

Metric 2.4.2- Students go through a set of activities as preparatory to school-based practice teaching and internship. Pre practice teaching / internship orientation / training encompasses certain significant skills and competencies such as

1. Formulating learning objectives
2. Content mapping
3. Lesson planning/ Individualized Education Plans (IEP)
4. Identifying varied student abilities
5. Dealing with student diversity in classrooms
6. Visualizing differential learning activities according to student needs
7. Addressing inclusiveness
8. Assessing student learning
9. Mobilizing relevant and varied learning resources
10. Evolving ICT based learning situations
11. Exposure to Braille /Indian languages /Community engagement

Clarification Asked

HEI has not provided any supporting documents as per SOP. HEI needs to provide the Reports and photographs /videos of the activities, Attendance sheets of the workshops/activities with seal and signature of the Principal and Documentary evidence in support of each selected activity

Response

1. Reports of activities conducted related to metric are attached. (Appendix-I)
2. Attendance sheets of the workshops/activities with seal and signature of the principal are attached. (Appendix-II)

2023-2024

APPENDIX

I

SHRIYA. KALE

B.Ed. SEM II

EPC - 2

BLUEPRINT

SHILADEVI COLLEGE

WADI, NAGPUR

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Blueprint

Blueprint is just a design, plan or draft of something important. Blue-print is also called a measuring unit which includes planning, preparation, selection, executing and evaluation. A test is a measuring device of physical and mental characteristics.

In order to assess pupil performance periodically, the test is conducted by the class teacher. A test is to be carefully planned first before executing it.

Blueprint is a map or specification of assessment items based on educational outcomes and its primary function is to support the vicinity of assessment and with regard to its content, validity.

It helps to align assessment items with the intended learning outcomes and students learning experience.

• Preparation of Blueprint

It serves as a frame of reference for preparing the test items. This blueprint shows the distribution of test items content and objective of

of the test. It acts as a guideline for the test construction table of specialization or blueprint is a three-dimensional chart which are,

1) Determining weightage to different instructional objectives.

2) Determining weightage to the different content area.

3) Determining the item type to be included.

It is useful to prepare a blueprint so that the test maker knows which content unit, and

how many marks it would carry.

• Construction of Blueprint

The most important step in planning a test is to identify the instructional objectives.

The most important activity in the construction of an achievement test is to specify in the outline of the content area. It indicates the area in which the students are expected to show the performance. It helps to obtain a representative sample of the whole content area.

1. Ensure questions being asked in.
2. Make assessment fair to the students
3. Design the instructional strategies.
4. Ensure that the selected test items.
5. Planning the test.
6. Manuals and keys.
7. Different types of items
8. Items writing
9. Standardization.
10. Selection of type items

In order to test the

the attainment of knowledge and understanding of students, there is certain test material known as test paper or question paper is one of the most important concerns improving the present-day examination. While preparing a question paper the teacher has to take care of certain important aspects.

The question paper and blueprint are prepared or constructed by the teacher or based on the basis of the lesson and the contents presented to students in the classroom.

• Important Components of Blueprint

A blueprint is an important component of a process called test construction.

The test maker first assess the need for the test and the level of competition and then develop a plan for it.

Exams are crucial component in evaluating applicants and identifying the most qualified ones.

The blueprint offers a perfect module for test writers to create the best exam questions.

Blueprint serves as a useful strategy for matching

assessment goals with learning objectives and aids in distributing questions and weighting across topics. Assessment should include the blueprint in its entirety;

1) The blueprint presents an illustrated information hand-out about the questions and weightage to be asked.

2) The test makers follow a certain process to plan to screen the knack of the candidates rightly.

3) The test maker decides which questions can be objective and which is subjective.

4) The questions are laid in a specified format.

5) The main components of a test such as the material to be covered, the weight given to certain topic, areas, and other significant features, are described in a test blueprint.

6) The exam blueprint is laid out along with the entire information packet.

7) The purpose of blueprint is to help the candidates taking the exam prepare well for it.

8) It describes the specified format of the test & weightage of the topics that are to be studied.

• Advantages of Blueprint

1) Guides lesson planning

Blueprints in education act as roadmaps, directing the design of lessons and ensuring a structured learning process.

2) Ensures balanced content coverage

They guarantee that all topics get equal attention, ensuring no part of the syllabus is neglected.

are surely emphasized.

3) Promotes consistent teaching standards

They help maintain uniformity in teaching method across different classrooms, fostering a standardized quality of education.

4) Aids in student assessment

They serve as a tool for evaluating students performance, enabling teachers to identify areas of improvement

5) Enhances learning outcomes

By streamlining, the

teaching and assessment process, they ultimately enhance the quality of learning outcomes.

6) Providing validity evidence

7) Quality assurance

8) Improving the perception of fairness

9) Refining the curriculum

10) Developing Question-Bank

• Significance of Educational Blueprint

Blueprint helps the teachers in designing the instructional strategies as per the guidelines expected in the curriculum.

Most of the faculty (100%) involved in the validation of blueprint felt that it acts as a guide in construction of test paper.

It is useful to prepare a blueprint so that the test maker knows which question in test which objective, which content unit, and how many marks it would carry.

It ensures that the selected test items give appropriate emphasis on thinking skills and assessment of in-depth knowledge.

In order to assess pupil performance periodically, the test is constructed by the class teacher.

It helps to elaborate on the needed skills.

Evaluating time management and strategy to achieve the desired outcome.

Educational administrators for curriculum development. It provide students for interactive approach for education planning to meet the curriculum

expectations and learning
objectives.

* * *

Subject - Biology

Blueprint

Part (A) Weightage to objectives:

Sr. No.	Objectives	Marks	Percentage
1	Knowledge	10	40
2	Understanding	8	32
3	Application	7	28
	Total	25	100%

Part (B) Weightage to content:

Sr. No.	Topics	Marks	Percentage
1.	Pollution	4	16
2.	Disaster Management	11	44
3.	Cell and cells organelles.	6	24
4.	Human Body and Organ system.	4	16
	Total	25	100%

Part (C) Weightage of questions:

Sr. No.	Types of Question	Marks	Percentage.
1	Long	3	20
2.	Short	10	32
3.	Objectives	12	48
	Total →	25	100%

★ Level of difficulty:

Sr. No.	Level	Type of Question	Marks (Que.)	Total no. of	Total
1.	Difficult (High)	Long	2	5	10
2.	Average (medium)	Short	1	9	9
3.	Easy (Low)	Objectives	1	6	6
		Total →			25

Blueprint

Objectives	Knowledge			Understanding			Application			Total
	L.Q.	S.Q.	Obj	L.Q.	S.Q.	Obj	L.Q.	S.Q.	Obj	
Topics Pollution	1 ⁽²⁾				1 ⁽²⁾				1 ⁽¹⁾	4
Disaster Management	2 ⁽⁴⁾		1 ⁽¹⁾		2 ⁽²⁾	1 ⁽¹⁾	1 ⁽²⁾		1 ⁽¹⁾	11
Cells and cell organelles		2 ⁽²⁾		1 ⁽²⁾		1 ⁽¹⁾		1 ⁽¹⁾		6
Human Body & Organ System			1 ⁽¹⁾		1 ⁽¹⁾			2 ⁽²⁾		4
Total →		10			8			7		25

Note: 1) Inside the brackets shows no. of marks, given to each questions.
2) Outside bracket no. shows no. of questions.

FIRST UNIT TEST 2024-2025

STD - 8th SUB - BIOLOGY MARKS - 25
TIME - 1.30 hrs.

- NOTE: ① All questions are compulsory
② Solve all the questions carefully
③ Draw well labelled diagram wherever necessary.

Q.1. Match the following: 4M

- 1) Normal body temperature @ Lycopers.
2) Red tomato (b) 37°C
3) Methane gas (c) Mental retardation
4) Water containing lead. (d) skin cancer.

Q.2. Draw diagram and label it neatly. (Any 2) 6M

- 1) Mitochondria 2) Animal cell
3) Structure of alveoli

Q.3. Complete the following: 2M

Reasons of air pollution

Natural
reasons

Manmade
reasons

Q.4. Answer the following questions:
(ANY 5) 10M

1) What is pollution?

2) What is acid rain?

3) Write about lysosome.

4) What is cytoplasm? Explain with a diagram.

5) Explain the effects of landslide.

6) What is the importance and need of blood donation?

Q.5. Give Scientific reasons: (ANY 2) 3M

1) Human blood is red coloured.

2) Don't use lifts at the time of earthquake.

3) Relation between green house effect and global warming.

* * *

Class 9th

Sub - Chemistry

Blueprint

Objectives	Knowledge			Understanding			Application			Total
	L.S.	S.S.	Obj	L.S.	S.S.	Obj	L.S.	S.S.	Obj	
Topics relon : An mporant element	1(2)	2(2)			3(2)	2(2)		2(2)	2(1)	11
Substances in comon use			2(1)		1(2)	2(3)	1(1)	2(2)		8
Acids, Bases & Salts	1(3)	2(2)						1(1)	1(1)	6
Total →		9		9				7		25

note: ① Inside the brackets shows no. of marks given
to each questions.

② Outside bracket shows no. of questions.

Subject - Chemistry

Blueprint

Part (A): Weightage of Objectives

Sr.No.	Objectives	Marks	Percentage
1	Knowledge	9	36
2	Understanding	9	36
3	Application	7	28
	Total	25	100%

Part (B): Weightage to content:

Sr.No.	Topics	Marks	Percentage
1.	Carbon: An important element	11	44
2.	Substances in common use.	8	32
3.	Acids, Bases & Salts.	6	24
	Total	25	100%

Part (C): Weightage of questions.

Sr. No.	Type of Question	Marks	Percentage
1.	Long	10	40
2	Short	6	24
3	Objectives	9	36
	Total →	25	100%

⊕ Level of Difficulty.

Sr. No.	Level	Type of Question	Marks (Que.)	Total no. of Q.	Total
1.	Difficult	Long	2	6	10
2	Average	Short	1	8	6
			3		
3.	Easy	Objectives	1	3	9
			4		
		Total →			25

FIRST UNIT TEST 2024-2025

STD - 8th SUB - CHEMISTRY MARKS - 25
TIME - 1.30 hrs.

- NOTE: ① All questions are compulsory.
② Draw well labelled diagrams wherever necessary.
③ Solve all questions carefully.

Q.1. Fill in the blanks: 3M

1) The chemical name of Teflon is _____.

2) A carbon atom forms a _____ bond with other atoms.

3) The element hydrogen is present in _____ organic compound.

Q.2. Match the pairs: 2M

1) Fused salt a) Oxidation of colour

2) CaOCl_2 b) Sodium metal fused.

Q.3. Explain the following:
(ANY 5)

10M

- 1) Methane is called a marsh gas.
- 2) Uses of various allotropes of C.
- 3) Biogas is an ecofriendly fuel.
- 4) Write the difference between acids and bases.
- 5) What is meant by neutralization? Give two examples.
- 6) Write the chemical equation for; Dilute HCl was poured on baking soda.

Q.4. Pick the odd one out and justify:

2M

- 1) Chloride, nitrate, hydride, ammonium.
- 2) Calcium oxide, magnesium oxide, zinc oxide, sodium oxide.

Q.5. Write symbols of the following: 2M

1) Mercury

2) Copper

3) Sulphur

4) potassium

Q.6. Draw well labelled diagram of the following: 3M

1) Internal structure of fire extinguisher.

2) Biogas plant.

Q.7. Write the uses of the following: 3M

1) Ceramic

2) Powder coating

3) Radioactive substance

4) Anodizing

~~Signature~~

SHEELADEVI COLLEGE OF EDUCATION, WADI

Year - 2023-24

ASSIGNMENT EPC - II

BLUE PRINT

Name - Tejaswini Pradiprao Arde

Sign. of H.O.D

Sign of Teacher



Sr. No.	Title	Page No.	Teacher Signature
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• Introduction -

Blue print is a document which give a complete functional picture of the test.

It shows - Distribution of question,

- Different objectives.
- Various aspect of the content.

The Blue print is 3-D chart having content spread along the vertical axis and objectives to be tested on horizontal axis.

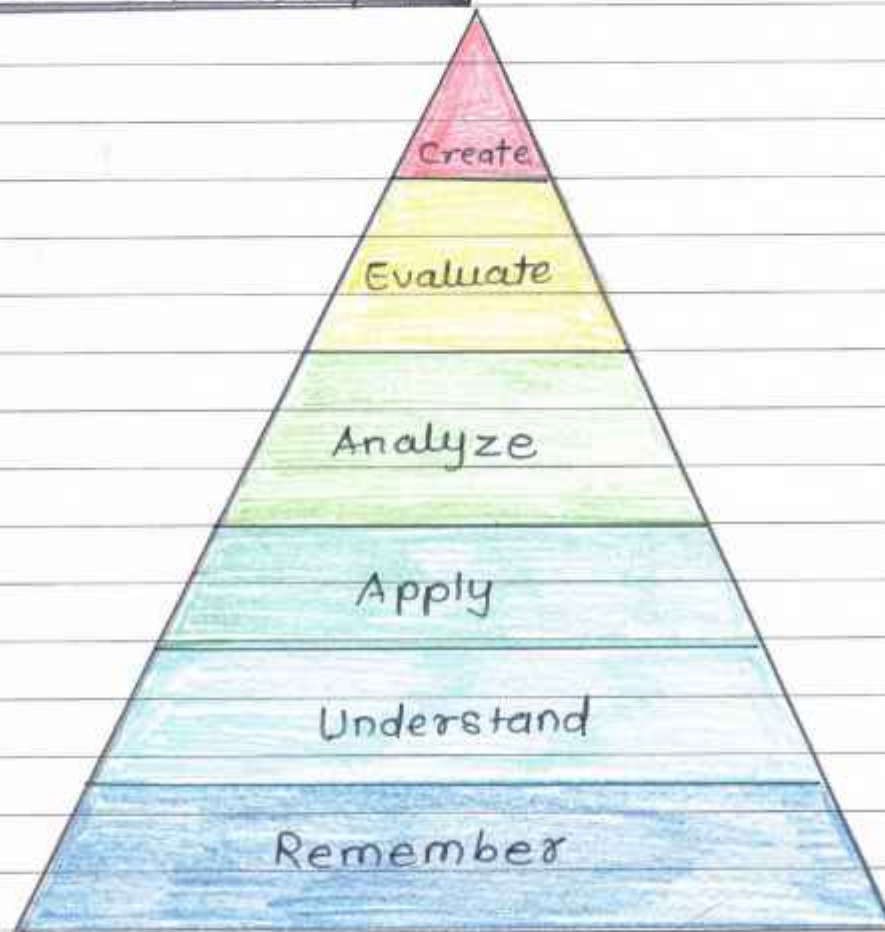
• Purpose of Blue Print -

The purpose of constructing examination using a blue print is to provide a conceptual map of examination format and the content area represent in assessment.

Meaning of Blue Print -

Blueprint is the matrix or chart reporting the number and type of test questions represented across the topics in content area.

- Basis of Blueprint -



- Create -

Produce new or original work.
Design, assemble, construct, conjugate, develop, formulate, author, investigate

- Evaluate -

Justify a stand or decision.
Appraise, argue, defend, judge, select, support, value critique, weigh.

- Analyse -

Draw connections among ideas.

Differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test.

- Apply -

Use information in new situations.

Execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch.

- Understand -

Explain ideas and concepts.

Classify, describe, discuss, explain, identify, locate, recognize, report, select and translate.

- Remember -

Recall facts and basic concepts.

Define, Duplicate, list, memorize, repeat, state.

• Definition -

According to Dictionary blue print is a detailed plan action.

A test blue-print, also known as test specifications, consist of a matrix, a chart representing the numbers of questions to be included in the test within each type and level of objectives.

The Blueprint identify the objectives and skills that are to be tested and the relative weight on the test given to each. The blueprint can help to ensure that desired coverage of topics and level of objectives had been obtained. After the preparation of blueprint, the task of writing the test items can be started.

• Need and Importance of Blue Print.

- 1) To standardized the question paper.
- 2) To incorporate the aim of the test
- 3) To check the difficulty level of question papers

Shree Ratta) To check the suitability of the textbook and syllabus, in respect of aim and target.

- 5) To define the scope and emphasis of the test.
- 6) To relate objective with the content.

• Functions of Blue Print

- 1) Helps to achieve ~~the~~ balance between instruction and assessment.
- 2) Provides a structure for communicating with students before and after testing.
- 3) Provides a structure for analysing, summarizing, and reporting result.
- 4) Helps to ensure that a test will sample all important content and process areas.

• Dimensions of the Blue Print.

- 1) Weightage to the objective for a classroom test, all the relevant instructional should be taken into consideration and given due weightage in test. Teachers take objectives from cognitive domain - like knowledge, understanding, application and skill.

Sr. No.	Objectives	Percentage of Marks	No. of Questions
1	Knowledge	15	11
2.	Understanding	30	19
3.	Application	35	17
4.	Skill	20	18
	Total	100	65

- Weightage of content / subject

Here, different areas of content, which are taught to students during instruction need to be given due weightage, according to their relative importance.

Sr. No	Objectives	Percentage of marks	Number of Questions
1.	Unit - 1	10	08
2.	Unit - 2	10	08
3.	Unit - 3	10	08
4.	Unit - 4	15	08
5.	Unit - 5	20	08
6.	Unit - 6	12	09
7.	Unit - 7	08	08
8.	Unit - 8	15	08
	Total	100	65

03) Weightage to form questions. Generally, for classroom testing purposes, Essay type, short answer type and objectives are used.

Sr. No.	Form of Questions	Marks for Questions	Percentage of Marks	No. of Questions
1.	Essay type	6	18	03
2.	Short answer type	3	30	10
3.	Objective type	01	52	52
	Total.		100	65

Weightage to difficulty level of Questions

Since in a normal classroom, three types students are found such as above average, average and below average.

Sr. No.	Type of Test Items	Percentage of Expected Difficulty levels
1.	Easy	15
2.	Average	70
3.	Difficulty	15
	Total	100

- Weightage of Expected time for each questions.

Sr. No.	Form of Question	Expected time for each other
1.	Long-Answer type	45 min on average
2.	Short-Answer type	55 min 2 min
3.	Objective type	80 min per min.
	Total	180 minutes

- Scheme of option - three will be no option or internal choice
- Weightage to Numerical - According to subject or topic
- Perfect / standard blue print

A blue print will be said to be perfect if it gives proper weightage to learning outcomes.

- Objectives - Knowledge, Understanding application and skill.

- Weightage - Changes with the subject to subject of curriculum topic.
- Earlier Trend was,

Objective	Percentage
Knowledge	30
Understanding	50
Application	20

Latest trend from 2008 onwards is

Knowledge - 30% , Understanding - 40%
Application - 20% , Reasoning - 10%

- Advantages of Blue Print

To ensure content validity of test.

To provide guidelines for constructing questions.

To make comparison with other tests.

To relate objectives to the content / Topic

To be able to reproduce a test with similar content, cognitive and difficult level in future.

To ensure balance among the topics and skills which are to be tested.

• Why Blueprint is important?

Blueprint links assessment to learning objectives.

It indicates the marks carried by each question.

It helps teacher to know which question will test which objective and which content unit and how many marks it would carry.

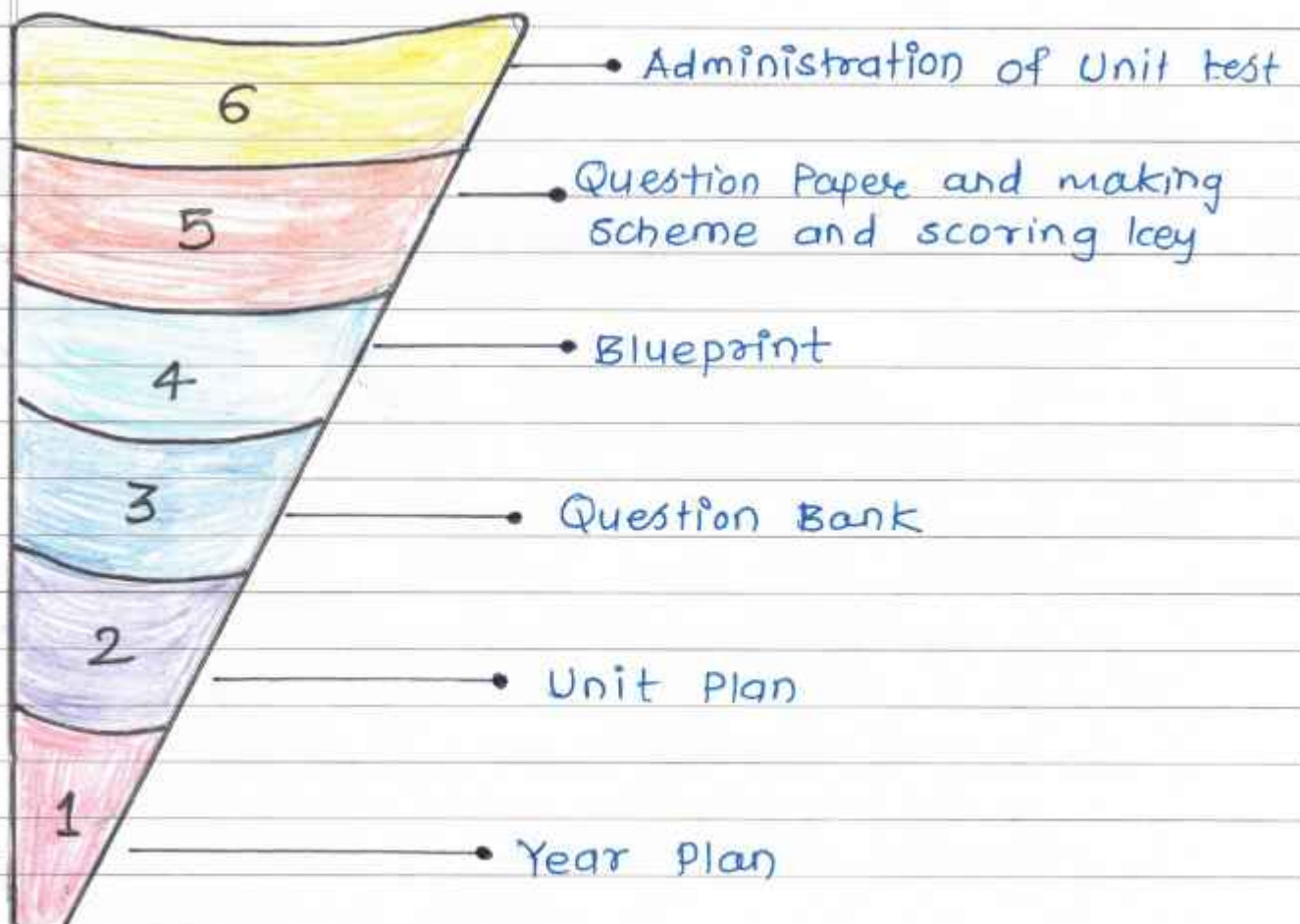
- Format of Blueprint-

Objectives	Remembering			Understanding			Applying			Analyzing			Evaluation			Creating			Total
	O	S	E	O	S	E	O	S	E	O	S	E	O	S	E	O	S	E	
A																			
B																			
C																			
Total																			

• Unit-Test in Blueprint

- 1) The unit test is a short test to be given at the end of teaching a unit.
- 2) Unit test is not
- 3) Random assortment of question.
- 4) A test of 15/20 marks instead of 100 marks.
- 5) Unit test arranged by secondary school.

• Process of Unit test



- Benefits of Blue Print -

Give feedback on student's progress and teachers

From student's point, how well they attain the objectives.

Provides a guide to both to students and teachers.

Determines the reliability and validity of the examination.

Bloom's taxonomy helps in developing the entire written and some aspects of practical questions.

- Purpose of Preparing the Blueprint

Clearly defines the scope of the test

Relates the objectives to the content

Improves the content validity of teacher to make the test.

Assure that the test will properly measure the learning outcomes.

Method - I - PHYSICS

Q.1 Write the proper word in the blank space. (5M)

a] The S.I unit of force is -----

(Dyne , Newton , Joule)

b] The S.I unit of pressure is -----

(N/m^3 ; N/m^2 , kg/m^2 , Pa/m^2)

c] Water in the waterfall flows from a higher level to the lower level because of -----

(gravitational attraction, potential difference)

d] An electric current flowing in a wire creates ----- around the wire

(4.5V , 3.0V)

e] The perpendicular to the mirror at the point of incidence is called -----

(Normal, refractive index)

Q.2 Make a Match. (5M)

- | | | |
|---------------------|-----|-------------------------|
| 1. Fluid | [] | a) Higher pressure |
| 2. Blunt knife | [] | b) Atmospheric pressure |
| 3. Sharp needle | [] | c) Specific gravity |
| 4. Relative density | [] | d) Lower pressure |

Shree R.S. Hecto Pascal [] e) Same pressure in all directions

Q.3. Draw a figure showing the following (3M)

- Incident Ray
- Angle of Incidence
- Angle of reflection

• Short answer Questions (6M)

Q.4.a) A battery is to be formed by joining 3 dry cells them with connecting wires. showing how will you connect the wire by drawing a diagram.

b) A plastic cube is released in water. Will it sink or come to the surface of water?

c) If the angle between the plane mirror and the incident ray is 40° , what are the angle of incidence and reflection?

