altitudes

is less than the pressure at ground

.

16 H. People at plains suffer from nose bleeding.

Assignment – 2- Fill in the blanks. A.

An example of a non-contact force is

_____.

B. The pressure exerted by air around us is known as _____.

C. SI unit of force is _____.

D. Application of force can change the _____ or _____ of an object.

E. Force exerted by our muscles is called _____ force.

. F. Direction of force of friction is always _____ to the direction of motion.

G. Force per unit area is called _____.

. H. The force exerted by a charged body on another charged or uncharged body is known as _____

I. Force has _____ as well as _____

LESSON PLAN

Month : May,2023 Class :VIII

Subject : science (Biology)

No. of days needed for completing the topic – 15 days

Topic:Microorganisms:friends and foe

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 :-

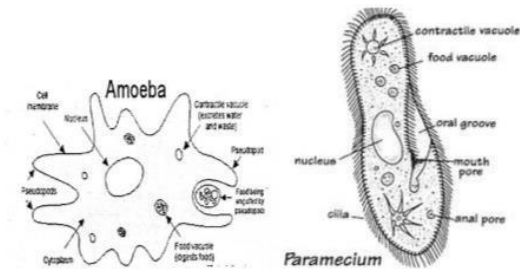
Unicellular, multicellular, bacteria, virus, algae, protozoa, antibiotics, immunity, preservation , dehydration, pasteurization, sodium benzoate,potassium, metabisulphite, assimilation, denitrification, ammonification.

- **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>

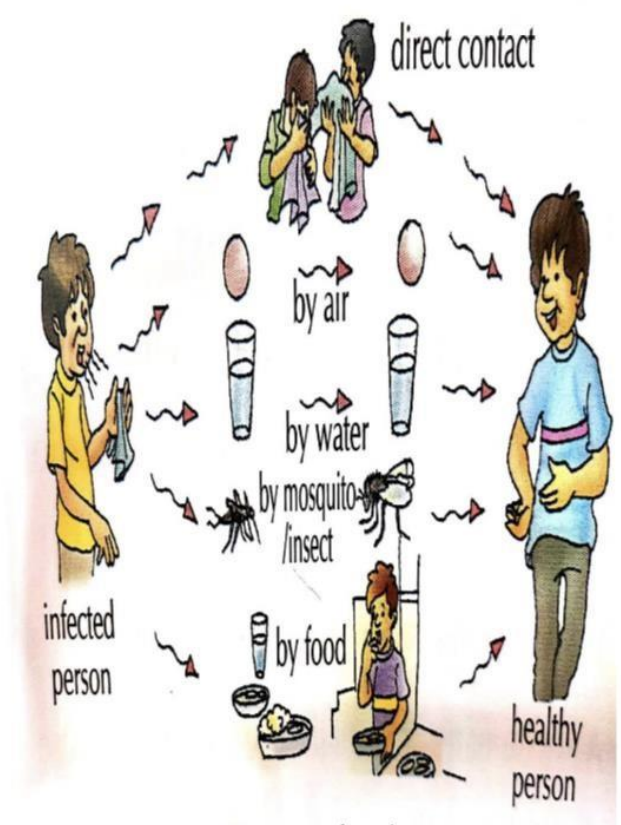
• **Procedure** :-

- (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.

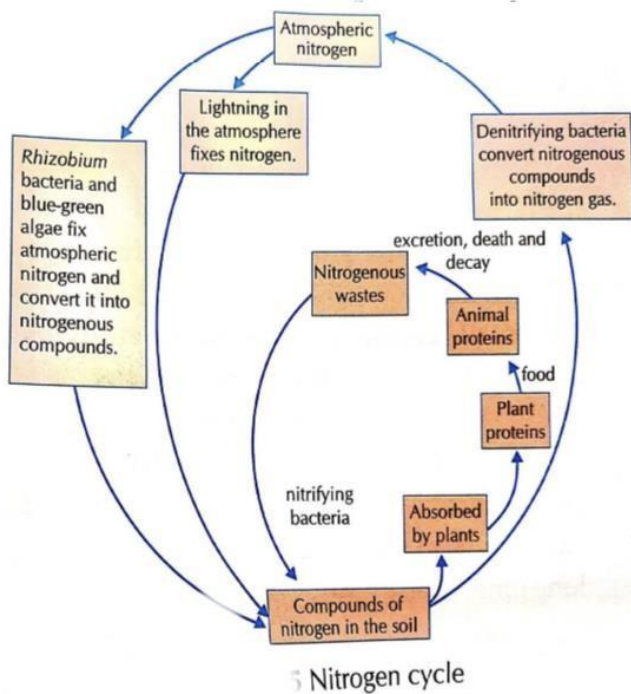


• **Participation of Students** :-

- (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



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 fermentation
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 collect 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 :-