Q.5. Answer the questions in brief. (6M)

a) Explain the difference between regular and irregular reflection of light?

b) How much pressure do we carry on our heads? Why don't we feel it?

Method-II - Mathematics

Q. 1 In the adjoining figure, each angle is shown by a letter. Fill the boxes with the help of figure. (5M)

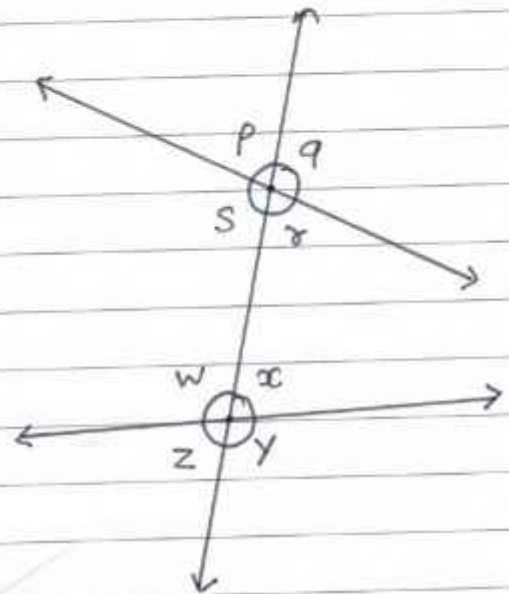
- Corresponding angles.

1) $\angle P$ and

2) $\angle q$ and

3) $\angle r$ and

4) $\angle S$ and



- Interior alternate angles

5) $\angle S$ and

Q. 2. Write the following rational number in decimal form.

1) $\frac{9}{37}$

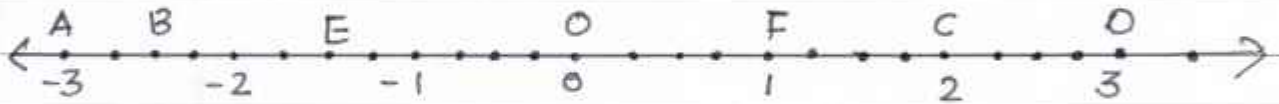
4) $-\frac{103}{5}$

2) $\frac{18}{42}$

5) $-\frac{11}{13}$

3) $\frac{9}{14}$

Q 3. Observe the number line indicated the (3M)
number line and answer the questions



- 1) Which number is indicated by point B?
- 2) Which point indicates the number $1\frac{3}{4}$?
- 3) State whether the statement, 'the point D denotes the number $\frac{5}{2}$ ', is true or false.

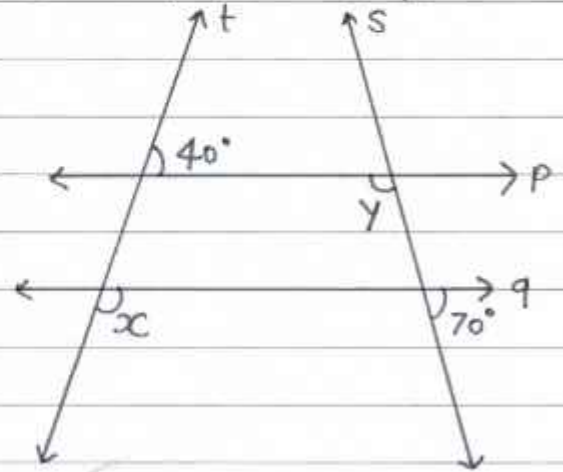
Q 4. Answer the following questions. (6M)

- 1) Draw a line l . Take a point A outside the line. Through point A draw a line parallel to line l .
- 2) Draw a line l . Take a point T outside the line, through point T draw a line parallel to line l .
- 3) Draw a line m . Draw a line n which is parallel to line m at a distance of 4 cm from it.

Q. 5. Answer the following question in Brief. (5M)

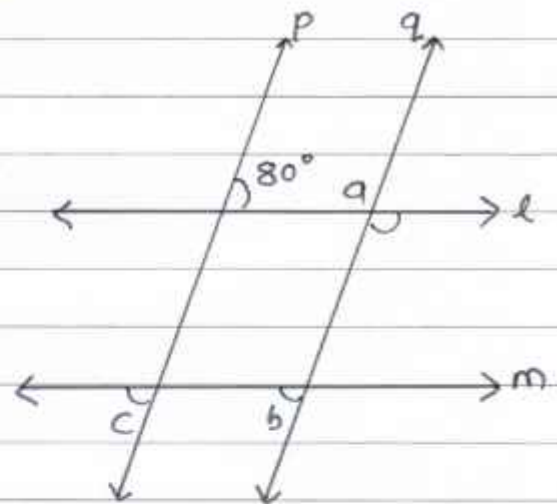
1) In the adjoining figure line $p \parallel$ line q .

Line t and line s are transversals. Find the measure of $\angle X$ and $\angle Y$.
Using the measures of angles given in the figures



2) In the adjoining figure, line $p \parallel$ line q .

line $l \parallel$ line m . Find measures of $\angle a$, $\angle b$ & $\angle c$.
Using the measures of given angles. Justify your answers.



SHEELADEVI COLLEGE
OF EDUCATION {B.ed}

NAME : SHIKHA.S. PARDHI

COURSE : B.ed IInd YEAR

SEMISTER : THIRD SEMISTER

PRACTICAL : INTERNSHIP II

COMMUNITY INTERACTIONS Including
P.T.M & VISIT to SPECIAL COMMUNITY
Centres [ORPHANAGE VISIT]

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COMMUNITY

INTERACTION

PROGRAMME

Meaning :-

Community service is a non-paying job performed by one person of the community.

Community service is a distinct from volunteering. Service it is not always performed on a voluntary basis personal benefits may be realized, but it may be performed for a variety of reasons including citizenship requirement. A substitution of criminal justice sanctions, requirement of a school or class and requests for receipts of certain benefits.

A group of people living in the same place and having common interests, religion etc.

A community is a small or large social unit who has something in common, such as norms, religion, values or identity.

Characteristics of Community

Work :

A key factor that offers insight into community ability to manage resources is its social cohesion and willingness to set and strive for common goals.

These characteristics include the history of the community and its relations with others. It present social structure, its cultural, values and the way it governs itself.

- Manage individuals strengths.
- Work as a team.
- Practice stewardship
- Balance the needs of our leadership group.

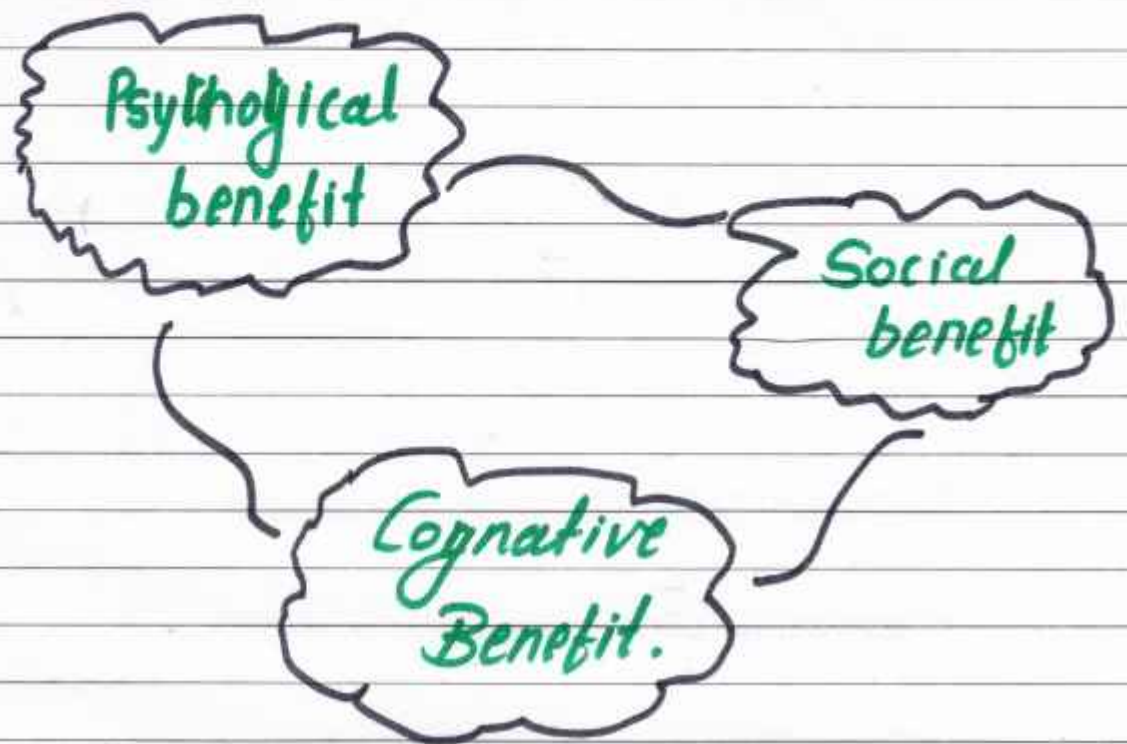
- Be accountable to the community.
- Think forward.
- Recruits and mentor new leaders.
- Walk beside Don't lead from above.

Importance of Community

Work :-

Engaging in community service provides students with the opportunity to become active members of their community and has a lasting positive impact on society at large.

Community and has a lasting volume tourism enables students to acquire new skills and knowledge as well as provide a service to those who need it most. There are some of the common benefits of participating in a common service program.



Psychological Benefits :-

✓ Volunteering increases overall life satisfaction and helps us feel good about ourselves because all are helping others. It can also help to helping others. It can also help to decrease stress and ease depression.

Social benefits :-

Volunteering engages students with the community and offers special benefits with the populations being and responsibility.

Cognitive Benefits :-

Volunteering helps students enhance their personal knowledge grow from new experiences and develop better interpersonal communication skills.

Scope of Community Work

Community development leads members to become more responsible, develop healthy lifestyles, improve, reduce poverty and economic opportunities. Community work takes place in particular geographical areas focusing on identifying their needs.

* Need of Community Work :-

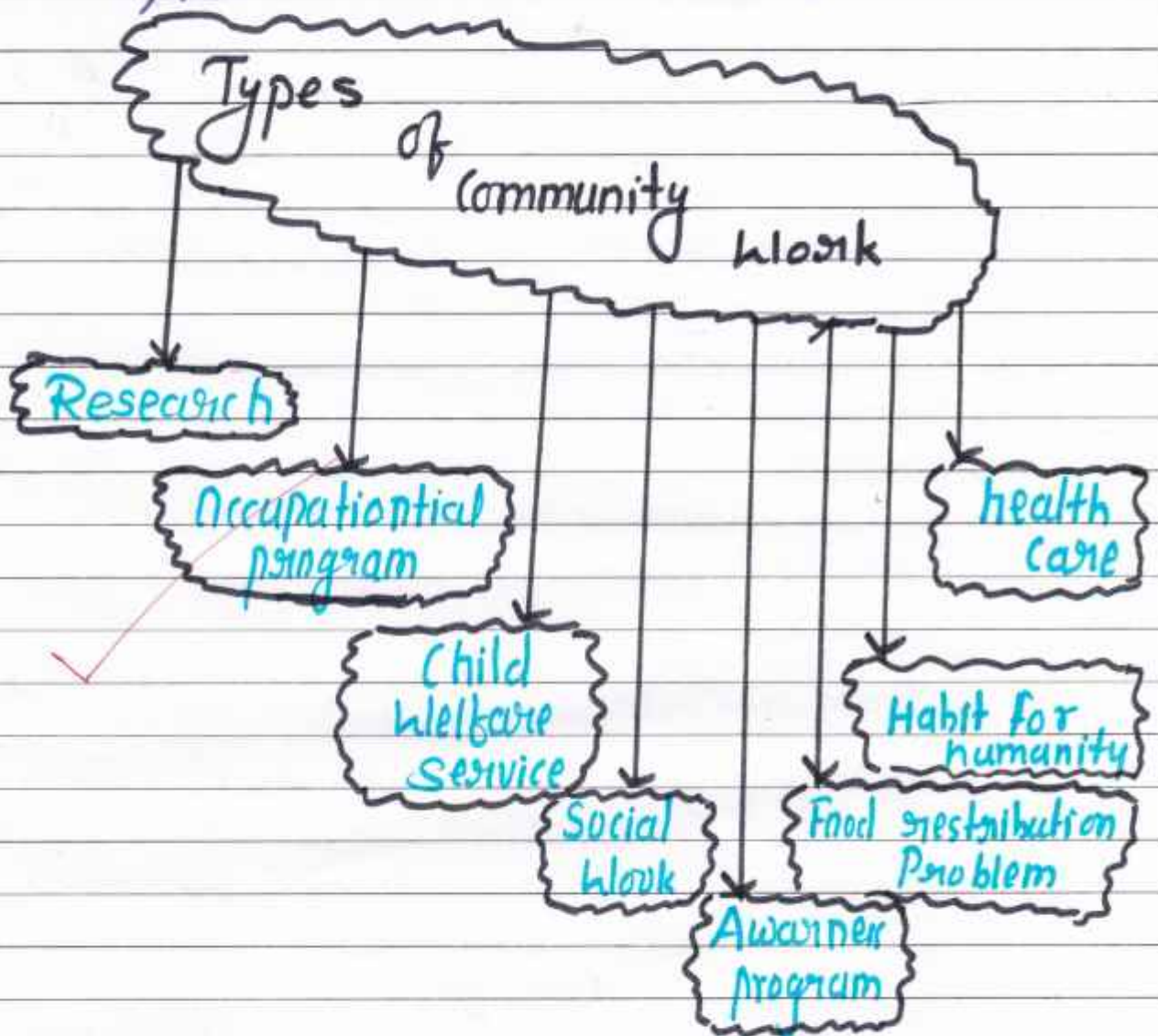
Engaging in community service provides students with the opportunity to become active members of their community and has a lasting positive impact on society at large. Community service or volunteering enables students to acquire life skills and knowledge as well as provide a service to those who need it most.

Why should we do community work?

- It's proven to make us happier. Community service provides physical and mental rewards.
- Volunteers gain professional experiences, volunteerism, discipline, resilience, talent.
That may improve their outlook.

→ It brings people together.

→ It provides more flexibility and option:



Research :-

Community based participating approach to research is a partnership approach to research that equality involves. For example, community members, organizational representatives and researchers in all aspects of the research process and in which all partners contribute expertise and share decision making ownership.

Occupational program :

Occupational therapists propose to promote health and well being by working with people and communities to modify, take on environment to provide people with opportunity to engage in the occupations or daily activities that they want.

Child welfare service :-

Social work is a diverse helping profession full of individuals seeking to enhance neglect those child welfare social

workers devote themselves to protecting children from harm.

Health Care :-

The WHO defines community health as environment, social and economic resources to sustain emotional and physical well beings among people in ways that advance their reproduction and satisfy their needs in their unique environment.

Awareness Program :-

The community awareness program is a free interactive program designed to provide (with) citizens with the basic prevent terrorism and criminal activity with-in our communities.

Social Work :-

Community practice also known as. nation practise is branch of social work in the united states of America that focuses on larger social system of social change and is tied to the historical roots of united states social work.

Development Disabilities :

Cause individual living with them many difficulties in certain areas of the life especially in language, mobility, learning, self help and independent living.

Food distribution program :-

Here people are able to distribute food items to poor peoples and needy peoples.

Habits for humanity :-

The habits for humanity for community interaction is a non-profit Christian organization that brings families, volunteers, resources, together to build simple, decent and a livable housing.

Aims and Objective

- To aware the people of various problem in the community.
- Organise the people for promotion & progress of community.
- To develop democratic leadership among people through the participation in community programme.
- Program are made for motivation of community for the betterment of humanity.
- The development is necessary in all places.

- gives equality to all people. It gives equal chances and opportunities.
- Different problems faced by community people may be solved due to the start of such programs.
- Social justice as another objective of community development. It provides justice.

End

A green line-art illustration of a flower with five petals and a central circle, with a wavy stem extending downwards.

PARENTS

TEACHERS

MEETING

A green line-art illustration of a flower with five petals and a central circle, with a wavy stem extending upwards.

INTRODUCTION

Parent teaching meeting is a prominent and notable feature of the school interaction of parents with teachers with regards to the progress shown by their wards and finding workable solutions to the problems coming in the way of development of their wards.

Parent teachers meeting conducted by each and every school. It is compulsory for all parents to attend the parents teachers meeting in case of an extreme situation where the parent can not attend written intimation should be provided.

Such meeting however will be arranged or appointment made through the office of the principal and not in their classroom directly the motive of interaction is to understand all activity in the school.

Parents teacher meeting is a school meeting or conferences held between the parents and teachers of students to discuss a child's progress in school and find solutions to academic or behavioural problems.

This is a meeting between parents and the teacher to take about a given child's school learning and progress. These may be called with another names as parent teacher interaction, parent teacher conference or the learning conferences.

Parent teacher conference supplement the information conveyed by report cards by focussing on student's specific strength and weakness in individual subjects and generalised the level of intercurricular skills & competence.

Most conference take place without the presence of the students whose progress is being discussed although there is evidence that their inclusion.

Why It IS Important Parents-Teacher Meeting :-

- Parent-teacher meeting is one of the important activity of any school P.T.M to great opportunity for both the teacher and parents to work for the betterment of the child.
- Generally P.T.M is held for valuation of an academic and non-academic performance of the student to help to know and work for the child performance.
- Parent teacher meeting provides a mutual platform to work for betterment of the school, teaching and physical and intellectual growth of a child.
- Parent teacher meeting helps both parents and teachers to involve and discuss and solve any particular issues they are feeling

Most Frequent Reasons Why Parent teacher meeting are Important :-

1. It leads to greater academic achievement in the classroom.
2. It makes the school environment safer and lead to betterment.
3. It can present behavioural and academic problems.
4. It can encourage students to stay on school learn their weakness.
5. It can help to make a worse situations better.
6. ✓ It can ease a teachers work book / workload.
7. It can work for positive modification of the students performance.
8. It also able to help helps for student emotions to be enhance in a positive ways.

Benefits of Parent-Teacher Meeting :-

- ① It provides context for the child's learning child care is very crucial in early childhood and has a lot to do with the teacher-student relationship.
- ② It helps to build a positive relationship this helps your child understand that you are the one in charge but that they can know full about their learning environment.
- ③ Parents-teacher meeting are a step to opening up it's conversations ideally an open and teacher and honest dialogue between parents and teacher can often change for the better in your child's life.

④

Parent Teacher meeting brings you into their lives P.T.M allow you to develop a strong bond of trust.

⑤

We want all the students to those but it takes the active participation of both parents and teachers for that to happen.

We want all the students to those but it takes the active participation of both the parents and students for that to happen.

Types of Parents-Teacher meeting

Parent teacher meeting conferences exist in a variety of different forms depending on a country, school district and individual school.

The subtypes are characterized by the following attributes.

Mode :- Face to face

Parent teacher conference can take the form of face to face meetings in which parents and teachers meet in person or electronic meeting that are conducted over the phone or via video conferencing system like microsoft teams, zoom or google meet.

Face to face or full meetings after personal contact but it requires that parents and teachers meet at physically the same place during the meeting.

These conference are usually between face them fifteen minutes with parent. Teacher conference can participate in the meeting from home or while working or traveling.

In face to face school does not need to room for the meetings and there more flexibility in finding suitable time.

2) Participants : Parent Teacher Conference.

One to one meeting between a parent and teacher this types is used when different subjects are taught by different teachers.

Questions might ask by Parents :-

- Does my child participate well in class?
- Is my child progressing as expected?
- What do they do well?
- What do they need help with?
- Does my child seem settled at school?
- What can I do to help?
- How do they get along with others?
- Are there any areas of concern?
- Which subjects are the most challenging?
- How is child's academic performance?

Report Writing :-

A parent-teacher meeting for classes I to XII was held on 25 November, 2023 to discuss the performance of students with their parents. Parents were given feedback on their works performances in personal term. Exam 2023.

It was a great interaction between the teacher and the parents for they discussed both the strength and the areas of improvement. The progress report shown to the parents and their suggestions were noted.

Any sign of a child having to make progress regardless of where they are in the lower, middle or higher range is questioned and addressed.

In P. T. M meeting is conducted to show the report of mid-term examination was shown to them.

∴ Conclusion :-

Parents are the most important influence in a child's life. Joy on sight about a child can support a success in both the home and school environment.

✓ All the parents experienced the atmosphere of the school good and the difference of students is a progress. All the parents experienced disparity as the school child is happy and feels secure. Satisfaction is on solid base. The teachers and parents consider meeting important.

Effective parent staff partnership benefit parents staff and most importantly partnership are good for our children.

Thank you for your participation and commitment to personal development.

Reference :-

- ① ^{int} htl. int. (World wide web)
- ② google.
- ③ chrome.

End

Orphanage

Visit

End

REPORT

VENUE :- visit to orphanage centre

"Shree Srachhand Anathalaya"

Address :- Plot No. 123, Abheyandan
Nagar Road opp. Punjab
National Bank, Srachhandpeth
Nagpur, Maharashtra, 410022.

Date :- 16 / 12 / 23
(Saturday)

✓ We have arranged a tour to orphanage home centre in Nagpur & day scheduled is 16th December 2023. In morning all of colleagues met at Anathalaya.

We meet with the all children staying there; well noticed some were good condition to work. Some little newborn babies are there. Also in good evening of staffs of Anathalaya.

REPORT

VENUE



Address

Date

Gradhand Anathalaya is home for orphan children. 20 student volunteers from B.ed 2nd year accompanied by faculty members viz. Leena Sawade, Mrs. Sujath & Mrs. Sulekha man visited the place.

Gradhand Anathalaya is an independent orphan home run by Mrs. Geetanjali Bhaty. At present 50 to 60 orphan children between 3 to 18 years of age and also new born babies living in Gradhand Anathalaya.

✓ We started the orphanage at around 10.00 am. The children of Gradhand Anathalaya were very pleasantly excited to receive the members. The students greeted us with great enthusiasm. We also met the caretaker. While interacting with the care taker, we got to know the history of the orphanage how it was established.

Standard English is a
for children, the
from 6 to 12 years
of primary school
and secondary
school.



The standard English is
the children of
standard English is
primary school the
middle school the
with great enthusiasm
and the children
interacting with the
the day of the
language is a

We donated some snacks to the children. The students interacted with the children. They also engage them with various games and hence activities. All the children looked so excited and joyful.

The orphanage children are very talented they have made many types of hand-crafts are really amazing.

In the orphanage all children have a bank account while it is only for deposit after they become and they withdraw it personally.

It was indeed very satisfying experience for students as they could bring smiles on children faces.

They realised that one contribution and understanding by her social responsibilities.

Conclusion :-

The visit made me reflect on the importance of social responsibility and the impact that small acts of kindness can have on the lives of others. While we may not be able to change the world overnight, we can make a difference in the lives of those around us.

In conclusion my visit to a orphanage was a humbling and eye-opening experience. It reminded me of the importance of social responsibility.

Inteernal's copy

SHEELA MULTIPURPOSE SOCIETY

SHEELADEVI COLLEGE OF EDUCATION



DATTAWADI (WADI), NAGPUR

2023 - 2024

**FINAL LESSON PLANNING
NOTE BOOK**

अंतिम प्रात्यक्षिक पाठ पुस्तिका

Name Ketaki sheikant ohale

नाम

Number _____

क्रमांक

Subject 1) Physics

विषय

2) _____

पाठ्यक्रम
S.No. 01

विषय
Subject Physics

शाळा
School V.L. Convent

विषयांश
Topic Work done and

पाठ साहित्य
Material Aids Chalk, Blackboard,
duster, chart showing
formula of work

पूर्व ज्ञान
Previous Knowledge Force, Displacement

पाठ्याच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among the students.*] To enable students to know about the concept of work.*] To enable students to understand practical applications of work.
	<u>Statement of Aim</u> - Today we are going to	

दिनांक

03/01/24

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions

Q.1] If I am reading a book, is work done here?

Q.2] If a boy is pulling a toy car with a string, is work done here?

Q.3] Is there a difference in meaning of work done in our day to day life and in physics?

Students give satisfactory answers to the asked questions.

Ans] No, the work is not done while reading a book.

Ans] Yes, the work is done by the boy on the toy car by pulling the string.

Ans] Yes, there is a difference in these two terms of work, because in day to day life efforts are applied physically we say that work is done.

to learn about work done and its Unit

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
<p style="text-align: center; font-size: 2em; letter-spacing: 0.5em;">P R E S E N T A T I O N</p>	<p><u>Work Done</u>-</p> <p>Work is said to be done when a force displaces a body through certain distance in the direction of force.</p>	<p><u>1] Knowledge</u>-</p> <p>students are able to know about the concept of work done</p>
	<p><u>Conditions</u>-</p> <ol style="list-style-type: none"> 1] force 2] displacement <p><u>Example</u>-</p> <p>A bullock is pulling a cart, the cart moves. Here, bullock applies a force and the cart displaces.</p> <p>Hence, work is said to be done.</p>	<p><u>2] Understanding</u>-</p> <p>students are able to understand the meaning of work done</p> <p><u>3] Application</u>-</p> <p>students are able to apply the concept of work done in real life examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

Students give appropriate answers to the asked questions

Q.1] What is work done?