Cordova Publications, NCERT Exemplar and Cordova Software

- **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 & 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 : May,2023 Class :VIII

Subject : science (Biology)

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

3. Which fuel is used in steam engine? How is it 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.

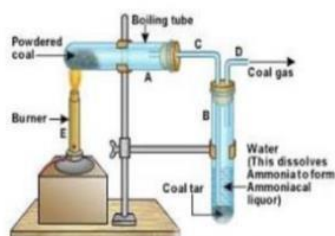
Inexhaustible Resources –

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.

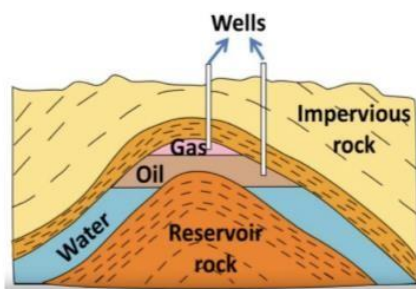
Art integration:

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 happen if we inhale 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>

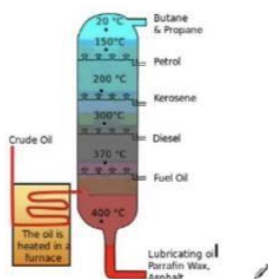
The students will be told to prepare a project report on the use of alternative sources of energy like Solar Energy, Wind Energy and Tidal Energy.

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.

The fractional distillation of crude oil



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, 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
- 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

Month-may

Subject-science(physics)

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

Physics for middle classes class 8

Pearson IIT foundation series class 8

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 : July,2023 Class :VIII

Subject : science (Biology)

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 complete 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 :-

- 1.Science by Cordova Publications. (ii) NCERT
Exemplar
- (iii)Cordova software.

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
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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
- Including hands on learning and sensory activities

Month- July and August

Lesson plan

Class – 8

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=6NAzIIZ_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.

Lesson plan

Month-August 2023

Subject-science (biology)

No of days needed for completing the topic -10 days

Topic – Pollution of Air and water

Previous Knowledge Testing –

- Which type of pollution is caused when you burn crackers during Diwali?
- What happens when the garbage is dumped into the river water?
- Name a greenhouse gas which causes global warming.

Important Spellings –

Urbanisation, Contamination, Permissible, Ultraviolet, Eutrophication,

Chlorofluorocarbon, Zooplankton, Chlorination, Potable

Aids / Innovative Methods used to Explain The Topic –

With the help of Smart class the sources of air pollution will be

Discussed.

They will be shown a video / ppt related to Carbon Monoxide poisoning.

Poster making in class : - On topic – Prevention of air pollution.

<https://www.learncbse.in/>

<https://www.youtube.com/watch?v=L-HC85rgbOA>

Procedure –

Various causes and effects of air pollution will be explained in detail in the

Class.

The topic acid rain, Global Warming and ozone layer depletion will be

Discussed in the class with the help of Smart Class and video

The students will be told to speak about the methods of prevention and

Control of air pollution.

Various causes of water pollution will be discussed in the class.

The topic of Eutrophication and Biological Magnification will be

Explained in the smart class

The students will speak about different ways by which water pollution

Can be controlled.

Participation of Students –

The students will draw diagrams related to Global Warming, Acid Rain,

And Biological Magnification in their notebook.

- They will speak about various methods to control air and water pollution.
- They will participate in discussion –

“Adverse effects of Burning Crop Residue”

Recapitulation –

- Which gas can kill a person if inhaled in excess?
- Why is chlorine added to filtered water ?
- Which radiations are prevented by Ozone layer?
- Name various greenhouse gases
- What is the function of Catalytic Converter?

Assignments –

The students will write one case study about Damaging Effects of air

Pollution on monuments or Damaging effects of Water Pollution on River
Ganga in their notebook.

- They will paste pictures related to any one alternate source of energy (Hydel, Tidal, Solar, Wind, Geothermal, Biomass etc.)
- They will find information on topic “Why CFC’s have been banned in

Various countries and which protocol was signed between various
Countries to prevent ozone layer depletion.