Ans] When a force causes displacement in the same or opposite direction of applied force, we say that work is done.

Q.2] Say, if the work is done or not in the following cases.

Ans]

a) Suma is swimming in a pond

→ Yes, the work is done

b) An engine is

→ Yes, the work is done

Formula for Work

$$W = (F \cos \theta) d$$

Work
Nm/J

Force
N

Displacement
d



$\cos 0^\circ = 1$ $\cos 90^\circ = 0$ $\cos 180^\circ = -1$
--

work is not done

work is not done

चरण (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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PRESENTATION

Formula for Work Done

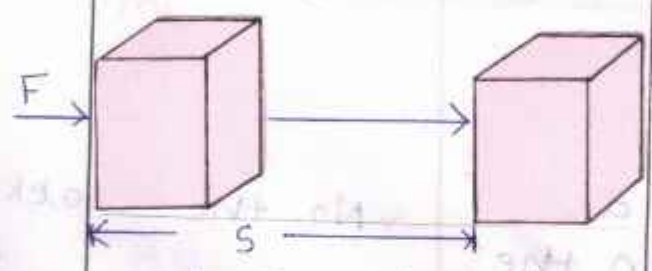
Done-

Let a constant force 'F' is acting on an object displaces the object through distance 'd', in the direction of applied force. Then,

Work done
 = Force x displacement

$$W = F \times d$$

Unit of Work Done-



If $F = 1\text{ N}$ and $d = 1\text{ m}$
 then $W = 1\text{ Nm}$ or 1 Joule

1] Knowledge-

students are able to know about the formula and units of work done.

2] Understanding

students are able to understand the calculation of work done.

3] Application-

students are able to apply the concept of work done in real life situations.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

students give appropriate answers to the asked questions

Q.1] If a force of 5N is acting on an object displaces it through 2m in the direction of force. What is the work done?

Ans] Work done can be calculated by the formula

$$W = F \times d$$

Here, $w = 5 \times 2 = 10 \text{ Nm/J}$

Work done is 10 J

Q.2] What is work done if direction of force is perpendicular to the direction of displacement?

Ans] If the direction of force is perpendicular to the direction of displacement, then the work done will be zero.

Q.3] What are the units of work done?

Ans] The units of work done are Nm or Joule.

Q.4] Define 1 Joule of work.

Ans] When a force of 1N displaces the object through 1m, then the work done is 1 Joule.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>1] <u>Work</u> - Two conditions are required for work to be done</p> <p>a] Force b] Displacement</p>	<p>*] To revise the topic taught in the class</p>
	<p>2] <u>Expression of Work done</u> $W = F \times d$</p>	<p>*] To evaluate the knowledge gained by students.</p>
	<p>3] <u>Unit of work done</u> Nm or Joule</p>	<p>*] To test the knowledge of students regarding work and its examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] What is the expression for work done?

Ans] Work done is given by the expression

$$W = F \times d$$

where, W is work done

F is force

d is displacement.

Q.2] What is the work done in following cases?

Ans]

a] Direction of force and displacement are same.


→ If force and displacement are in same direction, the work done is positive.

b] Direction of force and displacement are opposite.

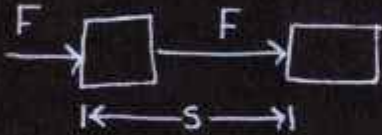
→ If force and displacement are in opposite direction, the work done is negative.

c] Direction of force and displacement are perpendicular.

→ If force and displacement are perpendicular the work done is zero.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To understand the taught concept thoroughly *] To utilize the free time *] To create interest in the topic taught.

फलक सार
Black Board Summary

<p><u>Day</u> - Wednesday <u>Class</u> - IX</p> <p><u>Date</u> - 03/01/24 <u>sub</u> - physics</p> <p style="text-align: center;"><u>Topic</u> - Work done</p>	<p style="text-align: right;">On Roll -</p> <p style="text-align: right;">Present -</p> <p style="text-align: right;">Absent -</p>
<p>Work done = $F \times d$ = Force \times displacement</p> <div style="text-align: center;">  </div>	<p>Unit of work done - Nm or Joule (J)</p> <p>$W = F \times d$ = $1\text{ N} \times 1\text{ m}$ = 1 Nm or 1 Joule</p>
<p><u>Homework</u> - Q] A force of 7 N acts on an object. The displacement is 8 m in the direction of force. What is the work done?</p>	

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on the blackboard

Students write it down and solve by themselves in their notebooks.

Homework-

1] A force of 7 N acts on an object. The displacement is 8 m in the direction of force. What is the work done?

अभिप्राय (Remarks)

Class control good.
Teaching was good.


पर्यवेक्षकाची सही
(Sign. of Supervisor)

Internal's copy

SHEELA MULTIPURPOSE SOCIETY

SHEELADEVI COLLEGE OF EDUCATION



DATTAWADI (WADI), NAGPUR

2023 - 2024

**FINAL LESSON PLANNING
NOTE BOOK**

अंतिम प्रात्यक्षिक पाठ पुस्तिका

Name Ketaki Sheikant Ohale

नाव

Number _____

क्रमांक

Subject 1) Mathematics

विषय

2) _____

पाठांक
S.No. 01

विषय
Subject Mathematics

शाळा
School V.L. Convent, Dattawade

विषयांश
Topic Volume of Solids - Cu

पाठ साहित्य
Material Aids Chalk, Blackboard,
duster, Models of
3D solids

पूर्व ज्ञान
Previous Knowledge Basic 3D shapes, C

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	volumes of 1] cube 2] cuboid 3] cone 4] sphere	<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among students.*] To enable students to understand the concept of volume*] To enable students to calculate volume of solids
<u>Statement of Aim-</u> Today, we are going to		

दिनांक 02/01/24
Date

स - cube, cuboid, cone, sphere

वर्ग IXth
Class

स, Capacity.

तासिका अवधी 35 min
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions.
Q.1] If you want to buy a juice bottle, which bottle will you buy, bigger or smaller?	Ans] We will buy a bigger bottle of juice because it contains more juice.
Q.2] How can you say that bigger bottle has more juice?	Ans] We will prefer bigger bottle of juice because it has more volume.
Q.3] What is volume in your words?	Ans] Volume is the amount of space occupied by any three dimensional solid.
to learn about volumes of solids	

पाठाच्या पायऱ्या
(Steps of Lesson)

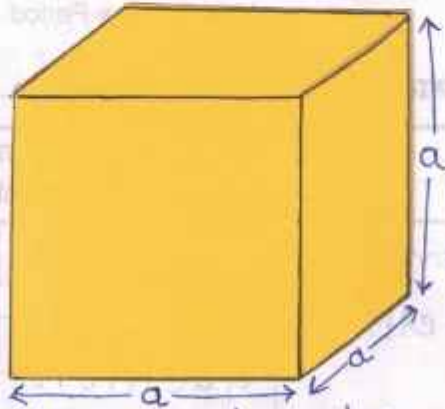
अध्यापन मुद्दे
(Teaching Points)

उद्दिष्टे व स्पष्टीकरणे
(Objectives with Specification)

P
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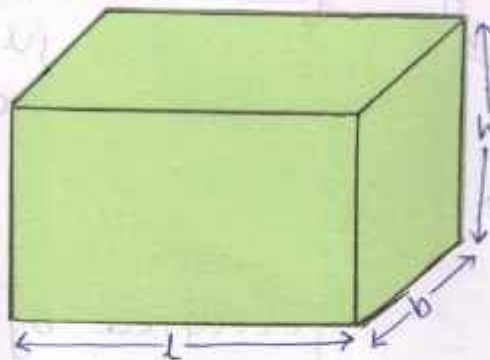
Volumes of

1] Cube -



Volume of cube
= side \times side \times side
= side³
= a³ cu. units/unit³

2] Cuboid -



Volume of cuboid
= length \times breadth
 \times height
= l \times b \times h
= lbh cu. units/unit³

1] Knowledge -

students are able to know about volumes of cube and cuboid.

2] Understanding -

students are able to understand how formulas of cube and cuboid are calculated.

3] Application -

students are able to apply formulas of volume to solve real life examples.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Q.1] Find the volume of cube whose side is 10 cm.

Q.2] Find the volume of a cuboid whose length is 5 cm, height is 3 cm and breadth is 2 cm.

Q.3] How do you define volume of cuboid?

Students give appropriate answers to the asked questions.

Ans] Volume of a cube is side^3 . So, volume of the given cube is $= 10 \times 10 \times 10 = 1000 \text{ cm}^3$.

Ans] Volume of a cuboid is $\text{length} \times \text{breadth} \times \text{height}$. So, the volume of cuboid is $= 5 \times 2 \times 3 = 30 \text{ cu. cm}$ or cm^3 .

Ans] Volume of a cuboid is the amount of space occupied by the walls of cuboid in a 3D space.

पाठाच्या पायऱ्या
(Steps of Lesson)

अध्यापन मुद्दे
(Teaching Points)

उद्दिष्टे व स्पष्टीकरणे
(Objectives with Specification)

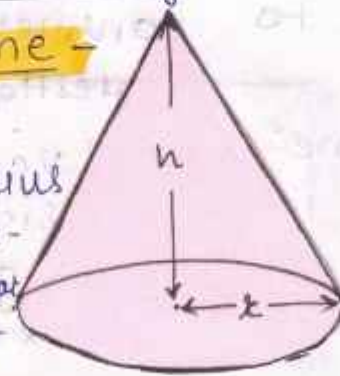
P
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Volumes of

3] Cone -

For

r - radius
 h - per-
pendicular
height



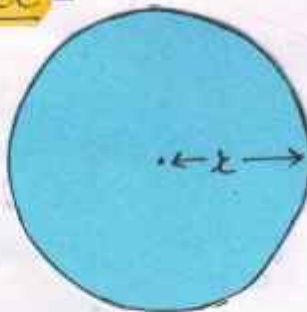
Volume of cone

$$= \frac{1}{3} \pi r^2 h \text{ cu. units / unit}^3$$

4] Sphere -

For

r - radius



Volume of sphere

$$= \frac{4}{3} \pi r^3 \text{ cu. units / unit}^3$$

1] Knowledge -

students are able to know about volumes of cone and sphere

2] Understanding -

students are able to understand how formulas of volumes are used for calculation.

3] Application -

students are able to apply formulas of volumes in real life.

अध्ययनानुभव (Learning Experience)

(n)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

students give appropriate answers to the asked questions.

Q.1] Find the volume of a sphere of radius 7 cm.


Ans] Volume of sphere is $\frac{4}{3} \pi r^3$. So, volume of given sphere is $\frac{4}{3} \times \frac{22}{7} \times 7 \times 7 \times 7$
 $= 1437.33 \text{ cm}^3$ or cu-cm

Q.2] What is the volume of a hemisphere?

Ans] A volume of hemisphere is half of the volume of a sphere. Which is equal to $\frac{2}{3} \pi r^3$.

Q.3] Find the volume of a cone whose radius is 6 cm and height is 7 cm.

Ans] Volume of the given cone is $\frac{1}{3} \pi r^2 h$. So, by calculating,
 $\frac{1}{3} \times \frac{22}{7} \times 6 \times 6 \times 7 = 264 \text{ cm}^3$
 or
 cu-cm .
 So, the volume of given cone is 264 cm^3 or cu-cm .

पाठ्याच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T V E L A T I O N	1] Volume of cube $= \text{side} \times \text{side} \times \text{side}$	*] To revise the topic taught in the class.
	2] Volume of cuboid $= \text{length} \times \text{breadth} \times \text{height}$	
	3] Volume of cone $= \frac{1}{3} \pi r^2 h$	*] To evaluate the knowledge gained by students
	4] Volume of sphere $= \frac{4}{3} \pi r^3$	
		*] To test the concept understood by students regarding volumes of 3D shapes.

अध्ययनानुभव (Learning Experience)

on)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] If two cubes of side 6 cm are joined face to face, then find the volume of the resulting cuboid.

Ans] If we join two cubes the length becomes $6+6=12$ and height and breadth remains same. So, volume of the resulting cuboid is $12 \times 6 \times 6 = 432 \text{ cm}^3$ or cu. cm .

Q.2] Find the ratio of volumes of a sphere and a hemisphere.

Ans] Volume of sphere = $\frac{4}{3}\pi r^3$
 Volume of hemisphere = $\frac{2}{3}\pi r^3$
 \therefore Ratio = $\frac{\frac{4}{3}\pi r^3}{\frac{2}{3}\pi r^3} = \frac{4}{2} = \frac{2}{1}$
 Required ratio is 2:1

Q.3] Find the volume of a cone whose radius is 3.5 cm and height is 12 cm.

Ans] Volume of cone is $\frac{1}{3}\pi r^2 h$. So, volume of the given cone is $\frac{1}{3} \times \frac{22}{7} \times 3.5 \times 3.5 \times 12 = 154 \text{ cm}^3$ or cu. cm

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To create the interest in the topic taught. *] To utilize the free time. *] To understand the taught concept properly.

फलक सार
Black Board Summary

<u>Date</u> - Tuesday	<u>Class</u> - IX	<u>on Roll</u> -
<u>Day</u> - 21/1/24	<u>Sub</u> - Mathematics	<u>Present</u> -
	<u>Topic</u> - Volume of Solids	<u>Absent</u> -
1] Volume of cube = side \times side \times side	3] Volume of cone = $\frac{1}{3} \pi r^2 h$	
2] Volume of cuboid = l \times b \times h	4] Volume of sphere = $\frac{4}{3} \pi r^3$	
<u>Homework</u> - 1] Find volume of a cone whose h = 7cm and r = 3cm.		
2] Find volume of a sphere whose r = 7cm.		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

The teacher gives homework written on blackboard.

Homework-

1] Find volume of a cone whose $h = 7\text{cm}$ and $r = 3\text{cm}$.

2] Find volume of a sphere whose $r = 7\text{cm}$.



विद्यार्थी कृती (Student Activity)

students write it down and solve in their notebooks.



अभिप्राय (Remarks)


पर्यवेक्षकाची सही

(Sign. of Supervisor)



Name - Ketaki . Sheikant Ohale

College - Sheeladevi college of Education
Wadi , Nagpur

Class - B.Ed IInd year [Sem-III]

Year - 2023 - 24

EPC 1 - Nai Talim and Community
Engagement Project - 1

Name of Practical

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त्रिभुज का क्षेत्रफल
Perimeter of Triangle

Introduction

Adult literacy is the ability of adults to use a language i.e. to read, write, listen and speak. Adult literacy includes basic literacy, desirable knowledge pertaining to civic needs, personal hygiene and adopting political and occupational skills. According to the United States, Basic literacy is the ability to read 40 words per minute, write 20 words per minute and do 2-digit arithmetic.

India has over 35% of the world's total illiterate population. India also has the largest number of illiterate people in the world. India faces major challenges, in terms of both the high number of illiterates and widespread disparities that exists between urban and rural areas. These pose as hindrance to the national efforts to achieve education for all and to eradicate poverty. About 80 percent of the population lives in villages that have the largest concentration of illiterate people. These areas also have maximum gender differentials. Some areas have specific differentials in attaining literacy rates, girls by and large suffered in their educational pursuits mainly due to ignorance on the parts of parents, poverty geographical hazardous like North Eastern South states of

India and other hilly areas. Special efforts need to be provided for adults who have been deprived of early education facilities. Provision of funds will have to be made differently as contrasted from other areas.

Status of Adult Literacy

The reason why India's Adult Literacy has suffered is the fact that its efforts towards this cause came very late. A lot of effort was put into expanding primary education as a result adult literacy was neglected in the first three decades of its independence. It was during 1977, with the change in the government in India, that a nationwide adult education programme was launched for socio-economic development. This created a demand for adult literacy at the national level.

At that time all the adult education programmes were voluntary in basis and most of the adult education programmes were limited in scope and reach. Adult education had been planned as a community engagement programme through the development of the individual was not directly associated with the development of basic literacy rather it was designed for societal development. It was only in the

last three decades that adult literacy was associated with socio-economic development and for self-reliance of the individual.

During 1980, a nationwide centre-based programme was launched. But it lacked in people's participation. The overall literacy rate in India was low. A lot of resources were needed in terms of instructors and trainers in adult education. The funds worked for basic literacy but were not successful to a large extent. This programme brought the adult literacy to national agenda. The government in power showed the political will to do so. Though India's literacy rate has improved significantly from 44% in 1981 to 65% in 2001, a lot still remains to be done.

Adult literacy programs haven't had a consistent support and these have fallen off the government's priority list. Government funded adult education has remained neglected most of the time. The states continue to ignore its own role and responsibilities. There is an tendency for dependence on private participation on this front.



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Long 78.959443°
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Name of Practical

Aims

Aims of adult Education

- 1] To help the learner (individual / organization / society) achieve a degree of success, fulfillment meaning
- 2] To help the learner understand their capabilities, limitations and relationships.
- 3] To help the learner recognize and understand the need for lifelong learning
- 4] To provide ~~conditions~~ and opportunities for advancement in the maturation process: spiritually, culturally, physically, politically and vocationally.
- 5] To provide education for survival in literacy, vocational skills and health measures.

Kalbunde

Name of Practical

Objectives

Objectives of Adult Education-

The important objectives of adult education are-

- 1] To make adults aware of the civic responsibilities to one another and to the community, the nation.
- 2] To make them economically more efficient.
- 3] To develop a sense of responsibility and a knowledge of how to proceed in making the personal adjustments to home life and family relationships.
- 4] To promote health and physical fitness.
- 5] To supplement and broaden educational background.
- 6] To provide the means for encouraging cultural development and appreciation of arts.
- 7] To provide for the development of educational interests through opportunity of self expression

Teacher's Signature.....

REVISION
DATE

Objectives

Objectives of Virtual Education



To supplement and broaden educational background.

To provide the means for encouraging cultural development and appreciation of art.

To provide for the development of environmental interest through opportunities of self-expression.

Factors

Factors contributing to Adult literacy -

1] Poverty -

A major contributor to widespread adult literacy is lack of money.

2] Gender Issues -

In a country where the sex ratio favours females, it automatically translates into more number of illiterates.

3] Cultural Issues -

Culture and tradition do not favour education as much as they do to traditional forms of occupational skills.

4] Population -

To be counted among the top most populated countries is indeed a contributing factor in literacy.

5] Lack of Educational Resources -

Rural areas and areas with difficult terrain do not have schools or education sources.

6] Bureaucratic Role-

Through various literacy campaigns are democratic in nature yet they are bureaucratic in implementation that lead to their failure. Some of these dependant upon the district's collector's goodwill in taking the campaign forward.

7] Lack of Mass Participation -

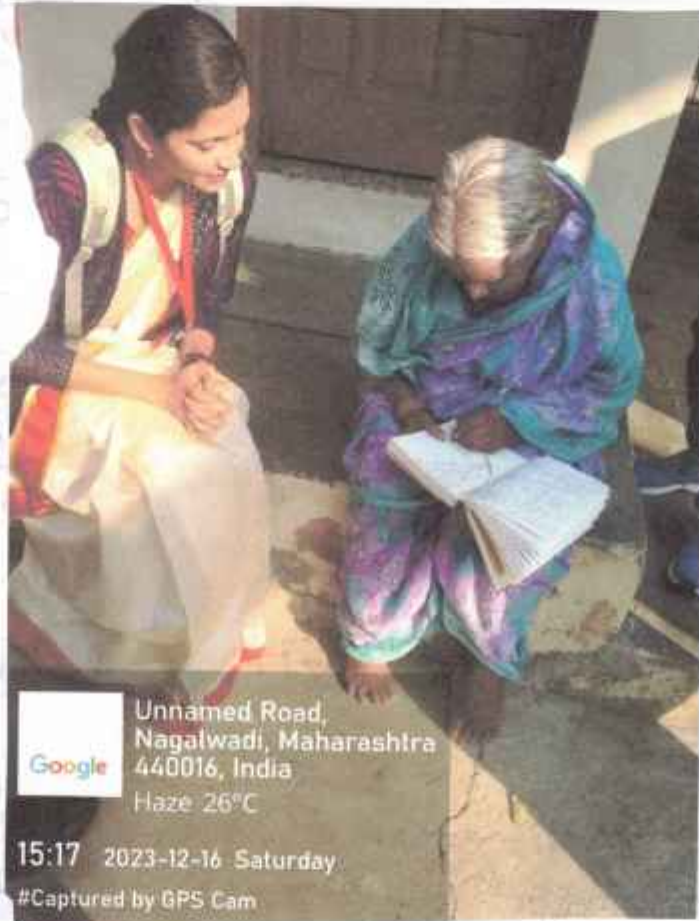
Literacy campaigns are most successful where there is a mass public involvement. Kerala is an example of people's mass movement of participation.

8] Mobilization of Adult Literates and of society.

It is a big challenges for a literacy success. Motivation and enrolling the illiterate in the adult education class is a serious task and regularity in attending the classes has been a major problem. It is an education versus earning scenario where meeting the daily needs win.

9] Lack of Proper Implementation -

Though formulating policies is not a problem but is it the proper implementation of policy and planning that is workisome.



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Nagalwadi, Maharashtra
440016, India
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Importance

Importance of Adult Literacy

- 1] It offers adults a second chance, in case they missed the opportunity or were denied access mainstream formal education.
- 2] Literacy is the key to the development of a country's economy.
- 3] It increases the awareness of healthcare in which child mortality rate can be decreased in India.
- 4] Literacy is the road to employment and self-sufficiency.
- 5] It is also a key to population control.
- 6] Awareness of fundamental rights and duties makes one a responsible citizen.
- 7] Literacy brings progress in the mindsets of those who have a strong belief in superstitions.
- 8] It paves the way for effective communication.

Steps to increase Adult Literacy -

- 1] Learning needs of all adults need to be met through equitable access to appropriate learning and life skill programmes.
- 2] Eliminating gender disparities will by default result in increased literacy.
- 3] Improving all aspects of quality of education.
- 4] The government needs to take remedial steps to prevent illiteracy.
- 5] The bulk of financial commitment should be provided by the central government.
- 6] Easy accessibility to schools especially to schools in rural areas.
- 7] Better remuneration for literacy workers will help the literacy movement to be sustainable system of income generation as well as a system of literacy generation.
- 8] Implementation needs to be more efficient and effective through campaign based approach.

- 9] Stress on proper environment building and active participation of the people.
- 10] Encouragement of joint efforts by government and Non-governmental organizations
- 11] The instructor needs to play even a major role in the teaching and learning of adults.
- 12] Media always plays an important role in motivating people and turning issues into a mass movement.
- 13] Integrating adult education with the education system.
- 14] Rural and urban divide needs to be bridged.
- 15] Better understanding and assimilation of knowledge can be met when the instructional material is developed in regional language along with the international language.
- 16] Including the components of vocational education right from the initial stage of adult literacy needs to be treated as a core for adult learning.
- 17] Government's commitment and community

participation need to be ensured before initiating any programme related to adults.

18] Research work needs to be re-enforced in areas where deficits have been identified like gender differentials, dropouts, consolidation and lapsing into illiteracy of the ways of empowering women and village panchayats to activate the progress of adult literacy.

19] Vocational skill training is a motivating factor for illiterates.

Handbook

Name of Practical

Types

Types of adult education

Types of adult education can be classified as follows-

- 1] Education for vocational, technical and professional competence. Such education may aim at preparing an adult for a first job or for a new job or it may aim at keeping him up to date on new developments in his occupation or profession.
- 2] Education for health, welfare and family living. Such education includes all kind of education in health, family relations, consumer buying, planned parenthood, hygiene, child care.
- 3] Education for civic, political and community competence. Such education includes all kind of education in health, relating to the government, community development, public and international affairs, voting and political participation and so forth.
- 4] Education for self-fulfilment. Such education embraces all kinds of liberal education programs. Education in music, the arts,

Teacher's Signature

Name of Practical

dance, theatre, literature, arts and crafts whether brief or long term. These programs aim primarily at learning for the sake of learning rather than achieving the aims included in the other categories.

5] Remedial education fundamental and literary education. Such education is obviously a prerequisite for all other kinds of adult education and thus, as a category, stands somewhat apart from the other types of adult education.

In reference to the fifth category, adults frequently need to compensate for inadequacies of earlier education.

Handwritten text in Marathi, likely a note or description, partially obscured by the photo overlay.



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Programs

Name of Practical

Programs of Adult Literacy -

The adult education programs have three basic components. These include basic literacy functioning and civic awareness. The programmes of adult literacy within the country are as follows-

1] Social Education Program-

The major thrust of social education program was to make the citizens of the country, particularly the ones who are illiterate and aware of their rights and responsibilities for building a democratic India.

2] Mass program of Functional Literacy (MPFL) -

MPFL was introduced in 1983 with the student and other volunteers. The main objective of this program was to eradicate the literacy and encourage parents to send their children to school.

3] Faemee's Functional Literacy Program (FFLP) -

FFLP is also known as the Kisan

Teacher's Signature

Name of Practical

Sakshakta Yojana. It was launched in 1969. The FFLP aimed at upgrading the human resources to improve agricultural productivity among farmers. The major emphasis of FFLP was to improve the occupational skills among farmers.

4] Functional Literacy for Adult Women (FLAW) -

FLAW was initiated in 1975 to 1976 in the experimental ICDS project areas. The major objective of the scheme was to enable the adult women, who do not possess the basic literacy skill of reading writing and numerals to acquire functional skills.