Sustainable goals - By 2030 improve water quality by reducing pollution,eliminating dumping and minimising release of hazardous chemicals and materials,halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.The teacher should motivate children to achieve these goals

September-half yearly exams

Term 2nd

LESSON PLAN

Month : October ,2023 Class :VIII

Subject : science (Biology)

No. of days needed for completing the topic – 15 days

Topic: Cell structure and functions

Objective :-

- Students will be able to define
The cell
Level of organization
Cell shape and size Cell membrane
Cytoplasm Nucleus
- Students will able to differentiate between plant cell and animal cell
- Students will be able to distinguish between Prokaryotic cell and Eukaryotic cell

Previous Knowledge Testing :-

Following questions will be asked to test the previous knowledge about topic .

- (i) How are living things different from non – living things ?
- (ii) Which is the basic unit of life?

Important spellings :-

Cell membrane, cytoplasm, nudeus, mitochondria, vacuoles, endoplasmic, reticulum, ribosome, Golgi bodies, plastics, Centrosome.

AIDS / Innovative methods used topic :-

- Online resources
- Topic will be explained by using the following links.
<https://youtu.be/GOCrD2OLWCK> <https://youtu.be/zTa4j6eRV0s>

Procedure :-

- (i) Introduction of the topic will be given by using online resources.
 - (ii) Reading and discussion of the topic will be done in the classroom
 - (iii) Related questions / answers will be discussed. importance of life features is explained.
- Demonstration of features of life is done by displaying a video.
 - Drawings of various types of living cells are depicted.
 - Preparation methods of

various slides relating to living cells is explained using charts and videos along with demonstration in laboratory.

➤ Differences in structure and functions of plant cell and animal cell are explained using charts and screening of videos.

Diagrams of the following will be drawn.

- (iv) Onion peel cell
- (v) Human cheek cell
- (vi) Plant cell
- (vii) Animal Cell

Participation of the students :- Student will be read and discuss answer will be written by the students in the notebook

Student will draw the diagrams in the notebook

Children discuss the importance of life and arrive at a meaningful conclusion in groups. ✓

Participate in groups actively in model making of plant cell and animal cell using clay and colors.

✓ Express their concern over conservation of life.

✓ Children undertake simple project works relating to preparation of lists of prokaryotic and Eukaryotic cells at home and presentation of paper later in the classroom. **Recapitulation**

and Assignments:

- Students will complete Q/ans in the notebook.
- Students will draw diagrams of the topic. Students will complete MCQ and back exercises. Following questions will be asked
- Who discovered the cell?
- ----- is the smallest cell.
- The shape of WBC is -----.
- DNA is present in----- . Where are plastids found?
- Every cell is bound by-----.
- Bacteria and blue green algae are_____.

Experiential learning:

1. To observe onion peel cells under the compound microscope
- 2 To observe cells from the inner lining of cheek

Art Integration :-

Draw diagrams of plant cells and animal cells.

- (I) Shown chart of plant cell and animal cells
- (ii) Make models of plant cell and animal cell
- (iii) Role play
- (iv) Poem recitation on different shape of cell

Appreciation and aesthetic sense/values :

The student will be able to

- > Appreciate the green plants role in food manufacture in this Nature through photosynthesis.
- > Appreciate the research work conducted by several scientists in the field of nutrition.
- > Observe some plants and animals with special/unique features in their surroundings.

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

Propagate the concept of biodiversity in his vicinity among his/her peer age children.

- > Adopts good food habits to maintain proper health and hygiene.
- > Formulates hypothesis and concepts pertaining to the subtle relation that exists between the plants and animals in this Nature.

Learning Outcomes :-

1. Students will come to know about cells , cell shape and cell organelles.
2. Students will also develop drawing skills by drawing plant cells and animal cells.
Learners will learn and understand about cells and the structural organization of cells.
3. Skills like observational and experimental will be developed in the students and values like division of labor and teamwork (as all the organelles divide the work among themselves), leadership (as nucleus work as controlling unit), obedience (as all Organelles obey the command of controlling unit) were inculcated among the students.
3. Students will be able to identify that cuts and wound heals due to the process of cell division
4. They will be able to analyze that formation of one organelle leads to the formation of another organelle which inculcates the value of coordination, obedience etc.

Resources :-

- (i) science – by Cordova publication
- (ii) NCERT exemplar
- (iii) Extramarks and Cordova software

Co-Scholastic activities :-

(i) Critical thinking, keen observation, Group discussion and communication skill 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
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- Written Works
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- Use of Technology)

PRODUCTS OF LEARNING(Written Works

- Projects
- Performance Tasks
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Remedial Teaching

Teacher once again repeat the lesson.

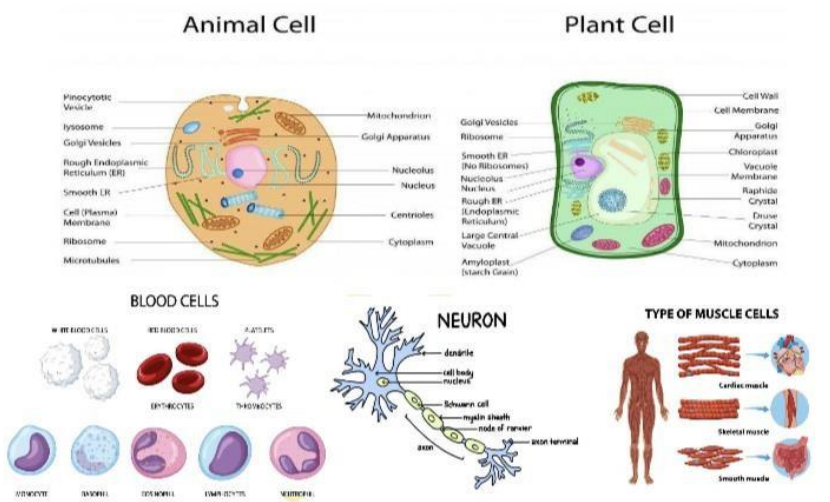
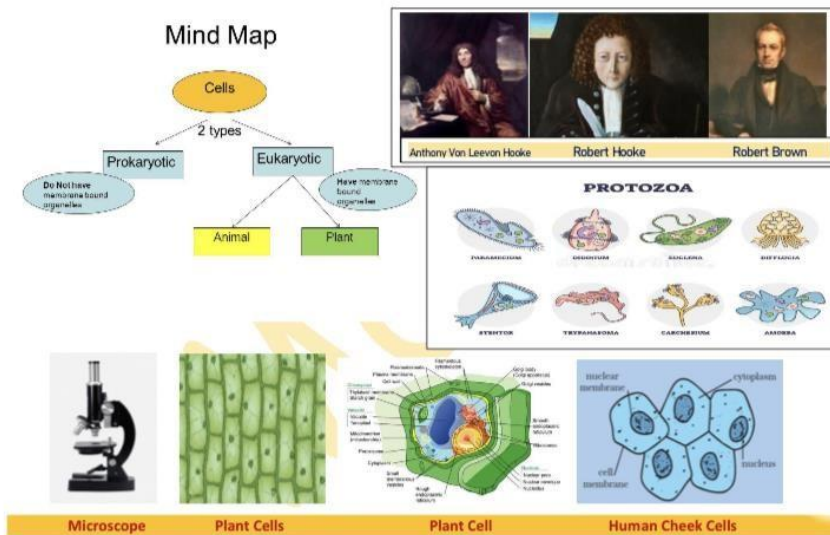
1. Teacher discuss about the topic content
2. Those students who are found lacking in any of the above steps, then remedial teaching is given.
3. Find the slow learners and give two more explanations and activities

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
- Including hands on learning and sensory activities



LESSON PLAN

Month : October- November, 2023 Class :VIII

Subject : science (Biology)

No. of days needed for completing the topic – 15 days

Topic:Materials: Metals and Nonmetals

OBJECTIVES

To teach students about the symbols of metals and non metals.

To make them differentiate between metals and nonmetals on the basis of physical and chemical properties.

To teach them exceptions of metals and nonmetals based on physical properties.

To make them understand about the phenomenon of corrosion and methods of prevention of rusting.

PREVIOUS KNOWLEDGE TESTING:

Questions to be asked.....

Which gas is having highest concentration in the atmosphere?

Which is the hardest natural substance?

What is the nature of substance if red litmus paper turns blue in it?

Which conditions are necessary for rusting? Name the metal which is deposited on iron during galvanisation process.

Which alloy is used for joining electrical appliances?

VOCABULARY AND IMPORTANT SPELLINGS:

Metalloids, arsenic, antimony, germanium, gangue, metallurgy, haematite, malleability, hammering, ductility, stretched, gallium, sonority, platinum, corrosion, galvanisation, crucible, tarnished, electroplating, anodising, chrome steel, duralumin.

INNOVATIVE PEDAGOGIES:

Explanation of physical properties of metals and non- metals in the smart class.