5] Rural Functional Literacy Project (RFLP) -

RFLP is the flagship program of NAEP. It was initiated by centrally sponsored scheme for rural areas.

6] The total literacy campaign (TLC) -

The major characteristics of this campaign are they are area specific

Name of Practical

time bound, volunteer based, cost effective and outcome oriented. The learners and others are engaged in educational activities on a continuous basis.

7] Sarva Shiksha Abhiyan (SSA) -

The SSA is a historic program towards the goal of universalisation of elementary education (UEE). This program bridges the gender and social category gaps in elementary education.

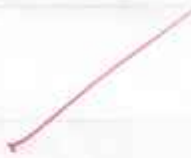
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Advantages

Advantages of Adult Literacy

Adult literacy offers several advantages that positively impact both individuals and society as a whole.

i] Individual Advantages -

→ i] Empowerment -

Literacy equips adults with the ability to understand and engage with written information, empowering them to make informed decisions in various aspects of life.

→ ii] Employment opportunities -

Improved literacy opens doors to better job prospects, enabling adults to higher paying jobs in their careers.

→ iii] Personal development -

Literate adults often experience increased self-confidence, expanded knowledge and improved cognitive abilities, fostering personal growth and development.

→ iv] Health Literacy -

Understanding health information leads to better health outcomes, as literate

Name of Practical

adults can comprehend medical instructions, access healthcare services and make informed health related decisions for themselves and their families.

→ v] Participation in Society-

Literate adults can actively engage in community activities, vote knowledgeably, advocate for their rights and contribute positively to society.

2] Social Advantages-

→ i] Economic Growth-

Increased adult literacy correlates with economic development by fostering a skilled workforce, boosting productivity and driving innovation.

→ ii] Reduced Poverty-

Literacy empowers individuals to break the cycle of poverty by providing access to better job opportunities and improving financial literacy.

→ iii] Improved Quality of Life-

Enhanced literacy levels contribute to overall societal well-being by promoting education, reducing social disparities, and

Name of Practical

enhancing communication and understanding among individuals.

→ iv] Social stability.

Higher literacy rates often correlate with decreased crime rates, improved community cohesion, and greater political stability.

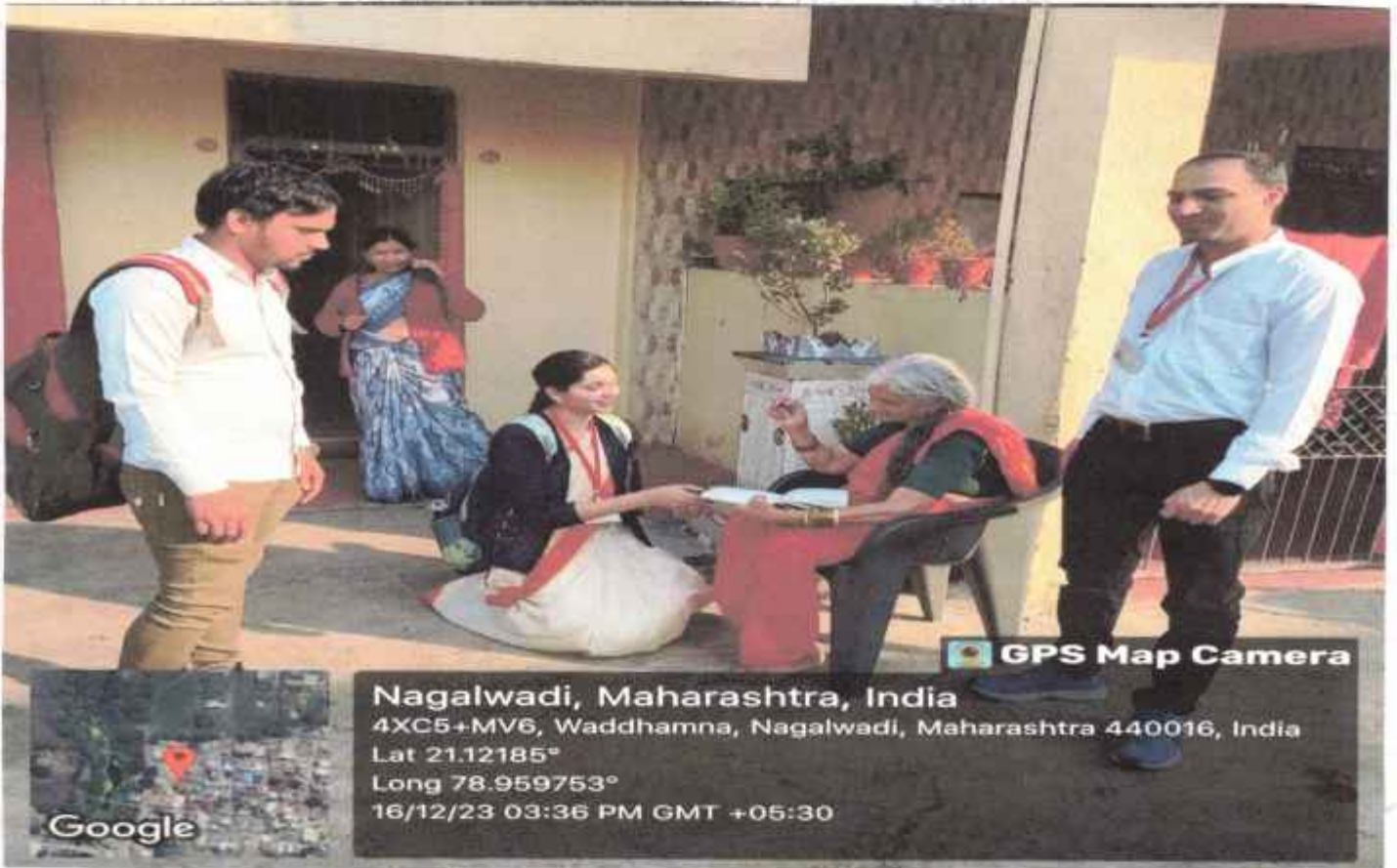
→ v] Continual learning.

Cultivating a culture of lifelong learning through adult literacy programs fosters ongoing personal and professional growth leading to a more knowledgeable and adaptable society.

Investing in adult literacy programs not only transform individual lives but also positively influences the fabric of societies, fostering development, equality and progress.

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कु संखुवाई कनेरे
शांता मैत्रीराम मंदिर नागलवाडी

Report

Report -

"The purpose of education is to create a person with the ability to look at the world for himself to make his own decisions"

- James A. Baldwin

The topic selected by our group is "Promote adult literacy awareness on various government programmes".

The group consists of four members (pupil teachers).

- 1] Ketaki Chale
- 2] Mayank Wilson
- 3] Dinesh Dahiya
- 4] Saurabh Humne

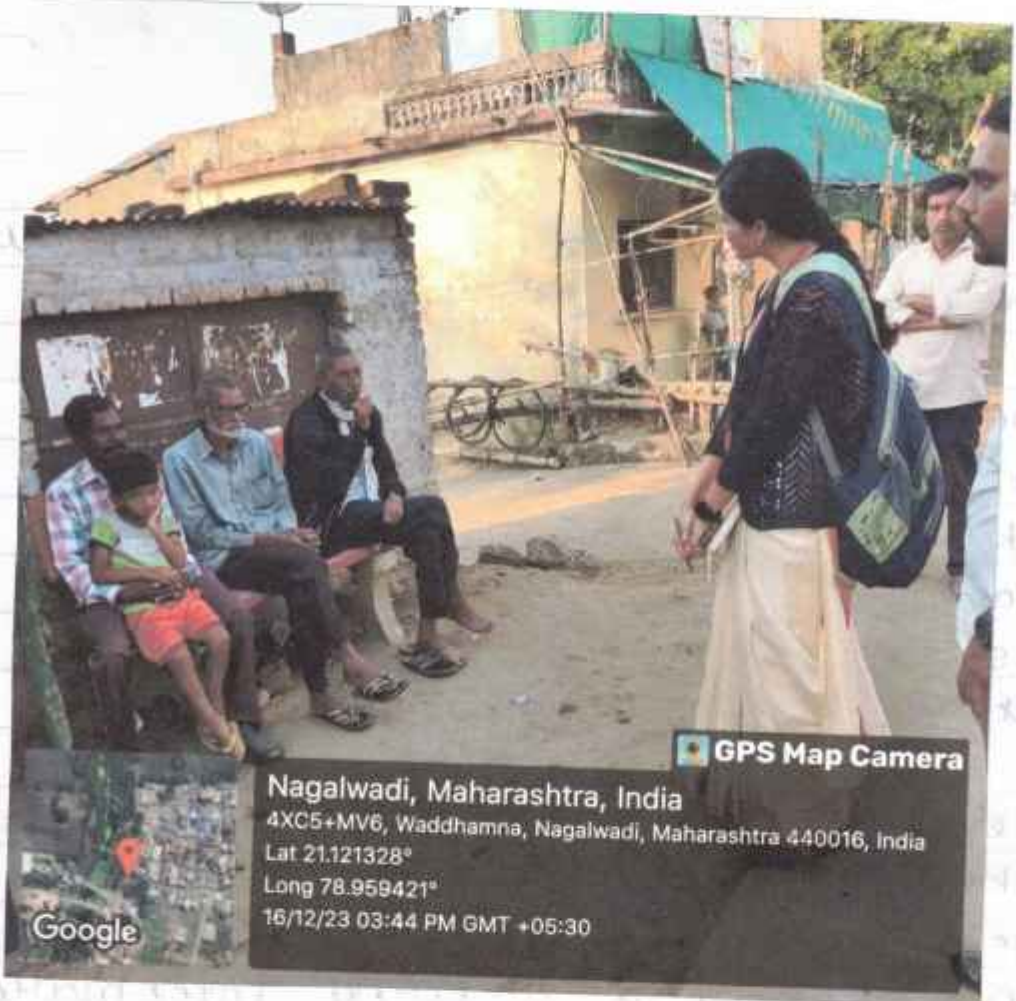
We all started our visit on 16 Dec 2023. The work was distributed among all the group members. We split into various areas of the town and started collecting information. We came across "Primary school" and "Anganwadi" in the town Nagalwadi.

The village has a population of around 220 people with around 300-350 houses. All the houses in the village are pakka and permanent.

REPORT

13/12/23

The purpose of this report is to describe the process of conducting a field study in a rural area of Maharashtra, India. The study was conducted in Nagalwadi, Maharashtra, India, on 16/12/23. The study was conducted in a rural area of Maharashtra, India, on 16/12/23. The study was conducted in a rural area of Maharashtra, India, on 16/12/23.



The purpose of this report is to describe the process of conducting a field study in a rural area of Maharashtra, India. The study was conducted in Nagalwadi, Maharashtra, India, on 16/12/23. The study was conducted in a rural area of Maharashtra, India, on 16/12/23. The study was conducted in a rural area of Maharashtra, India, on 16/12/23.

The village has a population of around 2000 people. The village is located in a rural area of Maharashtra, India. The village is located in a rural area of Maharashtra, India. The village is located in a rural area of Maharashtra, India.

Name of Practical

built houses. In our visit we came to know that there are about 5 women who appeared the exam of 10th standard recently and they are provided with all the study material with like books, slates, crayons. Grampanchayat distributes this materials to women and adults on various occasions.

Also, Mrs. Vandana Raut - The principle of Primary school in village supports the program of adult literacy.

'Nai kisan' program for adult literacy is conducted by the Grampanchayat of Nagalwadi.

Also, about 50% houses in the village had newspapers in their homes for reading. Adults including women take great interest in reading newspapers and keep themselves connected to the outer world by reading news.

There are about 10-12 women saving groups including 10 women each. They work and earn by rolling papads. Also, women work in incense stick factory for their livelihood.

Teacher's Signature

Name of Practical

We roamed in the village talking to men, women and kids. Most of the men and women of the village are literate. Also, the ones who are having reading and writing qualities are trying to self educate themselves with the help of grampanchayat.

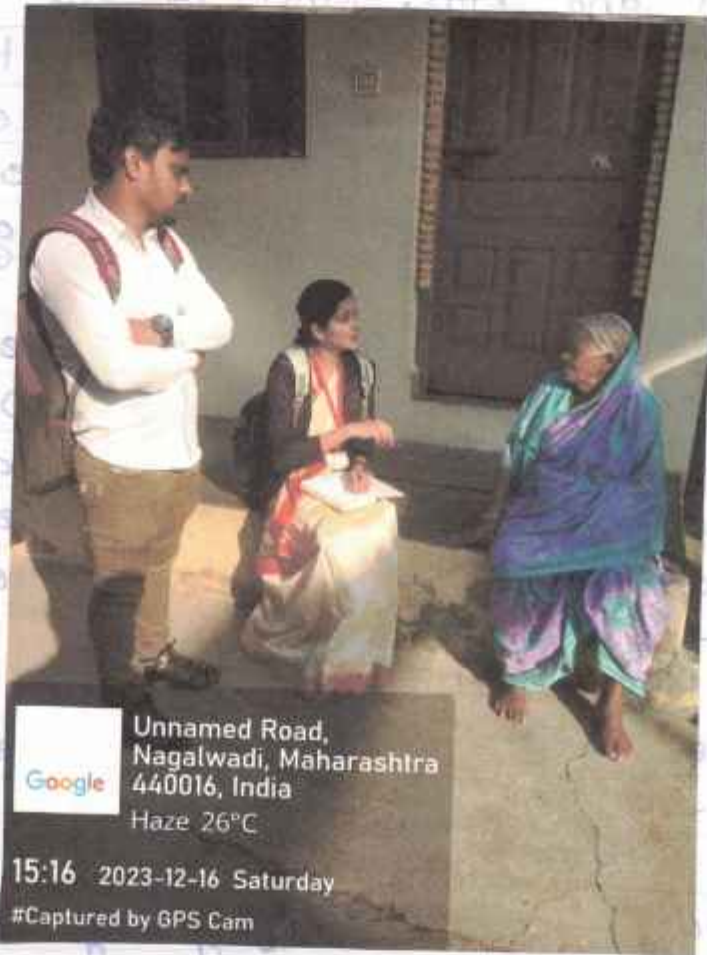
There are mathematical formulas and expressions written on the walls of shops, houses which teach basic mathematics. We came across some women who are now old, but they are able to do all the two digit arithmetic.

These adults and children were so interested that they answered all our questions. They wrote their names on our diary just to show us their joy of being able to read and write.

Men in the village gave us information about their interest in the bank transaction politics and other topics they are interested. I personally felt this connection to the literacy.

Also, we observed that many people had full-time obligations at home as well. They found it difficult to manage all their

DATE: 23/12/23



Also we observed that many people had
found it difficult to engage all their
full-time attention at home as well they
I personally felt this connection to the
political and other topics they are interested
about that interest in the local transactions
and in the village gave us information

Name of Practical

obligations and still managed to learn and keep in touch of reading regularly. Some adults even had confidence to put their thoughts in a strong and firm manner. They just need a small push to motivate themselves for re-starting their education.

While studying for the adult literacy aspect of the village, I concluded that if literacy rates in the society and country are improved, it will allow these adults to reach their full potential in their personal lives as well.

This will help the adults to gain more confidence to step out of their comfort zones and explore more of the world.



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Criteria

Criteria for eligibility for an adult education program-

Eligibility for adult education services includes a person who fits in any one of the following criteria-

1] They are 16 years of age and older and not enrolled in school.

2] do not have basic education skills.

3] do not have a high school diploma or its equivalent.

4] need to improve their ability to speak read or write the English language.

The typical low literate adult is likely to have an income close to the poverty level, be older than 25 with less than a high school diploma, and live in a rental housing. Their children are likely to attend low performing schools in town while a literate adult expects proper educational facilities for their children.

Teacher's Signature

Name of Practical

The changing Definitions of Literacy

A literate adult has-

1865-1] The ability to sign or mark one's name

1900-2] The ability to do basic reading, writing and calculations.

1950-3] The ability to read and write with understanding a short simple statement about one's life.

2000-4] The ability to use printed and written information to function in society, achieve one's goals and develop one's knowledge and potential.

2006-5] Adequate information literacy, health literacy, computer or digital literacy, quantitative and workplace literacy to manage one's life, health and family.

पुस्तकालय हे 7 कोसितीतले पुस्तकालय आहे



महान, लक्षित महामंडळीत आरुपण ले-पुस्तकालय
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पुस्तकालय लक्षित ले अंतर्गत, पुस्तकालय

Need and Challenges -

Name of Practical

Need and challenges of Adult Literacy in India -

- 1] A large number of people in India are devoid of education, the country cannot progress.
- 2] There are a lot of reasons due to which many people could not continue for higher studies or opt for the course which they had an interest in.
- 3] Adult education will enable people to complete their studies if they were not able to complete the same when they were a student.
- 4] This will help them to get a job opportunity in their own field of interest.
- 5] It is also useful for people who require a promotion in their jobs.
- 6] Adult education aims to help in attaining literacy.
- 7] Adult education makes society more stronger by educating its adults and making them self-reliant.

Teacher's Signature.....

Lead and Challenge -
 Adult Education of Adult Literacy



It is also useful for people who reduce
 a proportion in their life

Adult education aims to help in following
 ways

Adult education makes people
 of entering the adult world and working
 their self esteem

Name of Practical

Conclusion

Conclusion

Adult literacy is the ability to write, listen and speak. Adult literacy includes both basic literacy and knowledge pertaining to the civic needs, personal hygiene and adopting political and occupational skills. India has over 35% of the population of the world's total share.

Adult learning can be formal, non-formal and informal, motivational. We know that education is not a time-bound activity or pursuit. Both education and knowledge are ongoing processes that occur for the entire lifetime of an individual. As the saying goes, we learn something new everyday. Even formal education is not solely the privilege of children or young adults. Adult education gives mature adults a chance to learn more and hone any specific skill they wish to.

Adult education consists of offering mature adults various educational options to learn new skills or develop the skills they already possess. It is the means of providing education to adults beyond the traditional school or college education.

Teacher's Signature

Name of Practical

We offer to them at children. Adult education can either be formal, vocational and recreational and social.

Adult or continuing education takes a different approach than traditional college and school education. We have to take into effect, that these adults are already experienced and most likely a part of the workforce. So, the curriculum and teaching methods must be adopted to take this into consideration. The importance of adult education lies in the fact that it builds on the knowledge they will already possess.

The main aim and importance of adult education are to the level playing field for certain adults in the professional world. So, with access to the education they have a second chance at a better career or an advancement in their current career. They can even develop new skills that will help them with their professional lives. While expanding their knowledge and skillset, they can also expand their career prospects. And such adult education also teaches the students how to put their skill and knowledge into practical use.

Teacher's Signature

Name of Practical

Another advantage of adult education is that it improves the literacy rates of the society and the country as a whole. Improving their basic literacy will allow adults to reach their full potential in their personal lives as well. So, they will gain more confidence to step out of their comfort zones and explore more of the world.

While we saw advantages and the importance of adult education, we cannot ignore that there are some notable challenges that we face with the concept of adult education. The most noteworthy is that the adults have to usually balance a full time job and career with such educational activities. They find it difficult to find the time and the energy to balance both.

At other times, the person may have full time obligations at home as well. They find it difficult to manage all their obligations and still manage to attend classes regularly. Some adults even lack the confidence and the motivation to return to the classroom after many years.

Name of Practical

The concept seems vague and foreign to them and they may often require a nudge to re-start their education.

Over the last few decades, government of India has started and promoted various programs for adult education and skill development. The main aim of these programs is to boost literacy rates among the backward areas of country. Their aim has also been to boost the literacy rates of the scheduled caste, scheduled tribes, rural women and other often ignored minorities of our country. Two of the main schemes that have seen some success are the "Saakshat Bharat" scheme and the "Scheme to support Voluntary Agencies for Adult Education and Skill Development".

The government also provides aid and help to other NGO's that are working towards promoting adult education in our country.

Name of Practical

References

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- 2] www.ceam.com - Essay on adult literacy
- 3] www.ispringolutions.com
- 4] www.toppe.com - Essay on importance of adult education
- 5] www.slideseve.com - PPT Adult Education
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offshore

Teacher's Signature

SHEELA MULTIPURPOSE SOCIETY

SHEELADEVI COLLEGE OF EDUCATION



DATTAWADI, WADI, NAGPUR

2023 - 2024

LESSON PLANNING BOOK

पाठ नियोजन पुस्तिका

Name: Ketaki Sheikant Ohale

नाव:

Number: _____

क्रमांक:

Subject: 1) Mathematical

विषय:

2) _____

अनुक्रमणिका
INDEX

पाठांक S.No.	दिनांक Date	शाळा School	वर्ग Class	विषय Subject	विषयांक Topic	स्वाक्षरी Signature
1	16/09	V.L Convent	IX	Maths	Rational and Irrational numbers	<i>Skalbande</i>
2	18/09	— 11 —	IX	Maths	Operations on Real numbers	<i>Skalbande</i>
3	23/09	— 11 —	IX	Maths	Heron's Formula	<i>Skalbande</i>
4	26/09	— 11 —	IX	Maths	Polynomials	<i>Skalbande</i>
5	05/10	— 11 —	IX	Maths	Zeros of a polynomial	<i>Skalbande</i>
6	09/10	— 11 —	IX	Maths	Co-ordinate geometry	<i>Skalbande</i>
7	11/10	— 11 —	IX	Maths	Euclid's Geometry	<i>Skalbande</i>
8	13/10	— 11 —	IX	Maths	Lines and Angles	<i>Skalbande</i>
9	17/10	— 11 —	IX	Maths	Triangles - Congruence criteria	<i>Skalbande</i>

अनुक्रमणिका INDEX

पाठांक S.No.	दिनांक Date	शाळा School	वर्ग Class	विषय Subject	विषयांक Topic	स्वाक्षरी Signature
10	20/10	— —	IX	Maths	quadrilaterals	Skalbook
11	25/10	— —	IX	Maths	circle and its parts	Skalbook
12	27/10	— —	IX	Maths	surface area of cube, cuboid, cone, sphere	Skalbook
13	31/10	— —	IX	Maths	volume of cube, cuboid, cone, sphere	Skalbook
14	20/11	— —	VIII	Maths	Square and square roots	Skalbook
15	22/11	— —	VIII	Maths	cube and cube roots	Skalbook
16	24/11	— —	VIII	Maths	Direct and inverse proportions	Skalbook
17	25/11	— —	VIII	Maths	comparing quantities	Skalbook
18	21/12	— —	VIII	Maths	Linear equation in one variable	Skalbook

पाठांक S.No. 1 विषय Subject Mathematics

शाळा School V.L. Convent विषयांश Topic Rational and Irrational

पाठ साहित्य Material Aids Chalk, Blackboard, dustet, chart showing Number system पूर्व ज्ञान Previous Knowledge Whole numbers, Nat

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
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INTRODUCTION

1] Rational Numbers

*] To enable students to identify Rational and Irrational Numbers

2] Irrational Numbers

*] To enable student to differentiate between Rational and Irrational Numbers

3] Real Numbers

*] To understand Number system and differentiate between the set of numbers

Statement of Aim- Today, we are going to
--

दिनांक

16/09/23

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher ask some introductory questions

students give satisfactory answers to the asked questions.

Q.1] What are natural numbers?

Ans] The counting numbers from 1, 2, 3, 4, ... are called natural numbers.

Q.2] What are whole numbers?

Ans] Whole numbers are the collection of positive numbers with zero.
0, 1, 2, 3, 4, ...

Q.3] What are integers?

Ans] The collection of whole numbers with zero, and negative numbers
... -2, -1, 0, 1, 2, ...

Learn about Rational and Irrational Numbers.

PRESENTATION

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Rational Numbers</u> -</p> <p>The numbers in the form of $\frac{m}{n}$ are called rational numbers.</p> <p>Where,</p> <p>m and n are integers $n \neq 0$.</p> <p><u>Examples</u> -</p> <p>-25 is a rational number, because it can be written in the form of $\frac{m}{n}$ as $-\frac{25}{1}$.</p> <p><u>Decimal Expansion</u> -</p> <p>The decimal expansion of rational numbers is either terminating or non-terminating, recurring.</p> <p>0.687, $1.2\overline{72727}$...</p> <p style="text-align: center;">$= 1.2\overline{7}$</p>	<p>1] <u>Knowledge</u> -</p> <p>Students are able to know the concept of Rational numbers.</p> <p>2] <u>Understanding</u> -</p> <p>Students are able to understand various rational numbers.</p> <p>3] <u>Application</u> -</p> <p>Students are able to apply concept of rational numbers to various examples.</p>

Teachers ask some questions related to the topic.

Q.1] What are Rational numbers?

Students give appropriate answers to the asked questions.

Ans] When a number can be written in the form of $\frac{m}{n}$ where m, n are integers and $n \neq 0$ are rational numbers.

Q.2] Give any two examples of rational numbers.

Ans] $6, \frac{7}{6}, \frac{8}{6}, \frac{12}{6}, \frac{15}{3}, \frac{-19}{4}$

are examples of some rational numbers.

Q.3] How many rational numbers are there between any given two rational numbers?

Ans] There are infinitely many rational numbers between any given two rational numbers.

Q.4] Find three rational numbers between 6 and 7.