Properties of metals and non-metals and uses will be discussed with the help of video

(https://youtu.be/105Dz_t3F04) (<https://youtu.be/fjHplFxGae8>)

Chemical reaction of metals with oxygen and displacement reaction will be performed in the lab/ virtual lab.

Recording of observations of changes in metals coins when exposed to air.

Making of concept maps and flowcharts. Learning of reactivity series through mnemonics.

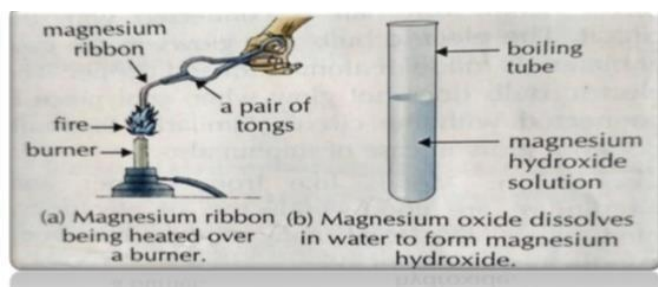
PROCEDURE:

Introductory Activity: Take some metal samples (like aluminum foil, copper wire, bicycle bell) and Non metal samples (like pencil lead, coal etc). This activity shows the physical properties of metals and non metals like malleability, ductility, sonorous, conductivity and brittleness. Real life examples, breaking up, Various terms related to physical properties like malleability, ductility, brittleness, sonority, luster etc. will be explained in the smart class.

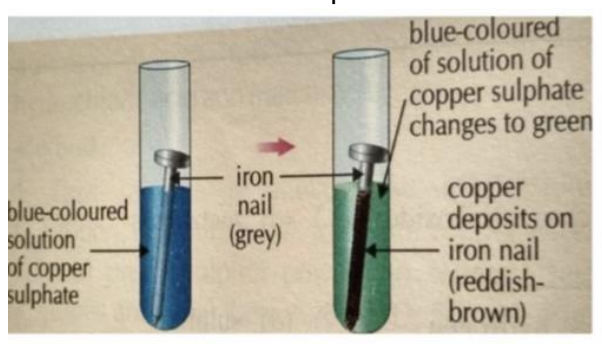
The difference between physical properties of metals and non-metals will be explained with the help of examples.

Chemical reactions of metals and non-metals with oxygen, water and acids will be explained with the activity in the laboratory.

e.g. When Magnesium reacts with oxygen, white powder of Magnesium oxide is formed which is basic in nature.



It will be explained with examples that the displacement reaction is a chemical reaction in which a more reactive metal displaces a less reactive metal from its salt solution.



Activity regarding testing of metals with different acids will be shown in the smart class.

Uses of some important metals and non-metals in our daily life will be discussed. The process of corrosion in case of silver, copper, and iron (rusting) will be discussed and the students will be told to write down the chemical reaction of corrosion.

With the help of various examples, it will be discussed that alloys are homogeneous mixture of two or metals or non-metals. The uses of various alloys like brass, bronze, duralumin, German silver, steel, chrome steel, stainless steel, solder etc. will be discussed.

Revision of various sub topics will be taken up in the class (MCQ, short Q's, definitions, reasonbased questions, diagrams) and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS:

The students will write the names of metals and non- metals and their symbols in tabular form. They will paste pictures of metals and non-metals used in our daily life in the notebook. They will write various definitions related to physical properties and will write about exceptional cases of metals and non-metals. They will write reactivity series of metals in the decreasing order in their notebook.

The student will share the ideas about the methods of prevention of rusting and observe the color changes in various metal coins at their home. They will actively answer the reason-based questions, draw the diagrams, solve MCQs and objective questions in the class.

Concept Based Questions:

- 1) Gold is a very precious metal. Pure gold is very soft it is therefore not suitable for making jewelery. It is alloyed with either Silver or Copper to make it hard. But sometimes jewelers mix a large quantity of copper and Silver in gold to earn more profit.
 - a) What precautions should you take while purchasing gold jewellery?
 - b) Why does Government insist on purchasing Hall Marked jewellery?
- 2) Corrosion is a serious problem. Every year an enormous amount of money is spend to replace damaged iron. What steps can be taken to prevent this damage.
- 3) Mercury is the only metal found in the liquid state. It is largely used in thermometers to measure the temperature. But mercury is a very dangerous metal as its density is very high. What two precautions would you take while handling the equipment containing Mercury?

RECAPITULATION:

What are metalloids?

What is the difference between malleability and ductility? How will you test for metals and nonmetals about acidic and basic nature?

Which gas is produced when metal reacts with water? What is an alloy? What are constituents of solder? Why does copper sulfate solution turn green in color when iron is added to it?

K	POTASSIUM	- Please
Na	SODIUM	- Stop
Ca	CALCIUM	- Calling
Mg	MAGNESIUM	- me
Al	ALUMINIUM	- a
C	CARBON	- cute
Zn	ZINC	- Zebra
Fe	IRON	- I
Pb	LEAD	- Like
H	HYDROGEN	- her
Cu	COPPER	- Calling
Ag	SILVER	- Smart
Au	GOLD	- Guy



ASSIGNMENTS:

The students will be told to tabulate differences between metals and nonmetals on the basis of physical and chemical properties.

They will paste pictures of uses of metals and non- metals in their notebook.

They will be told to observe the color changes occurring in the various metal coins and discuss their observations in the class.

Remedial Measure For Low Achievers 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

1. List five physical properties of metals and compare them with non-metals.

2. Why is gold widely used for making jewellery?

3. Name one metal commonly used for making cooking utensils. Give reason also.

4. Give exceptions in the following cases

a. All metals exist as solid at room temperature. b. Non-metals are non-lustrous.

c. Non-metals do not conduct electricity.

d. Metals are hard.

e. Solid nonmetals are brittle.

5. What is observed when Magnesium ribbon is burnt in a flame. (b) Copper metal is heated in air.

6. Name two metal oxides that are soluble in water. (Write equation also) 7. with the help of equations, show that Al_2O_3 is an amphoteric oxide.

8. Write equations for the reactions of an acid with:

a. Zn metal. (b) Na_2CO_3 (c) $NaHCO_3$ (d) NaOH solution.

9. Why is there no evolution of hydrogen when nitric oxide reacts with metals?

10. What is the reactivity series of metals?

11. What is an electrovalent bond?

12. Why does a solution of sodium chloride conduct electricity which solid NaCl does not?

13. Write properties of ionic compounds.

14. Differentiate between a mineral and an ore.

15. Give reasons:

a. Gold and silver are found in their free state.

b. Sodium is never found in its free state.

c. The sulphide ore is converted into an oxide for the extraction of metals.

d. The oxides of metals like Hg can be reduced by heating only. e. The oxides of metals like Na, Mg, and Ca cannot be reduced by carbon

16. Name two metals that can be refined by electrolysis.

17. Name the cathode, anode and the electrolyte for refining of copper electrolytically.

18. Name the substance formed on the surface of iron, silver and copper due to corrosion.

19. How is steel different from stainless steel?
20. What is an alloy? Write the composition of brass, bronze and solder.

A. Fill in the blanks.

1. Some metals like _____ and _____ are poor conductors of heat.
2. The shining surface of the metals may become dull due to the formation of _____ layer.
3. Silver foil is used to cover Indian sweets because it is highly _____ and can be beaten into very thin sheets.
4. Diamond is a non-metal but still the _____ natural substance known.
5. The gas released when a metal reacts with an acid is _____. B.

Analogy type questions .

1. Metal : Basic oxide :: Non-metal : _____
2. Reactive metal (Na) : Electrolytic reduction :: Medium reactive metal (Zn) : _____
3. Sodium : Soft :: Iron : _____
4. Drawn into wires : Ductile :: Beaten to thin Sheets : _____
5. Copper : No reaction even with steam :: Sodium : _____ C. Answer the following questions

1. What happens when Hydrochloric Acid reacts with metals?
2. Zinc oxide is considered as an amphoteric oxide. Give Reasons.
3. Non-metals form acidic oxides whereas metals form basic oxides. Justify the statement.

RESOURCES:

NCERT Exemplar

science (Cordova publication)

Videos- (https://youtu.be/105Dz_t3504)

(<https://youtu.be/fjHplFxGae8>)

ART INTEGRATION AND OTHER DOMAINS:

Color changes in various metal coins.

Make a wind chime to demonstrate the sonority of metals .

Experiential learning:

1. To show that metals are good conductors of electricity and non metals are bad conductor of electricity
- 2 To show that metals react with oxygen to form basic oxides
3. Teacher will show the burning of magnesium ribbon, Ash collected and tested with litmus

CO-SCHOLASTIC ACTIVITIES:

They will provide examples for different types of metals and non-metals and apply concepts learned in everyday problems.