Ans] $3+1=4$

$$6 \times \frac{4}{4} = \frac{24}{4}$$

$$7 \times \frac{4}{4} = \frac{28}{4}$$

Three numbers between 6 and 7 are

$$\left[\frac{25}{4}, \frac{26}{4}, \frac{27}{4} \right]$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Irrational Numbers</u> -</p> <p>The numbers which cannot be written in the form of $\frac{m}{n}$ where, m and n are integers and $n \neq 0$</p> <p><u>Examples</u> -</p> <p>$\sqrt{2}, \sqrt{3}, \sqrt{5}, \pi$ are some of the examples of irrational numbers.</p> <p><u>Decimal Expansion</u> -</p> <p>The decimal expansion of irrational numbers is non-terminating and non-repeating</p> <p>$\sqrt{2} = 1.4142135 \dots$</p> <p>$\pi = 3.14159265 \dots$</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of Irrational numbers</p> <p>2] <u>Understanding</u> - students are able to understand various Irrational Numbers.</p> <p>3] <u>Application</u> - students are able to apply the concept of Irrational numbers to various examples</p>

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Rational numbers - i] Definition ii] Examples iii] Decimal Expansion	*] To revise the topic taught by the teacher. *] To evaluate the understanding of students
	2] Irrational numbers - i] Definition ii] Examples iii] Decimal expansion	*] To test the knowledge regarding the number system and examples

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] What are real numbers.

Ans] The collection of all rational and irrational numbers is called real numbers.

Q] Classify the following as rational or irrational numbers.

Ans] i] $\sqrt{9} = 3$... rational
 ii] $\sqrt{2} = 1.414...$... irrational
 iii] $\pi = 3.1415...$... irrational
 iv] $\sqrt{225} = 15$... rational.

- i] $\sqrt{9}$
- ii] $\sqrt{2}$
- iii] π
- iv] $\sqrt{225}$

Q] How can you classify rational and irrational numbers using their decimal expansions?

Ans] If the decimal expansion of a number is terminating or non-terminating recurring, then it is a rational number.

If the decimal expansion of a number is non-terminating, non-recurring then it is an irrational number.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
HOMEWORK		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly

फलक सार
Black Board Summary

Day - Saturday	Class - IX	On Roll -
Date - 16/09/23	Sub - Mathematics	Present -
	Topic - Rational and Irrational Numbers	Absent -
1] Rational Numbers $Q = \left\{ \frac{p}{q}, \text{ where } p \text{ and } q \text{ are integers } q \neq 0 \right\}$	2] Irrational Numbers $I = \{ \text{non-rational numbers} \}$	
	3] Real numbers $R = \{ \text{rational, irrational} \}$	
Homework - classify the following numbers as rational or irrational numbers		
1] $\sqrt{23}$	2] $\sqrt{625}$	3] 0.3796
		4] 7.478478 ----

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on the black-board.
Homework-

students write it down and solve by themselves in their respective notebooks.

Classify the following numbers as rational or irrational numbers.

- i] $\sqrt{23}$
- ii] $\sqrt{625}$
- iii] 0.3796
- iv] 7.478478...
- v] 2.202002000...
- vi] $\sqrt{3}$

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 2
S.No

विषय Mathematics
Subject

शाळा V.L. Convent
School

विषयांश Operations on Rational
Topic

पाठ साहित्य Chalk, Blackboard,
Material Aids Guster

पूर्व ज्ञान Rational, Irrational
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Rationalisation of denominator. 2] Laws of exponents for real numbers	*] To enable students to perform various operation on real numbers *] To enable students to apply laws of indices on real numbers *] To understand operations to be performed and apply it to solve various example
statement of Aim - Today, we		are going to

दिनांक

18/09/23

Date

वर्ग

IXth

Class

तासिका अवधि

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some of the introductory questions.

Students give satisfactory answers to the asked questions.

Q1] What is $(\sqrt{6}) + (-\sqrt{6})$?

Ans] The answer of $(\sqrt{6}) + (-\sqrt{6})$ is zero

$$\sqrt{6} + (-\sqrt{6}) = 0$$

Q2] What is $(\sqrt{3}) \cdot (\sqrt{3})$?

Ans] The answer of $(\sqrt{3}) \cdot (\sqrt{3})$ is 3

$$(\sqrt{3}) \cdot (\sqrt{3}) = 3$$

Q3] What is $\frac{\sqrt{17}}{\sqrt{17}}$?

Ans] The answer of $\frac{\sqrt{17}}{\sqrt{17}}$ is 1

$$\frac{\sqrt{17}}{\sqrt{17}} = 1$$

Learn operations on real numbers.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Operations on Real Numbers-</u></p> <p>1] The sum or difference of a rational number and an irrational number is irrational. ex - $2\sqrt{2} + \sqrt{2} = 3\sqrt{2}$</p> <p>2] The product or quotient of a non-zero rational number with an irrational number is irrational. ex - $6\sqrt{3} \times 2 = 12\sqrt{3}$ $\frac{6\sqrt{3}}{2} = 3\sqrt{3}$</p> <p>3] If we add, subtract, multiply or divide two irrationals, the result may be rational or irrational. ex - $\frac{8\sqrt{15}}{2\sqrt{3}} = 4\sqrt{5}$ $\frac{3\sqrt{3}}{2\sqrt{3}} = \frac{3}{2}$</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of rationalisation of numbers</p> <p>2] <u>Understanding</u> - students are able to understand why and how real numbers are rationalised.</p> <p>3] <u>Application</u> - students are able to apply the concept of rationalisation in examples and solve them.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher ask some questions related to the topic

students give appropriate answers to the asked questions.

1] Rationalise the denominator of $\frac{1}{\sqrt{2}}$

Ans] $\frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

2] Rationalise the denominator of $\frac{1}{2+\sqrt{3}}$

Ans] $\frac{1}{2+\sqrt{3}} \times \frac{2-\sqrt{3}}{2-\sqrt{3}} = \frac{2-\sqrt{3}}{(2)^2 - (\sqrt{3})^2}$
 $= \frac{2-\sqrt{3}}{1}$
 $= 2-\sqrt{3}$

3] what is

i] $\sqrt{a} \times \sqrt{b} =$

Ans] The answer of i] $\sqrt{a} \times \sqrt{b}$ is \sqrt{ab}

ii] $(\sqrt{a}+b)(\sqrt{a}-b)$

ii] $(\sqrt{a}+b)(\sqrt{a}-b)$ is $(\sqrt{a})^2 - b^2 = a - b^2$

4] What is rationalising the denominator?

Ans] when the the denominator contains a term with square root, the process of converting it to an expression whose denominator is a rational number is called rationalising the denominator.

पाठ्याच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Laws of Exponents</u></p> <p>Let $a > 0$ be a real number and p and q be the rational numbers, then,</p> <p>i] $a^p \cdot a^q = a^{p+q}$</p> <p>ii] $(a^p)^q = a^{pq}$</p> <p>iii] $\frac{a^p}{a^q} = a^{p-q}$</p> <p>iv] $a^p b^p = (ab)^p$</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of laws of indices with respect to real numbers.</p> <p>2] <u>Understanding</u> - students are able to understand various laws of indices</p> <p>3] <u>Application</u> - students are able to apply the concept of laws of indices to solve examples</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the

students give appropriate answers to the asked questions.

Q] In the law $a^m \cdot a^n = a^{m+n}$ what are a, m, n called?

Ans] In the given law a is called the base and m and n are called exponents.

Q] What is i] $a^0 = ?$

Ans] The answer of

ii] $\frac{1}{a^n} = ?$

i] $a^0 = 1$
ii] $\frac{1}{a^n} = a^{-n}$

Q] What is i] $\sqrt[n]{a} = ?$

Ans] The answer of

ii] $2^{1/3} = ?$

i] $\sqrt[n]{a} = a^{1/n}$

ii] $2^{1/3} = \sqrt[3]{2}$

Q] Explain how you do see at $a^{m/n}$ in the view of Laws of exponents.

Ans] Let $a > 0$ be a real number Let m and n are integers such that they don't have common factors. then,

$$a^{m/n} = (\sqrt[n]{a})^m = \sqrt[n]{a^m}$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Operations on real numbers. 2] Rationalisation of the denominator 3] Laws of exponents.	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students. *] To test the knowledge gained by students regarding operations on real numbers.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] What should we do to rationalise the denominator of $\frac{1}{\sqrt{a+b}}$?

Ans] To rationalise the given number, we should multiply it by $\frac{\sqrt{a-b}}{\sqrt{a-b}}$ where a, b are integers.

Q] If x is rational and s is irrational, what are its addition, subtraction, multiplication and division?

Ans] If x is rational and s is irrational, then $x+s$ and $x-s$ are irrational and xs and $\frac{x}{s}$ are irrational where $x \neq 0$.

Q] Simplify - $2^{\frac{2}{3}} \cdot 2^{\frac{1}{3}}$

Ans] By using the laws of indices $a^p \cdot a^q = a^{p+q}$
 $2^{\frac{2}{3}} \cdot 2^{\frac{1}{3}} = 2^{\frac{2}{3} + \frac{1}{3}}$
 $= 2^1 = 2$

The answer is 2.

Q] Simplify - $(3^{\frac{1}{5}})^4$

Ans] By using the laws of indices $(a^p)^q = a^{pq}$
 $(3^{\frac{1}{5}})^4 = 3^{\frac{1}{5} \times 4}$
 $= 3^{\frac{4}{5}}$

The answer is $3^{\frac{4}{5}}$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly.

फलक सार

Black Board Summary

Day - Monday
Date - 18/09/23

Class - IX
Sub - Mathematics
Topic - operations on
real numbers

On Roll -
Present -
Absent -

1] Rationalisation of denominator
 $\sqrt{ab} = \sqrt{a} \times \sqrt{b}$
 $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b}) = a - b$

2] Laws of Indices
a] $a^p \cdot a^q = a^{p+q}$
b] $a^p / a^q = a^{p-q}$
c] $(a^p)^q = a^{pq}$
d] $a^p \cdot b^p = (ab)^p$

Homework - simplify -

1] $(3 + \sqrt{3})(3 - \sqrt{3})$

2] $(3 + \sqrt{3})(2 + \sqrt{2})$

3] $32^{2/5}$


4] $7^{1/2} \cdot 8^{1/2}$

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teacher gives homework written on blackboard</p> <p>Homework - Q] simplify</p> <p>(i) $(3+\sqrt{3})(3-\sqrt{3})$</p> <p>(ii) $(3+\sqrt{3})(2+\sqrt{2})$</p> <p>(iii) $32^{\frac{2}{5}}$</p> <p>(iv) $= \frac{1}{2} \cdot 8^{\frac{1}{2}}$</p>	<p>Students write it down and solve by themselves in their respective notebooks.</p>

अभिप्राय (Remarks)

Very Good


 पर्यवेक्षिकाची सही
 (Sign. of Supervisor)

पाठांक 3
S.No.

विषय Mathematics
Subject

शाळा V.L. Convent
School

विषयांश Heron's Formula
Topic

पाठ साहित्य Chalk, Blackboard,
Material Aids Suster

पूर्व ज्ञान Types of Triangles
Previous Knowledge

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N	1] Perimeter 2] semiperimeter 3] Heron's formula 4] Applications	*] To enable students to find area of scalene triangle *] To enable students to apply Heron's formula to find area of triangles. *] To enable students to apply Heron's formula in real life examples.
statement of Aim - Today, we are going to		

दिनांक

23/09/23

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

अध्यायानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions.

Students give appropriate answers of the asked questions.

Q.1] What are types of triangles with respect to sides?

Ans] The types of triangles based on sides are
i] Equilateral triangle
ii] Isosceles triangle
iii] Scalene triangle

Q.2] What are types of triangles with respect to angles?

Ans] The types of triangles based on angles are
i] Acute angled triangle
ii] Obtuse angled triangle
iii] Right angled triangle

Q.3] What is the formula to calculate area of triangle?

Ans] The area of triangle can be calculated by
 $A = \frac{1}{2} \times \text{base} \times \text{height}$

Learn about Heron's Formula

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Perimeter of a triangle</u></p> <p>A triangle with three sides a, b, and c has its perimeter</p> $P = a + b + c$ <p><u>Semiperimeter of a triangle</u></p> <p>semiperimeter</p> $s = \frac{a + b + c}{2}$	<p>1] <u>Knowledge</u> - students are able to know the concept of perimeter and semiperimeter.</p> <p>2] <u>Understanding</u> - students are able to understand the use of perimeter and semi-perimeter.</p> <p>3] <u>Application</u> - students are able to apply learned concepts in real life situations.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

students give appropriate answers to the asked questions.

Q.1] What is perimeter of a triangle?

Ans] The sum of lengths of all three sides of a triangle is perimeter
 $P = a + b + c$

Q.2] What is the unit of perimeter and semiperimeter of a triangle?

Ans] The unit of perimeter and semiperimeter is same as that of length i.e. m, cm or unit

Q.3] Find the perimeter of a triangle whose sides are 3cm, 4cm and 5cm.

Ans] Perimeter of triangle
 $P = a + b + c$
 $= 3 + 4 + 5$
 $= 12 \text{ cm}$
 $\therefore \text{Perimeter} = 12 \text{ cm}$

Q.4] Find the semiperimeter of the triangle in the above question.

Ans] Semiperimeter of a triangle
 $s = \frac{a + b + c}{2}$
 $s = \frac{3 + 4 + 5}{2} = \frac{12}{2} = 6 \text{ cm}$
 $\therefore \text{Semiperimeter} = 6 \text{ cm}$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Heron's Formula</u></p> <p>Area of a triangle</p> $A = \sqrt{s(s-a)(s-b)(s-c)}$ <p>Where,</p> <p>A is area of triangle s is semiperimeter a, b, c are sides of a triangle.</p> <p><u>Applications -</u></p> <p>1] To find the area of different types of a triangle</p> <p>2] To find the area of a quadrilateral.</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of Heron's formula</p> <p>2] <u>Understanding</u> - students are able to understand how Heron's formula is used to find area of triangles.</p> <p>3] <u>Application</u> - students are able to apply learned concepts to real life examples and scenarios.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] What is a scalene triangle?

Ans] A triangle whose all three sides are of unequal length is called a scalene triangle.

Q] Who gave Heron's Formula?

Ans] Hero of Alexandria derived formula for the calculation of the area of a triangle using length of all three sides.

Q] What is the unit of area of a triangle?

Ans] The unit of area of a triangle is cm^2 or sq. cm , m^2 or sq. m , unit^2 or sq. units .

Q] Find area of a triangle whose sides are 10m, 17m and 21m?

Ans]
$$s = \frac{a+b+c}{2} = \frac{10+17+21}{2} = 24 \text{ m}$$

$$A = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{24(24-10)(24-17)(24-21)}$$

$$= \sqrt{24 \times 14 \times 7 \times 3} = \sqrt{7056}$$

$$= 84 \text{ sq. m}$$

$$\therefore \text{Area} = 84 \text{ sq. m / m}^2$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Perimeter $P = a + b + c$	*] To revise the topic taught by the teacher.
	2] Semiperimeter $s = \frac{a + b + c}{2}$	*] To evaluate the topic understood by the students.
	3] Heron's Formula $A = \sqrt{s(s-a)(s-b)(s-c)}$	*] To test the knowledge gained by the students regarding Heron's formula.
	4] Applications of Heron's formula	

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly

फलक सार

Black Board Summary

Day - Monday

Date - 18/09/23

Class - IX

Sub - Mathematics

Topic - Heron's Formula

on Roll -

Present -

Absent -

Perimeter - sum of all the sides of a figure is called Perimeter

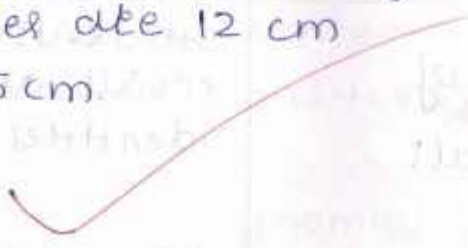
$$P = a + b + c$$

$$s = \frac{a + b + c}{2}$$

$$A = \sqrt{s(s-a)(s-b)(s-c)}$$

Homework - Find the area of a triangle whose perimeter is 54 cm and two of its sides measure 12 cm and 25 cm.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teacher gives homework written on blackboard. Homework - Q] Find the area of a triangle whose perimeter is 54 cm and two of its sides are 12 cm and 25 cm.</p> 	<p>Students write it down and solve in their respective notebooks.</p>

अभिप्राय (Remarks)

<p><i>(Faint handwritten notes in Hindi)</i></p>	<p><i>(Faint handwritten notes in Hindi)</i></p>
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पर्यवेक्षकाची सही
 (Sign. of Supervisor)

पाठक
S.No. 4


विषय
Subject Mathematics

शाळा
School V.L-Convent

विषयांश
Topic Polynomials (Degree

पाठ साहित्य
Material Aids Chalk, dustek,
Blackboard.

पूर्व ज्ञान
Previous Knowledge Basic algebraic

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
RECORD	1] Degree of Polynomials 2] Algebraic Identities 	*] To enable students to recall algebraic identities *] To enable students to predict the degree of the polynomials. *] students are able to define co-efficient, degree of polynomials
Statement of Aim - Today we are going to		

दिनांक

26/09/23

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Q1] What are polynomials?

Ans] An expression of more than two algebraic terms, contain sum and various powers of the variables is called a polynomial.

Q2] In the given polynomial, $5x^2 + 2y - 7$, what is the constant?

Ans] In the given polynomial, constant term is 7.

Q3]

Ans]

study the topic Polynomials.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Degree of a polynomial</u></p> <p>$5x^2 + 2y - 7$</p> <p>Exponent coefficient variable</p> <p>The highest power of the variable in a polynomial is called as degree of the polynomial.</p> <p>In the given polynomial, highest power of variable is 2. So, degree of the polynomial is 2.</p>	<p>1] <u>Knowledge</u>- The students are able to know various algebraic identities</p> <p>2] <u>Understanding</u> The students will be able to explain the term and coefficient of polynomials.</p> <p>3] <u>Application</u> The students are able to predict the degree of the polynomials.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] What are polynomials having one and two terms called?

Ans] Polynomials having one term are called monomials while two terms are called binomials.

Q.2] What is a polynomial having degree one and two called?

Ans] A polynomial of degree one is called linear polynomial while one having degree two is called quadratic

Q.3] What is the degree of a non-zero constant polynomial?

Ans] The degree of a non-zero constant polynomial is zero.

Q.4] What is a polynomial having degree three and four called?

Ans] A polynomial of degree three is called cubic polynomial whereas one having degree four is called as quartic polynomial.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Algebraic Identities</u></p> <p>1] $(x+y)^2 = x^2 + 2xy + y^2$</p> <p>2] $(x-y)^2 = x^2 - 2xy + y^2$</p> <p>3] $x^2 - y^2 = (x+y)(x-y)$</p> <p>4] $(x+a)(x+b)$ $= x^2 + (a+b)x + ab$</p> <p>5] $(x+y+z)^2$ $= x^2 + y^2 + z^2 + 2xy$ $+ 2yz + 2zx$</p> <p>6] $(x+y)^3 = x^3 + y^3 +$ $3xy(x+y)$</p> <p>7] $(x-y)^3 = x^3 - y^3$ $- 3xy(x-y)$</p> <p>8] $x^3 + y^3 + z^3 - 3xyz$ $= (x+y+z)$ $(x^2 + y^2 + z^2 - xy$ $- yz - zx)$</p>	<p>1] <u>Knowledge</u> - students are able to know various algebraic identities.</p> <p>2] <u>Understanding</u> The students will be able to explain the terms coefficients and degree of polynomials.</p> <p>3] <u>Application</u> - The students are able to predict the degree of the polynomials.</p>

अध्ययनानुभव (Learning Experience)

ion)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.2] Find the product of $(x-3)(x+5)$

Ans] $(x-3)(x+5)$
 $= x^2 + [-3+5]x + (-3)(5)$
 $= x^2 + 2x - 15$

Q.3] Evaluate 105×106 without multiplying directly.

Ans] $105 \times 106 = (100+5)(100+6)$
 $= (100)^2 + (5+6) \times 100 + (5 \times 6)$
 $= 10000 + 1100 + 30$
 $= 11130$

Q.3] Write $(3a+4b+5c)^2$ in expanded form.

Ans] let $x = 3a, y = 4b$
 $z = 5c$
 $(3a+4b+5c)^2 = 9a^2 + 16b^2 + 25c^2 + 24ab + 40bc + 30ac$

Q.4] Evaluate $(104)^3$ without calculating numerically

Ans] $(104)^3 = (100+4)^3$
 $(104)^3 = (100)^3 + (4)^3 + 3(100)(4)(100+4)$
 $= 1000000 + 64 + 124800$
 $= 1124864$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
<p style="text-align: center;">R E C A P I T U L A T I O N</p>	<p>1] Degree of a polynomial → a] linear b] quadratic c] cubic d] quartic</p> <p>2] Algebraic Identities</p>	<p>*] To revise the topic taught by the teacher.</p> <p>*] To evaluate the topic understood by the students.</p> <p>*] To test the knowledge gained by the students regarding polynomials.</p>

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अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

Students give appropriate answers to the asked questions.

Q-1] What is the coefficient of x^2 in the following-

Ans] The coefficient of x^2 in

i] $2 + x^2 + x$

i] $2 + x^2 + x$ is 1

ii] $\frac{\pi}{2}x^2 + x$

ii] $\frac{\pi}{2}x^2 + x$ is $\frac{\pi}{2}$

Q-2] Write the degree of each of the following

Ans] The degree of equations

i] $5x^3 + 4x^2 + 7x$

i] $5x^3 + 4x^2 + 7x$ is 3

ii] $4 - y^2$

ii] $4 - y^2$ is 2

iii] $5t - \sqrt{7}$

iii] $5t - \sqrt{7}$ is 1

Q-3] Give one example each of a binomial of degree 35 and a monomial of degree 100.

Ans] A binomial of degree 35 is $3x^{35} + 25$

Monomial of degree 100 is $y^{100}, 3x^{100}$

Q-4] Write the following cube in the expanded form

$(3a + 4b)^3$

Ans] $(3a + 4b)^3$
 $= (3a)^3 + (4b)^3 + 3(3a)(4b)(3a + 4b)$
 $= 27a^3 + 64b^3 + 108a^2b + 144ab^2$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly

फलक सार

Black Board Summary

Day - Saturday
Date - 23/09/23

Class - IX
Sub - Mathematics
Topic - Polynomials

On Roll -
Present -
Absent -

Standard form of
a polynomial
 $ax^2 + bx + c = 0$

Degree of a Polynomial

- 1] Linear
- 2] Quadratic
- 3] Cubic
- 4] Quatic

Homework - Q.1] Classify the following polynomials as linear, quadratic and quatic.
a] $x^2 + x$ b] $x^4 + 7x^3$ c] $x + 1$ d] x^2

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard.

Students write it down and solve it in their respective notebooks.

Homework -

1] Classify the following as linear, quadratic and cubic, quartic polynomials.

- 1] $x^2 + x$
- 2] $x^4 + 7x^3$
- 3] $1 + x + x^2$
- 4] x^2

2] Expand

- 1] $(3x + 4)(3x - 5)$
- 2] $(2a - 3b)^3$

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 5 विषय Subject Mathematics
 शाळा School V.L. Convent विषयांश Topic Zeros of a Polynomial
 पाठ साहित्य Material Aids Chalk, dustek, blackboard पूर्व ज्ञान Previous Knowledge Polynomials and

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Zero of a polynomial 2] Factor Theorem	*] To enable students to identify factors of a polynomial *] To enable students to predict the zeros of a polynomial *] students are able to define factor theorem
<p>Statement of Aim - Today we are going to</p>		

दिनांक

05/10/23

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

Factor Theorem

Algebraic identities

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activitiesछात्र कृती
Student's Activities

Teachers ask some introductory questions

Students give appropriate answers to the asked questions.

Q.1] What is the variable in the equation/ polynomial $5x^3 - 2x^2 + 3x - 2$

Ans] In the polynomial $5x^3 - 2x^2 + 3x - 2$, x is the variable.

Its value varies from a lower range to higher

Q.2] Which value will you get when you replace x by 1 in the equation?

Ans] $p(x) = 5x^3 - 2x^2 + 3x - 2$
 $p(1) = 5(1)^3 - 2(1)^2 + 3(1) - 2$
 $= 5 - 2 + 3 - 2$
 $p(1) = 4$

Q.3] What can we say from above value?

Ans] We can say that the value of $p(x)$ at $x=1$ is 4.

study zeros of a Polynomial.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Zeros of a Polynomial</u></p> <p>A zero of a polynomial $p(x)$ is a number c such that $p(c) = 0$</p> <p><u>Ex - Finding a zero of $p(x)$ is same as solving the equation $p(x) = 0$</u></p> <p>if $p(x) = 2x + 1$</p> $2x + 1 = 0$ $2x = -1$ $x = -\frac{1}{2}$ <p>$\therefore -\frac{1}{2}$ is the zero of the polynomial $p(x) = 2x + 1$</p>	<p>1] <u>Knowledge</u> - The students are able to know zeros of a polynomial</p> <p>2] <u>Understanding</u> - students are able to understand how zeros of polynomial are calculated</p> <p>3] <u>Application</u> - students are able to calculate zeros of polynomial and apply it to solve examples</p>

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ation)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

Students give appropriate answers to the asked questions.

Q] How many zeros does a linear polynomial has?

Ans] Every linear polynomial has one and only one zero.

Q] Can a polynomial have more than one zero?

Ans] Yes, a polynomial can have more than one zero.

Q] Verify whether -2 is the zero of the polynomial $x+2$

Ans] Let $p(x) = x+2$
 $0 = x+2$
 $x = -2$
 \therefore Yes, -2 is a zero of the polynomial $x+2$

Q] Check whether 2 and 0 are zeros of the polynomial $x^2 - 2x$.

Ans] Let $p(x) = x^2 - 2x$
 $p(2) = (2)^2 - 2(2)$
 $= 4 - 4$
 $= 0$
 $p(0) = (0)^2 - 2(0)$
 $= 0 - 0$
 $= 0$
Yes, 2 and 0 are both zeros of the polynomial $x^2 - 2x$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Factor Theorem</u> -</p> <p>If $p(x)$ is a polynomial of degree $n \geq 1$ and a is any real number, then</p> <p>i] $x-a$ is a factor of $p(x)$ if $p(a)=0$</p> <p>ii] $p(a)=0$ if $x-a$ is a factor of $p(x)$</p> <p><u>Ex</u> - Examine whether $x+2$ is a factor of $2x+4$.</p> <p>The zero of $2x+4$ is</p> $p(x) = 2x+4$ $0 = 2x+4$ $2x = -4$ $x = -2$ $p(-2) = 2(-2)+4$ $= -4+4$ $= 0$ <p>$\therefore (x+2)$ is a factor of $2x+4$</p>	<p>1] <u>Knowledge</u> - Students are able to know factor theorem of polynomials.</p> <p>2] <u>Understanding</u> - Students are able to understand how factors of a polynomial are predicted.</p> <p>3] <u>Application</u> - Students are able to apply factor theorem to solve examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

students give appropriate answers to asked questions.

Q] Factorise $y^2 - 5y + 6$ by factor theorem.

Ans] $p(y) = (y-a)(y-b)$
 $p(2) = 2^2 - (5 \times 2) + 6 = 0$
 $\therefore y-2$ is a factor of $p(y)$
 $p(3) = 3^2 - (5 \times 3) + 6 = 0$
 $\therefore y-3$ is a factor of $p(y)$
 $\therefore (y-2)(y-3)$ are factors

Q] Factorise $y^2 - 5y + 6$ by splitting the middle term

Ans] $y^2 - 5y + 6$
 $= y^2 - 3y - 2y + 6$
 $= y(y-3) - 2(y-3)$
 $= (y-2)(y-3)$
 $\therefore (y-2)(y-3)$ are the factors.

Q] If $p(a) = 0$ of $p(x)$ then what can you say about its factors?

Ans] If $p(a) = 0$ then $(x-a)$ is a factor of given $p(x)$.

Q] Find the value of 'k' if $x-1$ is a factor of $4x^3 + 3x^2 - 4x + k$.

Ans] $x-1$ is a factor of $p(x)$
 $\therefore p(1) = 0$
 $p(1) = 4(1)^3 + 3(1)^2 - 4(1) + k$
 $0 = 4 + 3 - 4 + k$
 $k = -3$

\therefore value of k is -3 .

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	<p>1] Zeros of a polynomial</p> <p>2] Factor Theorem if $x-a$ is a factor of $p(x)$ then $p(a) = 0$</p> <p>3] Splitting the middle term.</p>	<p>*] To revise the topic taught by the teacher</p> <p>*] To evaluate the topic understood by the students.</p> <p>*] To test the knowledge gained by the students regarding polynomials</p>

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ition)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

students give appropriate answers to the asked questions.

Q1] Find the value of the polynomial $5x - 4x^2 - 3$ at $x=0$

Ans] let $p(x) = 5x - 4x^2 - 3$
 $p(0) = 5(0) - 4(0)^2 - 3$
 $= -3$

\therefore at $x=0$, value of polynomial is -3 .

Q2] Find $p(1)$ of the polynomial $p(y) = y^2 - y + 1$

Ans] let $p(y) = y^2 - y + 1$
 $p(1) = (1)^2 - (1) + 1$
 $p(1) = 1$

$\therefore p(1)$ of $p(y)$ is 1 .


Q3] Is it necessary that zero of a polynomial is zero?

Ans] No, a zero of a polynomial need not to be zero.

Q4] Determine whether $g(x) = x+1$ is a factor of $p(x) = 2x^3 + x^2 - 2x - 1$

Ans] $p(x) = 2x^3 + x^2 - 2x - 1$
 $x+1=0 \quad x=-1$
 $p(-1) = 2(-1)^3 + (-1)^2 - 2(-1) - 1$
 $= -2 + 1 + 2 - 1$
 $= 0$

$\therefore g(x)$ is a factor of $p(x)$

पाठ्याच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
K R O W N O R H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly.

फलक सार
Black Board Summary

<u>Day</u> - Tuesday <u>Date</u> - 26/09/23	<u>Class</u> - IX <u>Sub</u> - Mathematics <u>Topic</u> - Zeros of a polynomial	On Roll - Present - Absent -
1] Zeros of a polynomial $p(x)$ is $p(x) = 0$	2] Factor theorem \rightarrow If $(x-a)$ is a factor of $p(x)$ then $p(a) = 0$	
<u>Homework</u> - Q.1] Find the zeros of $p(x)$ in each case.		
1] $p(x) = 3x - 2$ 2] $p(x) = 2x + 5$		

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अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. Homework - 1] Find zero of the polynomial $p(x)$ in each case i) $p(x) = 3x - 2$ ii) $p(x) = 2x + 5$ 2] Factorise i) $12x^2 + 7x + 1$ ii) $6x^2 + 5x - 6$	students write it do and solve it in th notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठक S.No. 6 विषय Mathematical
 शाळा V.L. Convent विषयांश Co-ordinate Geom
 School V.L. Convent Topic Co-ordinate Geom
 पाठ साहित्य Chalk, Dustee, पूर्व ज्ञान Position of point
 Material Aids Blackboard, Graph Paper Previous Knowledge Position of point

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N	1] Cartesian system 2] Plotting the points in the Cartesian plane	*] To enable students to know and understand co-ordinate geometry *] To enable students to determine x and y coordinates of the points. *] students are able to plot points in the Cartesian plane
<u>statement of Aim</u> - Today, we are going to		

दिनांक

09/10/23

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions

Students give appropriate answers to the asked questions.

Q] How many information do you need to represent a dot?

Ans] We need two independent informations to represent the position of a dot.

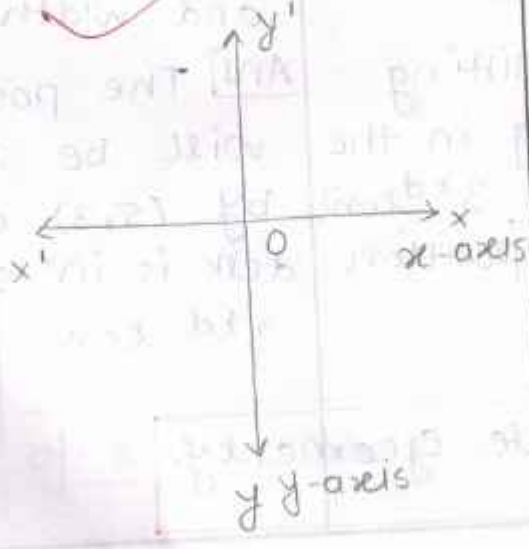
Q] How will you describe the position of table lamp on your study table?

Ans] We will describe the position of table lamp with the help of length and width to the position.

Q] If you are sitting on the desk lying in the 5th column and 3rd row, how will your position be represented?

Ans] The position of desk will be represented by (5,3) as the position of desk is in 5th column and 3rd row.

Learn co-ordinate geometry.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<u>Cartesian system</u>	1] <u>Knowledge</u> students are able to know about cartesian plane.
	1] <u>x-axis</u> $x'x$ The horizontal line is called x-axis	
	2] <u>y-axis</u> $y'y$ The vertical line is called y-axis	2] <u>Understanding</u> students are able to understand positions of a point on the graph paper
	3] <u>Origin</u> O The point where x and y axis cross is called origin.	3] <u>Application</u> students are able to apply the knowledge to plot points on the graph paper.
	4] <u>Negative directions</u> ox' and oy' 5] <u>Positive directions</u> ox and oy	

स्पष्टीकरण
(with Specification)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

Students give appropriate answers to the asked questions.

1] The concept of co-ordinate geometry was mainly developed by which mathematician?

Ans] The concept of coordinate geometry was developed by French philosopher and mathematician Rene Descartes.

2] What is the name of horizontal and vertical lines drawn to determine the position of any point in the Cartesian plane?

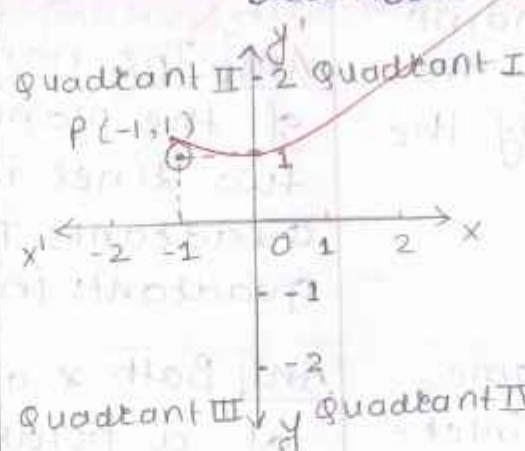
Ans] In the Cartesian plane, horizontal line is called x-axis and vertical line is called y-axis.

3] What is the name of each part of the plane formed by the two lines?

Ans] The name of the part of the plane formed by two lines is called quadrants. There are four quadrants in Cartesian plane.

4] What is the name of the point of intersection of x and y axes?

Ans] Both x and y intersect at a point called origin. Co-ordinates of origin are $O(0,0)$.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Quadrants -</u> x and y axes divide the cartesian plane into four parts, these parts are called quadrants.</p> <p><u>x-coordinate -</u> perpendicular distance measured along x-axis from y-axis. abscissa.</p> <p><u>y-coordinate -</u> perpendicular distance measured along y-axis from x-axis. ordinate.</p>  <p>The position of point P is represented by $P(-1, 1)$</p>	<p>1] <u>Knowledge</u> students are able to know about cartesian plane and coordinates of points.</p> <p>2] <u>Understanding</u> students are able to understand position of a point on the graph paper.</p> <p>3] <u>Application</u> students are able to apply the knowledge of cartesian system to plot points on the graph paper.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

students give appropriate answers to the asked questions.

Q.1] To locate the position of an object in a plane, what do we need?

Ans] To determine position of an object in a plane, we require two perpendicular lines, one horizontal and one vertical.

Q.2] What are the plane and intersecting lines called?

Ans] The plane is called as cartesian plane and the lines are called co-ordinate axes. x-axis and y-axis

Q.3] Define x-coordinate.

Ans] The distance of a point from the y-axis is called x-coordinate or abscissa.

Q.4] Define y-coordinate

Ans] The distance of the point from the x-axis is called y-coordinate or ordinate

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Cartesian system → a] x-axis b] y-axis c] origin d] Negative direction e] Positive direction	*] To revise the topic taught by the teacher.
	2] Quadrants → a] Quadrant I (+, +) b] Quadrant II (-, +) c] Quadrant III (-, -) d] Quadrant IV (+, -)	*] To evaluate the topic understood by the student.
	3] x-coordinate abscissa	*] To test the knowledge gained by students regarding co-ordinate geometry.
	4] y-coordinate ordinate	

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

Students give appropriate answers to the asked questions.

Q-1] If the abscissa of a point is x and the ordinate is y , then what are the co-ordinates of the point?

Ans] If the abscissa of a point is x and the ordinate is y , then the co-ordinates of point are (x, y)

Q-2] What are the co-ordinates of a point lying on x -axis?

Ans] The co-ordinates of a point lying on x -axis is $(x, 0)$

Q-3] What are the co-ordinates of a point lying on y -axis?

Ans] The co-ordinates of a point lying on y -axis is $(0, y)$

Q-4] What are signs of the four quadrant co-ordinates?

Ans] The signs of four quadrants are $(+, +)$, $(-, +)$, $(-, -)$, $(+, -)$ respectively.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time. *] To create the interest in the topic taught. *] To understand the taught concept properly.

फलक सार
Black Board Summary

<p><u>Day</u> - Thursday <u>Date</u> - 05/10/23</p>	<p><u>Class</u> - IX <u>Sub</u> - Mathematics <u>Topic</u> - co-ordinate geometry</p>	<p>On Roll - Present - Absent -</p>
<p>Cartesian system The co-ordinates of point K are $(-2, 1)$ x-co-ordinate = -2 y-co-ordinate = 1</p>		
<p><u>Homework</u> - Plot the following points on the graph paper - 1] $M(-3, 4)$ 2] $L(-5, -4)$</p>		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

the teacher gives homework written on the blackboard.

students write it down and solve it in their respective notebooks.

Plot the following points on the graph paper.

- M(-3, 4)
- L(-5, -4)
- S(3, -4)

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक
S.No

7

विषय
Subject

Mathematical

शाळा
School

V. L. Convent

विषयांश
Topic

Euclid's geomet

पाठ साहित्य
Material Aids

chalk, duster,
blackboard

पूर्व ज्ञान
Previous Knowledge

Lines, angles, pair

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Euclid's Axioms 2] Euclid's Postulates.	*] To enable students to understand the term geometry. *] students are enable to know about Euclid and his work *] To enable students to about axioms and postulates of Euclid's geometry.
Statement of Aim - Today, we		are going to

दिनांक

11/10/23

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती

Teacher's Activities

छात्र कृती

Student's Activities

Teachers ask some introductory questions

Students give appropriate answers to the asked questions.

Q.1] What is the meaning of the word 'geometry'?

Ans] The word geometry comes from greek word 'geo' meaning 'earth' and 'metrein' meaning 'to measure'.

Q.2] What is a point?

Ans] A point is that which has no part. A mark of location is a point.

Q.3] What is a line?

Ans] A line is a breadthless length.

to study Euclid's geometry

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Euclid's Axioms</u></p> <p>1] Things which are equal to the same thing are equal to one another.</p> <p>2] If equals are added to equals, the wholes are equal.</p> <p>3] If equals are subtracted from equals, the remainders are equal.</p> <p>4] Things which coincide with one another are equal to one another.</p> <p>5] The whole is always greater than the part.</p>	<p>1] <u>Knowledge</u> - students are able to know Euclid's Axioms and their importance.</p> <p>2] <u>Understanding</u> - students are able to understand Euclid's Axioms.</p> <p>3] <u>Application</u> - students are able to apply Euclid's Axioms to solve various examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

Students give appropriate answers to the asked questions

Q 1] What are Axioms?

Ans] Common notations in Mathematics which are specifically used throughout the whole Mathematics are called Axioms.

Q 2] What is a plane/
What is a surface?

Ans] A surface is that which has length and breadth only.

Q 3] What are ends of a line segment?

Ans] Ends of a line segment are points.

Q 4] How many dimensions does the following have?
1] Solid
2] Surface

Ans] A solid has three dimensions while a surface has two dimensions.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Euclid's Postulates -</u></p> <p>1] A straight line may be drawn from any one point to any other point.</p> <p>2] A terminated line can be produced indefinitely.</p> <p>3] A circle can be drawn with any centre and any radius.</p> <p>4] All right angles are equal to one another.</p> <p>5] Two distinct intersecting lines cannot be parallel to the same line.</p>	<p>1] <u>Knowledge</u> - students are able to know Euclid's Postulates and their importance.</p> <p>2] <u>Understanding</u> - students are able to understand Euclid's Postulates.</p> <p>3] <u>Application</u> - students are able to apply Euclid's Postulates to solve various examples.</p>

प्रीकरण
Specification)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

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Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

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Q] What are postulates?

Ans] Common notations in mathematics which are specifically used in geometry are called postulates.

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अरे

Q] What are parallel lines?

Ans] Lines which never intersect each other and are always at a constant distance from each other are called parallel lines.

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अरे

Q] What are perpendicular lines?

Ans] Lines which intersect each other at right angles are called perpendicular lines.

अन्-
अरे
अप्लाय

Q] What is radius of a circle?

Ans] A line from any point on the circumference of the circle to the centre of circle is called radius of a circle.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Euclid's Axioms	*] To revise the topic taught by the teacher.
	2] Euclid's Postulates	*] To evaluate the topic understood by the students.
		*] To test the knowledge gained by students regarding Euclid's geometry

करण
fication)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

Students give appropriate answers to the asked questions.

Q] What are universal truths in mathematics?

Ans] Euclid assumed certain properties which were not to be proved. These assumptions are called universal truths.

Q] What is Euclid's geometry?

Ans] Euclidean geometry is the study of plane and solid figures on the basis of axioms and theorems employed by Euclid.

Q] What is an infinity point?

Ans] An ideal mathematical point in projective geometry that preserves the magnitudes of all angles is an infinity point.

Q] Who was Alexandrian?

Ans] Alexandrian was a Greek mathematician and engineer who was active in his native city of Alexandria, Roman Egypt.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
K R O W E M O H		<ul style="list-style-type: none"> *] To utilize the free time *] To revise the topic taught *] To create the interest in the topic taught

फलक सार
Black Board Summary

Day - Monday
Date - 09/10/23

Class - IX
Sub - Mathematics
Topic - Euclid's geometry

On Roll -
Present -
Absent -

Euclid's Axioms -

Things which are equal to the same thing are equal to one another.

Euclid's Postulates -

A terminated line can be produced indefinitely



Homework - Q] If A, B, C are three points on a line, and B lies between A and C, prove that $AB + BC = AC$.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>The teacher gives some work written on the blackboard.</p> <p><u>Work -</u></p>	<p>students write it down and solve it in their respective notebooks.</p>
<p>Ex: A, B, C are three points on a line and B lies between A and C, prove that $AB + BC = AC$</p>	<p>Students write the solution in their notebooks.</p>

अभिप्राय (Remarks)

Students are able to understand the concept of points on a line and prove the given statement.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No 8
 विषय Subject Mathematics
 शाळा School V.L. Convent
 विषयांश Topic Lines and Angles
 पाठ साहित्य Material Aids Chalk, dustek, blackboard
 पूर्व ज्ञान Previous Knowledge Points, Parallel

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N	1] Angles 2] Linear pair of angles 3] Parallel lines and intersecting lines 4] Parallel lines and transversal	*] To enable students to know various types of lines and angles *] To enable students to know concept of parallel lines *] To enable students to know the concept of transversal
<div style="border: 1px solid red; padding: 5px;"> <p>Statement of Aim - Today, we are going</p> </div>		

दिनांक

Date

13/10/23

वर्ग

Class

IX

तासिका अवधी

Length of the Period

35 min

types of angles

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

students give appropriate answers to the asked questions.

Q] What is a line and what is a line segment?

Ans] A breathless length is called a line. If a line has two end points then it is called a line segment.

Q] What are collinear points?

Ans] If three or more points lie on a straight line are called collinear points.

Q] What is an angle?

Ans] When two rays originate from same endpoint, angle is formed.

to study about Lines and Angles.

दिनांक

13/10/23

Date

वर्ग

IX

Class

तासिका अवधी

35 min

Length of the Period

Types of angles

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Q] What is a line and what is a line segment?

Ans] A breadthless length is called a line. If a line has two end points then it is called a line segment.

Q] What are collinear points?

Ans] If three or more points lie on a straight line are called collinear points.

Q] What is an angle?

Ans] When two rays originate from same endpoint, angle is formed.

To study about Lines and Angles.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<u>Types of Angles</u> 1] Acute angle $0^\circ < x < 90^\circ$ 2] Right angle $x = 90^\circ$ 3] obtuse angle $90^\circ < x < 180^\circ$ 4] straight angle $x = 180^\circ$ 5] Reflex angle $180^\circ < x < 360^\circ$	1] <u>Knowledge</u> - students are able to know types and details of angles. 2] <u>Understanding</u> - students are able to understand linear pair of angles.
	<u>Linear pair of Angles</u> If sum of two adjacent angles is equal to 180° , then the angles make a linear pair $\angle a + \angle b = 180^\circ$ $\therefore \angle a$ and $\angle b$ make a linear pair	3] <u>Application</u> - students are able to apply types of angles to solve various examples

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What are two examples of obtuse and reflex angles.

Ans] Examples of obtuse angles are 112° and 177°
Examples of reflex angles are 210° and 300°

Q2] Find the measure of angle that is supplementary to 137° ?

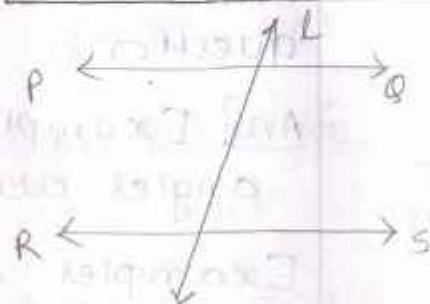
Ans] let x be the angle needed
 $x + 137^\circ = 180^\circ$
 $x = 180^\circ - 137^\circ$
 $x = 43^\circ$

Q3] What is the measure of a complete angle?

Ans] The measure of a complete angle is 360°

Q4] If $3x + 24^\circ$ and $5x - 16^\circ$ are congruent then find the value of x .

Ans] $3x + 24^\circ = 5x - 16^\circ$
 $24^\circ + 16^\circ = 5x - 3x$
 $2x = 40^\circ$
 $x = \frac{40^\circ}{2}$
 $x = 20^\circ$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specifications)
	<p><u>Parallel lines and a transversal</u></p>  <p>Any line which intersects two or more parallel lines is called a transversal.</p> <ol style="list-style-type: none"> <li>1] Pair of corresponding angles are equal <li>2] Pair of alternate angles are equal <li>3] Pair of alternate exterior and interior angles are equal <li>4] Co-interior angles are supplementary 	<ol style="list-style-type: none"> <li>1] <u>Knowledge</u> - students are able to know about parallel lines and transversal. <li>2] <u>Understanding</u> - students are able to understand angles formed by parallel lines and transversal. <li>3] <u>Application</u> - students are able to apply the knowledge to solve various examples.

5 रणे

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अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What are parallel lines?

Ans] Two lines which do not intersect each other and are always at a constant distance from each other are called parallel lines.

Q2] What are intersecting lines?

Ans] Two lines which are not parallel but intersect each other in a common point are called intersecting lines.

Q3] What are perpendicular lines?

Ans] When two lines meet or intersect at an angle of 90° , then they are perpendicular to each other.

Q4] What are the characteristics of alternate angles?

Ans] The alternate interior angles are always equal.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Types of Angles → a] acute angle b] right angle c] obtuse angle d] straight angle e] Reflex angle	*] To revise the topic taught by the teacher.
	2] Linear pair of angles	*] To evaluate the topic understood by the students.
	3] Parallel lines and intersecting lines.	*] To test the knowledge gained by students regarding lines and angles.
	4] Parallel lines and a transversal	*] To test the knowledge gained by students regarding lines and angles.

परिष्कारण (Revision)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1) What is a transversal?

Ans] Any line which intersects two or more parallel lines is called a transversal.

Q.2) Three angles at a point are 135° , 75° and x . Find the value of x .

Ans] Sum of angles at a point is 360°

$$135^\circ + 75^\circ + x = 360^\circ$$

$$210^\circ + x = 360^\circ$$

$$x = 360^\circ - 210^\circ$$

$$x = 150^\circ$$

Q.3) Define line.

Ans] A line is a figure in geometry, which has only length and no width in a two-dimensional plane and extends indefinitely.

Q.4) What are corresponding angles?

Ans] The angles formed when a transversal intersects any two parallel lines are called corresponding angles.



पाठ्याच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To revise the topic taught. *] To create interest in the topic

फलक सार
Black Board Summary

Day - Wednesday

Date - 11/10/23

Class - IX

Sub - Mathematics

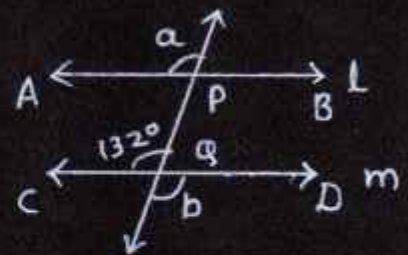
Topic - Lines and Angles

On Roll -

Present -

Absent -

Parallel lines and a transversal
 $AB \parallel CD$ i.e. $l \parallel m$
 and line t is a transversal



Homework - In the figure, $l \parallel m$ and line t intersects lines l and m at P and Q . Find the sum - ' $2a + b$ '.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

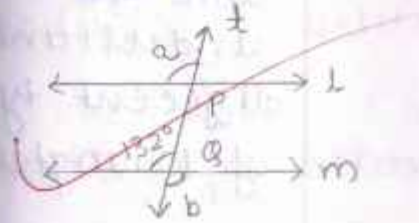
विद्यार्थी कृती (Student Activity)

The teacher gives homework written on the blackboard.

Students write it down and solve it in their respective notebooks.