They will be able to critically analyze the importance of metal and nonmetals.

Hands on learning experience by the students by performing chemical reaction activity.

LEARNING OUTCOMES:

They will be able to effectively interpret various uses of metals and non-metals.

They will be able to differentiate between physical and chemical properties of metals and nonmetals.

They will be able to answer the application-based questions.

They will be able to write word equations and chemical reactions of metals with air, water and acids.

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 -November

Class 8

Topic sound

No of days needed- 10

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

CORDOVA SCIENCE

7 CBSE 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?**

LESSON PLAN Class VIII

Subject : Science (Biology)

Month- November 2023

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/66HLbRublzl>

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 :-

- (i) Learning science – by Cordova publication
- (ii) NCERT exemplar
- (iii) Cordova software

• **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)

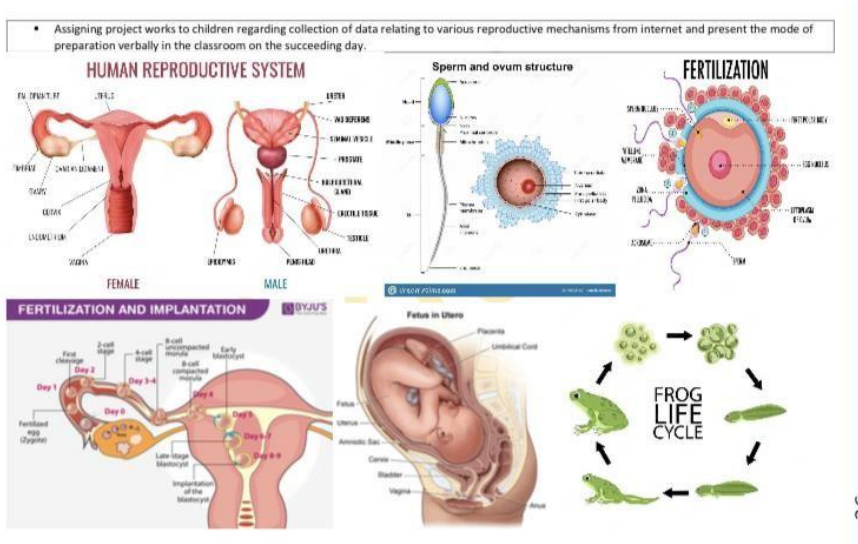
Remedial Teaching

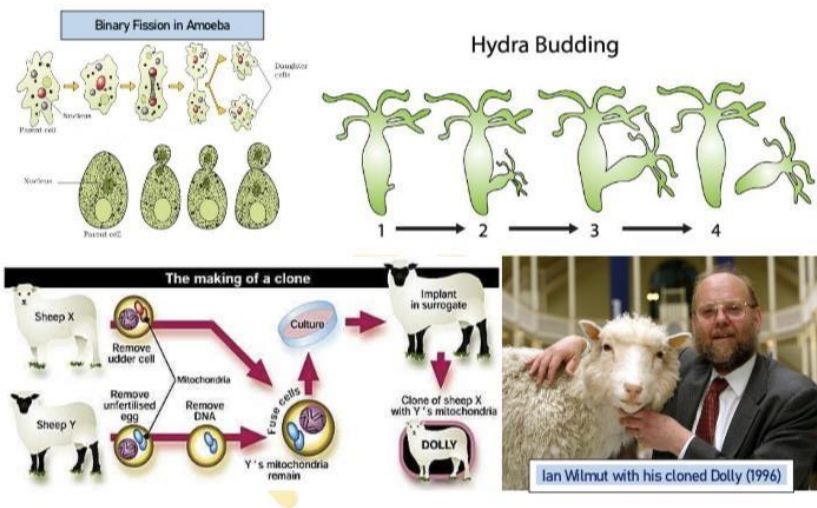
Teacher once again repeated the lesson.

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 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 -December,2023

Subject-Science

No of days needed-12 days

Topic -some natural phenomenon

Objectives

- Students will be able to know the static charge that it can be produced by rubbing two different objects
- 2 The charge can be detected by using an electroscope
- 3 They will be able to understand the cause of earthquakes
- They will be aware about the safety measures that can be taken in case of a natural disaster

Interdisciplinary- Use the internet to find the huge damage to life and property caused by earthquakes and prepare a report on the suffering of people due to earthquakes

- Experiential learning-**
1. To show that like charges repel each other
 2. Sure test of electrification
 3. To show that unlike charges attract each other

LESSON PLAN

Month : December,2023 Class :VIII

Subject : science (Biology)

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 combustible 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 teach 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.