Homework -

In the figure $l \parallel m$ and line t intersect lines l and m at P and Q .
Find - ' $2a+b$ '



अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 9
S.No

विषय Mathematics
Subject

शाळा V.L. Convent
School

विषयांश Triangles - Congruence
Topic

पाठ साहित्य Chalk, blackboard,
Material Aids dustet

पूर्व ज्ञान Types of triangles
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Types of Triangles 2] Congruence in triangles.	*] students are able to understand different types of triangles. *] To enable students to predict different congruence conditions *] To enable students to identify triangulat inequalities.
statement of Aim - Today, we are going to		

दिनांक 17/10/23
Date

Concepts

वर्ग IX
Class

Properties of triangle

तासिका अवधी 35 min
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some
introductory questions

Students give appropriate
answers to the asked
questions.

What is a triangle?

Ans] A polygon which
has three sides and
three angles is
called triangle.

What is an
equilateral triangle?

Ans] The triangle whose
three sides are of
equal length is called
equilateral triangle.

What is the sum
of three angles of
a triangle?

Ans] Sum of three
angles of a triangle
is always 180° .

study the topic Triangles.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] What are the types of triangles on the basis of angles?

Ans] Three types of triangles on the basis of angles are
 i] Acute angled triangle
 ii] Right angled triangle
 iii] obtuse angled triangle

Q] What are the types of triangles on the basis of sides?

Ans] Three types of triangles on the basis of sides are
 i] Equilateral triangle
 ii] Isosceles triangle
 iii] Scalene triangle.

Q] Identify the shape of triangle if in $\triangle PQR$, $\angle P = \angle Q + \angle R$.

Ans] By using angle sum property, $\angle P + \angle Q + \angle R = 180^\circ$
 $\angle P + \angle P = 180^\circ$
 $2\angle P = 180^\circ$
 $\angle P = 180^\circ / 2 = 90^\circ$

$\therefore \triangle PQR$ is right angled \triangle

Q] In $\triangle PQR$, $PQ = PR$ and $\angle Q = 70^\circ$, Find $\angle P$.

Ans] In $\triangle PQR$, $PQ = PR$
 $\therefore \angle R = \angle Q$
 $\angle P + \angle Q + \angle R = 180^\circ$
 $\angle P + 70^\circ + 70^\circ = 180^\circ$
 $\angle P + 140^\circ = 180^\circ$
 $\angle P = 180^\circ - 140^\circ$
 $\angle P = 40^\circ$

पाठ्याच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Congruence in Triangles</u> -</p> <p>Two triangles are congruent if their corresponding sides and angles are equal.</p> <p>There are five conditions to prove congruence in triangles.</p> <ol style="list-style-type: none"> 1] <u>SSS</u> (side - side - side) 2] <u>SAS</u> (side - Angle - side) 3] <u>ASA</u> (Angle - side - Angle) 4] <u>AAS</u> (Angle - Angle - side) 5] <u>RHS</u> (Right angle - hypotenuse - side) 	<ol style="list-style-type: none"> 1] <u>Knowledge</u> - students are able to know congruence conditions in triangles. 2] <u>Understanding</u> students are able to understand corresponding parts of congruent triangles. 3] <u>Application</u> - students are able to apply congruency criterion to solve various examples.

करणे

Classification

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

students give appropriate answers to the asked questions.

Q1] What can you say about angles in an isosceles triangle?

Ans] In an isosceles triangle two sides are equal. The angles opposite to equal sides are equal to one another.

Q2] Find the three equalities of the corresponding angle $\triangle ABC \cong \triangle PQR$ using SSS congruence rule

Ans] Using SSS congruency criterion, three equalities are
 $\angle A = \angle P$
 $\angle B = \angle Q$
 $\angle C = \angle R$

Q3] Determine the longest side in $\triangle PQR$ if $\angle Q = 90^\circ$

Ans] If $\angle Q = 90^\circ$, then side opposite to $\angle Q$ is PR which is hypotenuse
 \therefore The longest side of $\triangle PQR$ is PR.

Q4] Determine the measure of all the angles in an equilateral triangle.

Ans] Let each angle of equilateral triangle be x
 $x + x + x = 180^\circ$
 $3x = 180^\circ$
 $x = 180^\circ / 3$
 $x = 60^\circ$

\therefore Each angle in equilateral triangle is 60° .

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Types of Triangles → a] Acute angled b] Right angled c] Obtuse angled → d] Equilateral e] Isosceles f] Scalene 2] Congruence in Triangles → a] SSS b] SAS c] ASA d] AAS e] RHS	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students. *] To test the knowledge gained by the students regarding Triangles.

रणे

:ation)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

Students give appropriate answers to the asked questions.

Q] What can you say about sum of any two sides of a triangle w.r.t third side?

Ans] The sum of any two sides of a triangle is always greater than the third side.

Q] If $PQ = 6\text{ cm}$, $QR = 4\text{ cm}$ and $PR = 1.5\text{ cm}$, is triangle PQR possible?

Ans] $PQ = 6\text{ cm}$; $QR = 4\text{ cm}$;
 $PR = 1.5\text{ cm}$
 $QR + PR = 4 + 1.5$
 $= 5.5\text{ cm}$

which is less than $PQ = 6\text{ cm}$

$\therefore \triangle PQR$ is not possible.

Q] What is the measure of each exterior angle of an equilateral triangle?

Ans] Exterior angle
 $= 180 - \text{interior angle}$
 $= 180 - 60$
 $= 120^\circ$

\therefore Each exterior angle is 120°

Q] The sum of two angles of a triangle is equal to its third angle. Find the third angle.

Ans] In a triangle,
 $45^\circ + 45^\circ = 90^\circ$
 \therefore first angle = $45^\circ / 30^\circ$
second angle = $45^\circ / 60^\circ$
third angle = 90°

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To create interest in the taught topic *] To utilize the free time *] To understand the taught concept properly

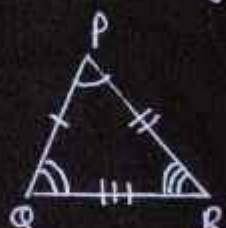
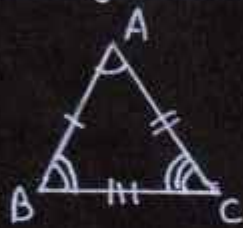
फलक सार
Black Board Summary

Day - Friday
Date - 13/10/23

Class - IX
Sub - Mathematics
Topic - Triangles

On roll -
Present -
Absent -

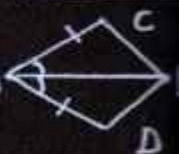
Congruence in Triangles



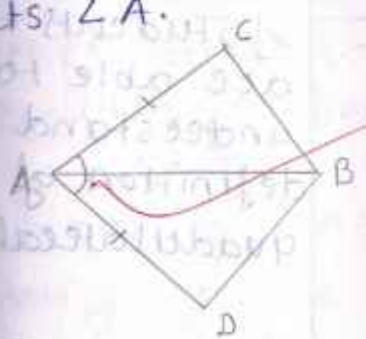
- 1] SSS - side-side-side
- 2] SAS - side-angle-side
- 3] ASA - angle-side-angle
- 4] AAS - angle-angle-side
- 5] RHS - Right angle - hypotenuse - side

Homework - In quadrilateral ABCD

AC = AD and AB bisects $\angle A$.
Show that $\triangle ABC \cong \triangle ABD$



अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teacher gives homework written on the blackboard.</p> <p>Homework - In quadrilateral ABCD, $AC = AD$. show that $\triangle ABC \cong \triangle ABD$. Also, AB bisects $\angle A$.</p> 	<p>students write it down and solve it in their respective notebooks.</p>

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 10
 विषय Subject Mathematics
 शाळा School V.L. Convent
 विषयांश Topic Quadrilaterals
 पाठ साहित्य Material Aids Chalk, Black board, Dustee
 पूर्व ज्ञान Previous Knowledge Quadrilateral basic

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
<p style="writing-mode: vertical-rl; text-orientation: mixed;">INTRODUCTION</p>	<p>1] Types of Quadrilaterals</p> <p>2] Theorems on quadrilaterals</p>	<p>*] students are able to understand definition of quadrilateral</p> <p>*] To enable students to know different types of quadrilaterals.</p> <p>*] To enable students to know theorems related to quadrilaterals.</p>
<p><u>Statement of Aim</u> - Today, we are going to</p>		

दिनांक

Date

20/10/23

वर्ग

Class

IX

तासिका अवधी

Length of the Period

35 min

theorems)

diagonals, angles

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Q1] What is the meaning of the word quadrilateral?

Ans] The word 'quad' means four and the word 'lateral' means sides.

Q2] Define 'quadrilateral'

Ans] A closed figure plane bounded by four line segments is called quadrilateral.

Q3] Give some examples of quadrilaterals

Ans] Square, Rectangle, Rhombus, Kite are some examples of quadrilaterals.

Learn about quadrilaterals.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
<p style="text-align: center;">P R E S E N T A T I O N</p>	<p style="text-align: center;"><u>Family of Quadrilaterals</u></p> <pre> graph TD A[Quadrilateral] --> B[Trapezium] B --> C[Parallelogram] C --> D[Rectangle] C --> E[Rhombus] D --> F[Square] E --> F </pre> <p>All the different types of quadrilaterals have different properties depending upon their sides, angles and diagonals.</p>	<p>1] <u>Knowledge</u> Students are able to know the family of quadrilaterals.</p> <p>2] <u>Understanding</u> Students are able to understand the classification of quadrilaterals.</p> <p>3] <u>Application</u> Students are able to use classification to solve various examples.</p>

वर्णन
(Description)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What is the name of a quadrilateral whose opposite sides are equal and all angles 90° ?

Ans] Rectangle is a quadrilateral whose opposite sides are equal and all angles are 90° .

Q2] What are the special types of parallelogram?

Ans] The special types of the parallelogram are square, rectangle and rhombus.

Q3] A rhombus with right angle will represent which type of quadrilateral?

Ans] A rhombus with right angle will become a square.

Q4] What is the sum of all the interior angles of a quadrilateral?

Ans] The sum of interior angles of a quadrilateral is 360° .

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Theorems -</u> <u>Quadrilaterals</u></p> <p>1] A diagonal of a m divides it into two congruent triangles.</p> <p>2] In a m, opposite sides are equal.</p> <p>3] If each pair of opposite sides of a quadrilateral is equal, then it is a m.</p> <p>4] In a m, opposite angles are equal.</p> <p>5] If in a quadrilateral each pair of opposite angles is equal, then it is a parallelogram.</p> <p>6] The diagonals of a m bisect each other.</p>	<p>1] <u>Knowledge</u> - students are able to know various theorems based on quadrilaterals.</p> <p>2] <u>Understanding</u> - students are able to understand proofs of all these theorems.</p> <p>3] <u>Application</u> - students are able to apply quadrilateral theorems to solve various examples.</p>

रणो
cation)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q 1] The three angles of a quadrilateral are 60° , 30° and 110° . What is the fourth angle?

Ans] We know that,

$$\angle 1 + \angle 2 + \angle 3 + \angle 4 = 360^\circ$$

$$60^\circ + 30^\circ + 110^\circ + \angle 4 = 360^\circ$$

$$\angle 4 = 360^\circ - (60^\circ + 30^\circ + 110^\circ)$$

$$= 100^\circ$$

\therefore fourth angle is 100°

Q 2] In which quadrilateral, diagonals are equal and also bisect each other at 90° ?

Ans] In square, the diagonals are equal and bisect each other at 90° .

Q 3] Find all the angles of a $||^m$, if one angle is 80° .

Ans] In a $||^m$, opposite angles are equal.

$$\therefore \angle 1 = \angle 3 = 80^\circ$$

$$\angle 2 = \angle 4 = 100^\circ$$

Q 4] Is it possible to draw a quadrilateral whose all angles are obtuse angles?

Ans] To have all obtuse angles, they will be greater than 360° . So, it is not possible for a quadrilateral to have all angles as obtuse angles.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>1] Family of Quadrilaterals</p> <p>→ a] Trapezium b] Parallelogram c] Rectangle d] Rhombus e] Square</p> <p>2] Quadrilaterals - Theorems</p>	<p>*] To revise the topic taught by the teacher.</p> <p>*] To evaluate the topic understood by the students</p> <p>*] To test the knowledge gained by students regarding quadrilaterals</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q-2] ABCD is a rhombus, $\angle ACB = 30^\circ$, then what is the measure of $\angle ADB$?

Ans] Angle $\angle A + \angle B + \angle C + \angle D = 360^\circ$

$$\angle C = \angle A = 30^\circ$$

let $\angle B = \angle D = x$

$$30 + x + 30 + x = 360^\circ$$

$$2x + 60 = 360^\circ$$

$$x = 300/2 = 150^\circ$$

Q-3] If the diagonals of a quadrilateral bisect each other, what is the name of the quadrilateral?

Ans] If the diagonals of a quadrilateral bisect each other, the quadrilateral is parallelogram.

Q-4] A quadrilateral with one pair of opposite parallel sides is called?

Ans] A quadrilateral with one pair of opposite parallel sides is called Trapezium.

Q-5] What is the name of quadrilateral in which both the diagonals are completely contained within the figure?

Ans] A quadrilateral in which both the diagonals are completely contained within a figure is called convex quadrilateral.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
K P O S E M O R H		<ul style="list-style-type: none"> *] To create interest in the topic taught *] To utilize the free time *] To understand the taught concept properly.

फलक सार

Black Board Summary

Day - Tuesday
Date - 17/10/23

Class - IX

on Roll -

Sub - Mathematics

Present -

Topic - Quadrilaterals

Absent -

Quadrilateral -

A closed figure plane bounded by four line segment is called a quadrilateral.

Types of Quadrilateral

- 1] Trapezium
- 2] Parallelogram
- 3] Rhombus
- 4] Rectangle
- 5] Square

Homework - 1] If the diagonals of a parallelogram are equal, then prove that it is a rectangle.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard

students write it down and solve in their respective notebooks

Homework-

The angles of a quadrilateral are in the ratio 5:9:13. Find all the angles of quadrilateral.

If the diagonals of a parallelogram are equal, then prove that it is a rectangle.

अभिप्राय (Remarks)



Kulbade
पर्यवेक्षकाची सही

(Sign. of Supervisor)

पाठांक 11
S.No.

विषय Mathematics
Subject

शाळा V.L. Convent
School

विषयांश Circles its parts
Topic

पाठ साहित्य Chalk, Blackboard,
Material Aids Duster

पूर्व ज्ञान Radius, Diameter,
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Parts of circle 2] circles Theorems.	*] To enable students to know various parts of circle. *] To develop thinking, reasoning and imagination among students. *] To enable students to understand applications of circles.
statement of Aim - Today, we		are going

दिनांक 25/10/23
Date

वर्ग IX
Class

तासिका अवधी 35 min
Length of the Period

theorems
Circumference, Area of circle

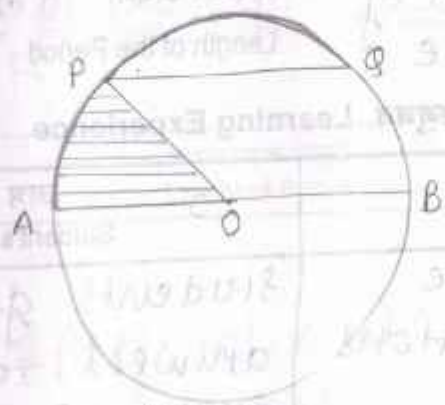
अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions.
Q1] What is a circle?	Ans] Collection of all points in a plane which are at a fixed distance from centre is called circle.
Q2] What are concentric circles?	Ans] Two or more circles having same centre but different radii are called concentric circles.
Q3] Who invented circle?	Ans] The first theorems relating to circles are attributed to Thales around 650 Bc.
to study circles	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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Parts of circle



- 1] centre - O
- 2] Radius - OA, OB
- 3] Diameter - AB
- 4] Chord - PQ
- 5] Sector - AOP
- 6] minor arc - APQ
- 7] Major arc - QBA
- 8] Segment - PQ

1] Knowledge
Students are able to know about various parts of a circle and their relationship with each other.

2] Understanding
Students are able to understand parts of circle.

3] Application
Students are able to apply knowledge of parts of circle to solve various examples.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] If the radius of a circle is 2 cm, what is its diameter?

Ans] If the radius of a circle is 2 cm, its diameter is 4 cm.

Q.2] What is the longest chord of a circle?

Ans] Diameter is the longest chord of a circle.

Q.3] How many lines of symmetry does a circle have?

Ans] A circle has infinite lines of symmetry.

Q.4] What is the circumference of a circle if the radius of the circle is 7 cm?

Ans] The circumference of a circle is $2\pi r$

$$C = 2 \times \frac{22}{7} \times 7$$

$$= 44 \text{ cm}$$

∴ Circumference of circle is 44 cm.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Circles</u></p> <p><u>Theorems-</u></p> <p>1] Equal chords of a circle subtend equal angles at the centre</p> <p>2] The perpendicular from the centre of a circle to a chord bisects the chord</p> <p>3] The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.</p> <p>4] Angles in the same segment of a circle are equal</p>	<p>1] <u>Knowledge</u> students are able to know about theorems of circle and their proofs with converse.</p> <p>2] <u>Understanding</u> students are able to understand theorems of circle and their converse.</p> <p>3] <u>Application</u> students are able to apply knowledge of circles to solve examples</p>

करणे
ification)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q-1] What is a cyclic quadrilateral?	Ans] A quadrilateral which has its all four vertices lying on a circle is called cyclic quadrilateral.
Q-2] What is the sum of either pair of opposite angle of a cyclic quadrilateral?	Ans] The sum of either pair of opposite angles of a cyclic quadrilateral is 180° .
Q-3] What is the whole arc of a circle called?	Ans] The whole arc of a circle is called circumference of a circle.
Q-4] PQ and RS are two chords such that $PQ = 10\text{ cm}$ and $RS = 24\text{ cm}$ and $PQ \parallel RS$. The distance between PQ and RS is 17 cm . Find the radius of circle.	Ans] $PQ = 10\text{ cm}$ $RS = 24\text{ cm}$ The radius of the given circle is 13 cm .

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पाठाच्या पायऱ्या (Steps of Lesson)	(अध्यापन मुद्दे) (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	1] Parts of a circle → a] centre b] Radius c] Diameter d] chord e] sector f] minor arc g] major arc h] segment 2] circle- Theorems	*] To revise the topic taught in the class *] To evaluate the knowledge gained by students *] To test the concepts understood by students regarding circles

करणे
ification

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] What can you say about angles subtended by equal chords at the center?

Ans] Equal chords of the same congruent circles subtend equal angles at the centers.

Q] If there are two separate circles drawn apart from each other, how many common points do they have?

Ans] If there are two separate circles drawn apart from each other, then they have no common points in them.

Q] What is the measure of the angle subtended by the diameter of a circle?

Ans] The angle subtended by a diameter at the center is 180° .

Q] If $AB = 12$ cm, $BC = 16$ cm and AB is perpendicular to BC , then the radius of circle passing through points A , B and C is?

Ans] $AB = 12$ cm $BC = 16$ cm
 $AC^2 = BC^2 + AB^2$
 $= 12^2 + 16^2 = 144 + 256$
 $= 400$
 $AC = 20$ cm
 \therefore diameter = 20 cm
 \therefore radius of circle is 10 cm

पाठ्याच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly

फलक सार
Black Board Summary

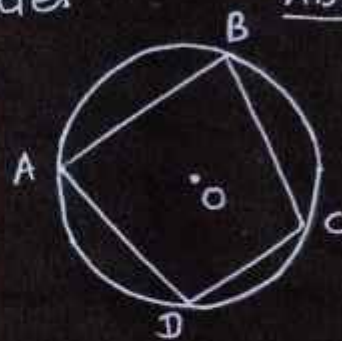
Day - Friday
Date - 20/10/23

Class - IX
Sub - Mathematics
Topic - circle

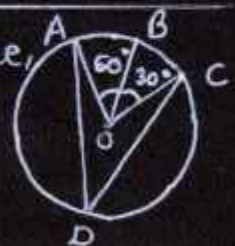
On Roll -
Present -
Absent -

cyclic quadrilateral

A quadrilateral which has its all four vertices lying on a circle is called cyclic quadrilateral.



Homework - In the given figure, find the value of $\angle ADC$



अध्ययनानुभव (Learning Experience)

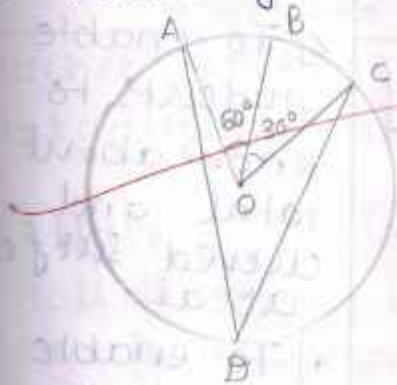
शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

The teacher gives homework written on the blackboard.

Students write it down and solve it in their respective notebooks.

In the given figure, the value of $\angle ADC$ is -



अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 12
S.No.

विषय Mathematics
Subject

शाळा V.L. Convent
School

विषयांश Surface area of
Topic

पाठ साहित्य chalk, Blackboard,
Material Aids Duster

पूर्व ज्ञान Area of rectangle
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] surface areas of → a] cube b] cuboid c] cone d] sphere	*] To enable students to know about total and curved surface areas *] To enable students to understand how surface areas are calculated *] To develop thinking, reasoning and imagination among students
Statement of Aim - Today, we		are going to

दिनांक 27/10/23
Date

वर्ग IX
Class

तासिका अवधी 35 min
Length of the Period

cube, cuboid, cone, sphere

square and circle

अध्यायानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Q-1] Name some 3D solids you have learnt till now?

Ans] Cube, cuboid, cone, sphere, hemisphere and cylinder are some 3D solids.



Q-2] What is the shape of your book?

Ans] Our book is cuboid shaped.

Q-3] How do you calculate how much paper you need to cover your textbook?

Ans] We need to find areas of two faces of textbook and one face of the binding side and add them.

Learn about surface areas of solids.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p style="text-align: center;"><u>Surface area of</u></p> <p>1] <u>Cube</u> </p> <p>TSA = 6 × area of each face</p> <p style="margin-left: 40px;">$= 6 \times (a \times a)$</p> <p style="margin-left: 40px;">$= 6a^2$ sq. units</p> <p>TSA of cube = $6a^2$</p> <p>2] <u>Cuboid</u> </p> <p>TSA = 2 × area of face 1 + 2 × area of face 2 + 2 × area of face 3</p> <p style="margin-left: 40px;">$= 2 \times lb + 2 \times bh + 2 \times lh$</p> <p style="margin-left: 40px;">$= 2(lb + bh + lh)$ sq. units or unit^2</p> <p>TSA of cuboid $= 2(lb + bh + lh)$</p>	<p>1] <u>Knowledge</u> Students are able to know about surface areas of cube and cuboid</p> <p>2] <u>Understanding</u> Students are able to understand how surface areas of cube and cuboid are calculated</p> <p>3] <u>Application</u> Students are able to apply surface area formula to solve various examples</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

Students give appropriate answers to the asked questions.

Q-1] What is surface area?

Ans] The space occupied by a two dimensional flat surface is called the surface area.

Q-2] How many types of areas surface are there?


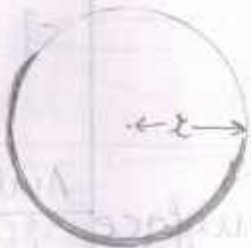
Ans] There are two types of surface areas
 1] Total surface area
 2] Curved surface area

Q-3] How do you calculate total surface area of a cube?

Ans] The side of a cube is a units. So its total surface area is equal to $6a^2$ unit².

Q-4] How do you calculate total surface area of cuboid?

Ans] A cuboid has length, breadth and height. So, its total surface area is $2(lb + bh + lh)$ unit².

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p>Surface area of</p> <p>1] <u>Cone</u></p>  <p>TSA = Area of curved surface + area of base</p> $= \frac{1}{2} \times l \times 2\pi r + \pi r^2$ $= \pi r l + \pi r^2$ $= \pi r (l + r)$ <p>2] <u>Sphere</u></p>  <p>TSA = 4 x area of a circle with radius r</p> $= 4 \times \pi r^2$ $= 4\pi r^2$ <p>TSA = $4\pi r^2$</p>	<p>1] <u>Knowledge</u> - students are able to know about surface area of cone and sphere</p> <p>2] <u>Understanding</u> students are able to understand how surface areas of cone and sphere are calculated.</p> <p>3] <u>Application</u> - students are able to apply surface area formula to solve examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>The teacher asks some questions related to the topic.</p>	<p>Students give appropriate answers to the asked questions.</p>
<p>Q.1] Calculate total surface area of a cube having side 5cm.</p>	<p>Ans] TSA of cube $= 6a^2$ $= 6 \times 5 \times 5$ $= 6 \times 25$ $= 150 \text{ cm}^2$</p>
<p>Q.2] Calculate total surface area of a cuboid whose length is 2cm, breadth is 1cm and height is 3cm.</p>	<p>∴ Total surface area of cube is 150 cm^2</p> <p>Ans] TSA of cuboid $= 2(lb + bh + hl)$ $= 2(2 \times 1 + 1 \times 3 + 2 \times 3)$ $= 2(2 + 3 + 6) = 2 \times 11$ $= 22 \text{ cm}^2$</p>
<p>Q.3] How do you calculate total surface area of cone?</p>	<p>∴ Total surface area of cuboid is 22 cm^2</p> <p>Ans] For a cone having radius 'r' and slanting height 'l', total surface area is calculated by formula $\pi r(l+r)$</p>
<p>Q.4] How do you calculate total surface area of a sphere?</p>	<p>Ans] For a sphere having radius r, total surface area is calculated by formula $4\pi r^2$</p>

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>Surface areas of</p> <p>1] <u>Cube</u> - $6a^2$</p> <p>2] <u>Cuboid</u> $2(lb + bh + lh)$</p> <p>3] <u>Cone</u> - $= \pi r(l + r)$</p> <p>4] <u>Sphere</u> $4\pi r^2$</p>	<p>*] To revise the topic taught in the class.</p> <p>*] To evaluate the knowledge gained by the students.</p> <p>*] To test the concepts understood by the students regarding surface areas of cube, cuboid, cone, sphere.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

The teacher asks some introductory questions.