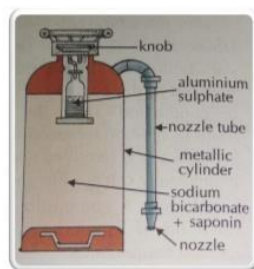
7. Characteristics of good fuel and harmful products formed on burning of fuels will be explained by smartclass.

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.

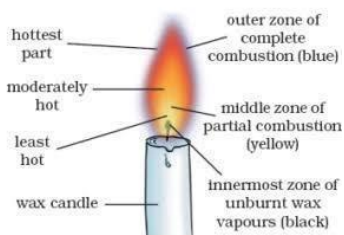
They will participate actively in the class on the topic –Judicious use of fossil fuels.

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 :

NCERT Exemplar.

Science (Cordova Publication).

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
- 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

Month-January 2023

Lesson plan 8th

Science(biology)

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) Learning science – by Cordova publication

(ii) NCERT exemplar

(iii) Extramarks and Cordova software

(iii) (iv) Chart making on information about endocrine glands.

(iv) • Co-Scholastic activities :-

(v)

(vi) (i) Group discussion, Critical thinking, keen observation and

(vii)

(viii) Communication skill will develop.

(ix)

(x) Assessment:

(xi)

(xii) It will be done on the basis of periodic test, activities,

(xiii)

(xiv) Oral test, class response and assignments.

Lesson plan

Class 8th

Science (physics)

Month – January 2023

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 screen 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 eye**
7. **Starting with light each and every concept will be discussed in detail in class.**
8. **The learners will be encouraged to watch the content related to 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 tutorial 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 values 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. Learning science and cordova
2. Extra mark slides
3. <https://youtu.be/sZXVS1uSCeg>
4. <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 _____.

5. How is sound produced?

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

Assignment- 2

State true/ false

(a) Sound cannot travel in vacuum. (T / F)

(b) The number of oscillations per second of a vibrating object is called its time

Period. (T / F)

© If the amplitude of vibration is large, sound is feeble. (T / F)

(c) For human ears, the audible range is 20 Hz to 20,000 Hz. (T / F)

€ The lower the frequency of vibration, the higher is the pitch. (T / F)

(f) Unwanted or unpleasant sound is termed as music. (T / F)

(g) Noise pollution may cause partial hearing impairment. (T/F)

Lesson plan

Class 8th

Month February 2023

Subject science (physics)

No of days required -15 days

Topic -Stars and solar system

Topic – Stars and the solar system

Learning Objectives

To learn about moon and phases of moon

To understand the solar system

To learn the characteristics of various planets

To discuss meteors, meteorites, comets.

P K testing

The teacher will ask the following questions while introducing the lesson

During online class

1. Do you see stars at night?
2. Do sometimes stars appear to form a certain shape?
3. Have you heard about the big bang theory?

Vocabulary

Astronomy, phases, spiral, lunar, crescent, waning, helium, rotation, elliptical,

Meteors

Explanation

The teacher will discuss the following one by one

Phases of moon

Arrangement of various planets in solar system

Various characteristics of each and every planet

Meteors, meteorites, galaxies, constellations in detail

Procedure

Starting with stars, planet and constellations each n every concept will be

Discussed in detail n class. The learners will be encouraged to watch the

Content related the topics online. 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 by screen share during zoom class

Innovative Pedagogies

1. Students will be asked to study about the various space scientists of

India

2. Students will be asked to create the various shapes of constellations

Using match sticks in their notebooks

Integration with other domain

1. While discussing the diagrams of constellations, the students will learn

About the solar system.

2. While discussing various satellites, the students will develop interest in Space programs of India.

Art integration

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

Diagrams related to constellations.

Student Participation

1. The students will be involved in group discussions during online classes.
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

Learning Outcomes

The students will be able to answer the following

1. What is moon? What are the phases of moon?
2. What is the arrangement of various planets in solar system?
3. What are the various characteristics of each and every planet?
4. Define meteors.
5. What are the various constellations?

Assessment

Following methods will be used to assess the grasping ability and acquisition of knowledge of the learners

1. Mcq's using google forms
2. One word answers during online oral tests
3. Group discussions
4. Placards with related questions

Resources

1. Learning science and cordova
2. Extra mark slides
3. <https://youtu.be/0h8EFLLdudo>
4. <https://youtu.be/5GUop7k-1SQ>

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