Students give appropriate answers to the asked questions.

Q1] Find the total surface area of a cone whose slant height is 10 cm and base radius is 7 cm.

Ans] TSA of cone = $\pi r(l+r)$
 $= \frac{22}{7} \times 7 \times (10+7)$
 $= 22 \times 17 = 374 \text{ cm}^2$
 \therefore Total surface area of the given cone is 374 cm^2

Q2] Find the surface area of a sphere of radius 7 cm.


Ans] TSA of sphere = $4\pi r^2$
 $= 4 \times \frac{22}{7} \times 7 \times 7$
 $= 4 \times 22 \times 7 = 88 \times 7 = 616$
 Total surface area of the given sphere is 616 cm^2

Q3] Find the total surface area of a cuboid having equal length, breadth & height.

Ans] let length, breadth and height of the given cuboid be $x \text{ cm}$
 $\text{TSA} = 2(x^2 + x^2 + x^2) = 2 \times 3x^2$
 $= 6x^2 \text{ unit}^2$

Q4] What is the total surface area of a hemisphere?

Ans] Total surface area of a sphere is $4\pi r^2$
 \therefore For a hemisphere it is $2\pi r^2$
 Adding base area to it πr^2
 \therefore TSA of hemisphere = $2\pi r^2 + \pi r^2$
 $= 3\pi r^2$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time. *] To create interest in the topic taught *] To understand the taught concept properly.

फलक सार
Black Board Summary

Day - Wednesday
Date - 25/10/23

Class - IX
Sub - Mathematics
Topic - surface Area
of solids

on Roll -
Present -
Absent -

Total surface areas
of solids -

1] cube - $6a^2$

2] cuboid - $2(lb + bh + lh)$

3] Cone - $\pi r^2(1 + \frac{h}{r})$

4] sphere - $4\pi r^2$

Homework - 1] Find the total surface area of a cone whose slant height is 5 cm and base radius is 7 cm

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>The teacher gives homework written on the blackboard.</p> <p><u>Homework-</u></p> <p>1] Find total surface area of a cone whose slant height is 5 cm and base radius is 7 cm.</p> <p>2] Find the surface area of a hemisphere of radius 7 cm.</p>	<p>Students write it down and solve in their notebooks.</p>

अभिप्राय (Remarks)

(Faint handwritten notes in the Remarks section, mostly illegible due to bleed-through from the reverse side of the page.)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 13 विषय Subject Mathematics
 शाळा School V.L. convent विषयांश Topic Volume of cube,
 पाठ साहित्य Material Aids Chalk, Blackboard, Duster पूर्व ज्ञान Previous Knowledge Volume, capacity

पाठ्याच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N	volume of 1] cube 2] cuboid 3] cone	*] To enable students to know about volume of solids
	4] sphere	*] To enable students to understand volume *] To develop thinking, reasoning and imagination among students
<div style="border: 1px solid red; padding: 5px;"> statement of Aim - Today, we are going </div>		

दिनांक 31/10/23
Date

वर्ग IX
Class

तासिका अवधी 35 min
Length of the Period

Rectangular prism, Cone and Sphere
containers

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

The teacher asks some introductory questions.

Students give appropriate answers to the asked questions.

Q-1] If you go to buy a juice bottle, which bottle do you prefer big or small?

Ans] We do prefer big bottle of juice, because it contains more juice

Q-2] How do you conclude that big bottle has more juice?

Ans] We prefer big bottle of juice because big bottle has more volume.

Q-3] What is volume in your words?

Ans] Volume is the amount of space occupied by any three-dimensional solid.

to learn about volume of 3D shapes

पाठाच्या पायऱ्या
(Steps of Lesson)

अध्यापन मुद्दे
(Teaching Points)

उद्दिष्टे व स्पष्टीकरणे
(Objectives with Specification)

P
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Volume of

1] cube



Volume of cube

$$= \text{side} \times \text{side} \times \text{side}$$

$$= a \times a \times a$$

$$= a^3 \text{ cu. units or } \text{cm}^3$$

2] cuboid



Volume of cuboid

$$= \text{length} \times \text{breadth}$$

$$\times \text{height}$$

$$= l \times b \times h$$

$$\text{cu. units or } \text{cm}^3$$

1] Knowledge - students are able to know about volumes of cube and cuboid

2] Understanding - students are able to understand how formulas of volume of cube and cuboid are derived.

3] Application - students are able to apply formulas of volume to solve various examples

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] Find the volume of a cuboid whose length = 5 cm, width = 2 cm and height = 3 cm.

Ans] $l = 5 \text{ cm}; b = 2 \text{ cm}; h = 3 \text{ cm}$

$$\begin{aligned} \text{Volume of cuboid} &= l \times b \times h \\ &= 5 \times 2 \times 3 = 30 \text{ cu. cm.} \end{aligned}$$

\therefore Volume of the given cuboid is 30 cu. cm.

Q2] Find the volume of a cube whose side is 10 cm.

Ans] $a = 10 \text{ cm}$

$$\begin{aligned} \text{Volume of a cube} &= a \times a \times a \\ &= 10 \times 10 \times 10 \\ &= 1000 \text{ cu. cm.} \end{aligned}$$


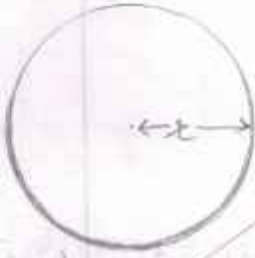
\therefore Volume of the given cube is 1000 cu. cm.

Q3] How do we define volume of cuboid?

Ans] Volume of cuboid is the amount of space occupied by the walls of cuboid in a 3D space.

Q4] Does the order of cuboid matters to calculate the volume?

Ans] No, the order of cuboid does not matter if it is kept vertically or horizontally. The volume of the shape remains same.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Volume of</u> 3] <u>cone</u></p>  <p>For a cone with perpendicular height h and base radius r.</p> <p>Volume of cone $= \frac{1}{3} \pi r^2 h$</p> <p>cu. units of unit^3</p>	<p>1] <u>Knowledge</u> - students are able to know about volume of cone and sphere.</p>
	<p>4] <u>sphere</u></p>  <p>For a sphere with radius r,</p> <p>Volume of sphere $= \frac{4}{3} \pi r^3$</p> <p>cu. units of unit^3</p>	<p>2] <u>Understanding</u> students are able to understand formula of volume of cone and sphere</p> <p>3] <u>Application</u> students are able to apply formula of volume to solve various examples</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] Find the volume of a sphere of radius 11.2 cm.

Ans] $r = 11.2 \text{ cm}$

$$\begin{aligned} \text{volume of sphere} &= \frac{4}{3} \pi r^3 \\ &= \frac{4}{3} \times \frac{22}{7} \times 11.2 \times 11.2 \times 11.2 \\ &= 5887.32 \text{ cm}^3 \end{aligned}$$

\therefore volume of given sphere is 5887.32 cm^3

Q2] What is volume of a hemisphere?

Ans] volume of a hemisphere is half of the volume of a sphere.

$$\begin{aligned} \therefore \text{volume of hemisphere} &= \frac{2}{3} \pi r^3 \end{aligned}$$

Q3] Find the volume of a cone whose radius is 6 cm and height is 7 cm.

Ans] volume of the given

$$\begin{aligned} \text{cone} &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \times \frac{22}{7} \times 6 \times 6 \times 7 \\ &= 264 \text{ cm}^3 \end{aligned}$$

Q4] The height and the slant height of a cone are 21 cm and 28 cm. Find the volume of the cone.

Ans] $l = 28 \text{ cm}$ $h = 21 \text{ cm}$

$$\begin{aligned} r &= \sqrt{l^2 - h^2} = \sqrt{28^2 - 21^2} \\ &= 7\sqrt{7} \text{ cm} \end{aligned}$$

$$\begin{aligned} \therefore \text{volume of cone} &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \times \frac{22}{7} \times 7\sqrt{7} \times 7\sqrt{7} \times 21 \\ &= 7546 \text{ cm}^3 \end{aligned}$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	Volume of 1] <u>cube</u> a^3	x] To revise the topic taught in the class
	2] <u>cube</u> id $l \times b \times h$	
	3] <u>Cone</u> $\frac{1}{3} \pi r^2 h$	x] To evaluate the knowledge gained by students.
	4] <u>sphere</u> $\frac{4}{3} \pi r^3$	x] To test the concept under- stood by the students regarding volume of 3D shapes.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] If two cubes of side 6 cm are joined face to face, then find the volume of the resulting cuboid.

Ans] If we join two cubes
 $l = 6 + 6 = 12\text{ cm}$; $b = 6\text{ cm}$
 and $h = 6\text{ cm}$
 \therefore Volume of resulting cuboid
 $= l \times b \times h = 12 \times 6 \times 6 = 432\text{ cm}^3$

Q2] Find the ratio of the total surface area and lateral surface area of a cube.

Ans] TSA of cube $= 6\text{ side}^2$
 LSA of cube $= 4\text{ side}^2$
 Ratio $= \frac{6\text{ side}^2}{4\text{ side}^2} = \frac{3}{2}$ 3:2

Q3] Find the volume of a cone whose radius is 3.5 cm and height is 12 cm .

Ans] Volume of cone
 $= \frac{1}{3} \pi r^2 h$
 $= \frac{1}{3} \times \frac{22}{7} \times 3.5 \times 3.5 \times 12$
 $= 154\text{ cm}^3$

Q4] A hemispherical bowl has a radius of 3.5 cm . How much volume of water it would contain?

Ans] Volume of hemispherical bowl
 $= \frac{2}{3} \pi r^3$
 $= \frac{2}{3} \times \frac{22}{7} \times 3.5 \times 3.5 \times 3.5$
 $= 89.8\text{ cm}^3$
 \therefore volume of the given bowl is 89.8 cm^3

पाठ्याच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time. *] To create the interest in the topic taught. *] To understand the taught concept properly.

फलक सार
Black Board Summary

Day - Friday
Date - 27/10/23

Class - IX
Sub - Mathematics
Topic - Volume of Solids

on roll -
Present -
Absent -

Volumes of Solids

1] Cube = a^3

2] Cuboid = $l \times b \times h$

3] Sphere = $\frac{4}{3} \pi r^3$

4] Hemisphere = $\frac{2}{3} \pi r^3$

5] Cylinder = $\pi r^2 h$

6] Cone = $\frac{1}{3} \pi r^2 h$

Homework - Find the volume of a sphere whose radius is i] 7 cm ii] 0.63 m

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework on blackboard

students write it down and solve in their notebooks.

Homework -
The height of a cone is 10 m. If its volume is 314 m³, find the diameter.

Find the volume of a concrete whose diameter is 1.2 m and height is 0.63 m.

अभिप्राय (Remarks)

Handwritten notes and a diagram of a cone. The diagram shows a cone with a vertical line for height and a horizontal line for diameter. The word 'SECTION' is written vertically on the right side of the diagram.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No 14

विषय Subject Mathe mathd

शाळा School V.L. Convent

विषयांश Topic Square and square

पाठ साहित्य Material Aids Chalk, Blackboard, Sultee

पूर्व ज्ञान Previous Knowledge Multiplication

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] square 2] square root	*] To enable students to know about square and square roots. *] To enable students to understand practical applications of square and square roots. *] To develop thinking, reasoning and imagination among students.
statement of Aim - Today, we are going to		

दिनांक

Date

20 / 11 / 23

वर्ग

VIIIth

Class

तासिका अवधी

35 mins

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions

Q1] How do you calculate area of a square?

Ans] Area of square is side \times side where side means the length of a side.

Q2] What is the square of 10?

Ans] The square of 10 is $10 \times 10 = 100$.

Q3] What is the square root of 100?

Ans] 100 can be expressed as product of 10×10 . So, square root of 100 is 10.

study about square and square roots

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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P
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N

Square
If a natural number m can be expressed as n^2 where n is also a natural number, then m is a square number.

Number	Square
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81
10	100
11	121
12	144
13	169
14	196
15	225

1] Knowledge - students are able to know about square numbers.

2] Understanding - students are able to understand how squares are calculated.

3] Application - students are able to apply calculation of squares to real life situations.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] What is a square of a number?

Ans] A square is a number that is obtained by multiplying a number by itself.

Q.2] Give some examples of squares.

Ans] The squares of 1, 2 and 3 are 1, 4 and 9 respectively.

Q.3] What are triangular numbers?

Ans] Triangular numbers are the numbers whose dot patterns can be arranged as triangles.

Q.4] Find the square of 23 without actual multiplication.

Ans] $23 = 20 + 3$
 $23^2 = (20 + 3)^2$
 $= 20^2 + 2 \times 20 \times 3 + 3^2$
 $= 400 + 120 + 9$
 $= 529$
 \therefore Square of 23 is 529.

पाठ्याचा पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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Square Roots -
 Square root is an inverse operation of square.
 Positive square root of a number is denoted by the symbol $\sqrt{\quad}$.

Number	Square root
1	$\sqrt{1} = 1$
4	$\sqrt{4} = 2$
9	$\sqrt{9} = 3$
16	$\sqrt{16} = 4$
25	$\sqrt{25} = 5$
36	$\sqrt{36} = 6$
49	$\sqrt{49} = 7$
64	$\sqrt{64} = 8$
81	$\sqrt{81} = 9$
100	$\sqrt{100} = 10$
121	$\sqrt{121} = 11$
144	$\sqrt{144} = 12$
169	$\sqrt{169} = 13$

1] Knowledge -
 students are able to know about square roots.

2] Understanding
 students are able to understand to calculate square roots

3] Application
 students are able to apply the learned concept in real life situations.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What is a square root?

Ans] A square root is the inverse operation of squaring. It is the number that when multiplied by it self gives the original number.

Q2] Give some examples of square roots.

Ans] Some common examples of square roots are
 $\sqrt{1} = 1$, $\sqrt{4} = 2$; $\sqrt{9} = 3$
 and $\sqrt{16} = 4$

Q3] Find the least number that must be subtracted from 5607 to get a perfect square.

Ans] 74^2 is less than 5607 by 131. So,
 $5607 - 131 = 5476$
 $\sqrt{5476} = 74$
 $\therefore 131$ should be subtracted.

Q4] Find the square root of 64 by prime factorisation.

Ans]

2	64	$64 = 2 \times 2$ $\times 2 \times 2$ $\times 2 \times 2$ $\sqrt{64} = 2 \times 2 \times 2$ $= 8$
2	32	
2	16	
2	8	
2	4	
2	2	
	1	

$\therefore 8$ is the square root of 64.

पाठ्याचा पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Square	*] To revise the topic taught in the class.
	2] Square roots	
	3] Triangular numbers	
	4] Pythagorean triplet	
	5] Prime factorisation	*] To evaluate the knowledge gained by students.
	6] Applications of square and square roots	*] To test the concept understood by the students regarding square and square roots.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What are practical applications of squares?

Ans] The practical applications of squares are measuring area and calculating distances.

Q2] What are the practical applications of square roots?

Ans] The practical applications of square roots are calculating side lengths of squares and finding distances.

Q3] Square numbers end with which digits?

Ans] All square numbers can only have 0, 1, 4, 5, 6, 9 at its unit places.

Q4] What is a Pythagorean triplet?

Ans] For any natural number m , if $(2m)^2 + (m^2 - 1)^2 = (m^2 + 1)^2$ so, $2m$, $m^2 - 1$ and $m^2 + 1$ forms a Pythagorean triplet. For ex - 6, 8 and 10 is a Pythagorean triplet.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time. *] To create interest in the topic taught. *] To understand the taught concept properly.

फलक सार
Black Board Summary

Day - Tuesday
Date - 31/10/23

Class - IX
Sub - Mathematical
Topic - Square and square root

on roll -
Present -
Absent -

Squares

1	1
2	4
3	9
4	16

5	25
6	36
7	49
8	64

2	100
2	50
5	25
5	5
	1

$$\sqrt{100} = 2 \times 5 = 10$$

$$100 = 2 \times 2 \times 5 \times 5$$

Homework - Area of a square plot is 2304 m^2 . Find the side of square plot.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher gives homework on blackboard Homework-	Students write it down and solve it in their notebook.
The area of a square is 2304 m^2 . Find the side of square plot.	
What will be the last digit of the squares of the following numbers.	
i) 272 ii) 799	

अभिप्राय (Remarks)

The students are able to solve the problems given in the homework. They are able to find the side of the square plot and the last digit of the squares of the given numbers.

पर्यवेक्षकाची सही
 (Sign. of Supervisor)

पाठानंक S.No. 15 विषय Mathematics
 शाळा V.L. Convent विषयांश Cube and cube
 पाठ साहित्य Chalk, Blackboard, Topic
 Material Aids Duster पूर्व ज्ञान Multiplication
 Previous Knowledge

पाठानच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Cube 2] Cube Roots	*] To develop thinking, reason and imagination among students *] To enable students to understand the concept of cube and cube roots *] To enable students to know about applications of cube and cube roots
<u>statement of Aim</u> - Today, we		are going to

दिनांक 22/11/23
Date

वर्ग VIIIth
Class

तासिका अवधी 35 mins
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

students give appropriate answers to the asked questions.

Q1] What is volume of a cube of side a unit?

Ans] Volume of a cube is a^3 unit³ or a^3 units.

Q2] What is the cube of 4?

Ans] The cube of 4 is $4 \times 4 \times 4 = 64$

Q3] What is the cube root of 64?

Ans] The cube root of 64 is $4^3 = 64$ i.e. 4.

study about cube and cube roots

पाठच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)																														
P R E S E N T A T I O N	<p><u>Cubes</u></p> <p>A perfect cube or cube number is obtained when a number is multiplied by taking it three times.</p> <table border="1"> <thead> <tr> <th>Number</th> <th>Cube</th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td></tr> <tr><td>2</td><td>8</td></tr> <tr><td>3</td><td>27</td></tr> <tr><td>4</td><td>64</td></tr> <tr><td>5</td><td>125</td></tr> <tr><td>6</td><td>216</td></tr> <tr><td>7</td><td>343</td></tr> <tr><td>8</td><td>512</td></tr> <tr><td>9</td><td>729</td></tr> <tr><td>10</td><td>1000</td></tr> <tr><td>11</td><td>1331</td></tr> <tr><td>12</td><td>1728</td></tr> <tr><td>13</td><td>2179</td></tr> <tr><td>14</td><td>2744</td></tr> </tbody> </table>	Number	Cube	1	1	2	8	3	27	4	64	5	125	6	216	7	343	8	512	9	729	10	1000	11	1331	12	1728	13	2179	14	2744	<p>1] <u>Knowledge</u> students are able to know about cubes of the numbers.</p> <p>2] <u>Understanding</u> students are able to understand how cubes of numbers are calculated.</p> <p>3] <u>Application</u> students are able to apply knowledge of cubes to solve problems in real life situations.</p>
Number	Cube																															
1	1																															
2	8																															
3	27																															
4	64																															
5	125																															
6	216																															
7	343																															
8	512																															
9	729																															
10	1000																															
11	1331																															
12	1728																															
13	2179																															
14	2744																															

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What is cube of a number?

Ans] The cube of a number is the number raised to the power of three.

Q2] Give an example of cube of a number?

Ans] The cube of 2 is $2 \times 2 \times 2 = 8$

Q3] What are the cubes of odd numbers and cubes of negative numbers?

Ans] The cubes of odd numbers is odd and cubes of negative numbers is negative.

Q4] Find the cubes of

Ans] The cubes of given numbers are

a] 3

a] $3^3 = 3 \times 3 \times 3 = 27$

b] 5

b] $5^3 = 5 \times 5 \times 5 = 125$

c] -2

c] $(-2)^3 = -2 \times -2 \times -2 = -8$

पाठ्याचा पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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Cube Roots

Cube root is the inverse operation of finding cube.

The symbol $\sqrt[3]{\quad}$ denotes cube root

Numbers	Cube Roots
1	$\sqrt[3]{1} = 1$
8	$\sqrt[3]{8} = 2$
27	$\sqrt[3]{27} = 3$
64	$\sqrt[3]{64} = 4$
125	$\sqrt[3]{125} = 5$
216	$\sqrt[3]{216} = 6$
343	$\sqrt[3]{343} = 7$
512	$\sqrt[3]{512} = 8$
729	$\sqrt[3]{729} = 9$
1000	$\sqrt[3]{1000} = 10$

1] Knowledge
Students are able to know about cube roots of the numbers.

2] Understanding
Students are able to understand how cube roots of numbers are calculated.

3] Application
Students are able to apply knowledge of cube roots to solve problems in daily life situations.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N		
	1] cubes	*] To revise the topic taught in the class.
	2] cube roots	
	3] Factorisation	
	4] Estimation	
		*] To evaluate the knowledge gained by students
		*] To test the concepts understood by the students regarding cube and cube roots

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

Students give appropriate answers to the asked questions.

Q1] What is the real life application of cube?

Ans] Cutting a vegetable into square sided shapes or in the shape of dice.

Q2] What is a cube?

Ans] In terms of geometry, a cube is a three-dimensional square cut from something.

Q3] What is the real life application of cube roots?

Ans] Cube roots are used in carpentry, engineering, designing buildings, flooring and technology.

Q4] Is 243 a perfect cube?

Ans] $243 = 3 \times 3 \times 3 \times 3 \times 3$
In the above factorisation 3×3 remains ungrouped in the triplets.
 \therefore 243 is not a perfect cube.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly

फलक सार

Black Board Summary

Day - Wednesday

Date - 22/11/23

Class - IX

Sub - Mathematics

Topic - Cube and cube roots

on roll -

Present -

Absent -

1	1
2	8
3	27
4	64
5	125

6	216
7	343
8	512
9	729
10	1000

$$\sqrt[3]{1000} = 10$$

2	1000
2	500
2	250
5	125
5	25
5	5

Homework - Ketaki makes a cuboid of sides 5 cm, 2 cm, 5 cm. How many such cuboids will she need to form a cube?

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

The teacher gives homework written on blackboard -
Homework -

students write it down and solve it in their notebooks.

1] Ketaki makes a cuboid of sides 5cm, 2cm, 5cm. How many such cuboids will she need to form a cube?

2] Which of the following are perfect cubes?
 i] 400 ii] 9000

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
 (Sign. of Supervisor)

पाठांक
S.No. 16

विषय
Subject Mathematics

शाळा
School V.L. Convent

विषयांश
Topic Direct and Inverse

पाठ साहित्य
Material Aids Chalk, Blackboard,
Duster

पूर्व ज्ञान
Previous Knowledge Multiplication, Division

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Direct Proportions. 2] Inverse Proportions	*] To develop thinking, reasoning and imagination among students. *] To enable students to understand direct and inverse proportions. *] To enable students to know about practical applications of proportions.
statement of Aim - Today, we are going to		

दिनांक

24/11/23

Date

वर्ग

VIIIth

Class

तासिका अवधी

35 mins

Length of the Period

and formation of ratios

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

students give appropriate answers to the asked questions

Q1] If you park your car at a parking where parking charges are ₹60 per hour. How much will you pay for two hours?

Ans] The charges of parking are ₹ 60 for one hour so, for two hours, charges will be $60 \times 2 = ₹120$

Q2] If you buy a pen, how can you explain the costing?

Ans] If we buy more pens, we need more money.

Q3] How can you explain number of workers and number of days?

Ans] The more number of workers will require less number of days to complete the work

Study about Direct and

Inverse Proportions.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Direct Proportion</u> When the relationship between two quantities is such that if we increase one, the other will also increase and if we decrease one, the other quantity will also decrease.</p> <p><u>Example</u> - The number of food items bought is directly proportional to the total money spent.</p> <p><u>Formula</u> If $y \propto x$ $y = kx$ for a constant k</p>	<p>1) <u>Knowledge</u> - Students are able to know about direct proportion.</p> <p>2) <u>Understanding</u> - Students are able to understand how direct proportions are calculated.</p> <p>3) <u>Application</u> - Students are able to apply formulas of direct proportion to various examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions about the topic.

Students give appropriate answers to the asked questions.

1] Explain direct proportion in terms of x and y .

Ans] In direct proportion, y increases as x increases and y decreases as x decreases.

2] If a man earns ₹ 805 per week, how much will she earn in 16 days.

Ans] 1 week = 7 days
 Income per day = $\frac{805}{7}$
 $= ₹ 115$
 \therefore Income in 16 days

3] If two cardboard boxes occupy 500 cm^3 of space, then find the space occupied by one cardboard box?

Ans] 2 boxes occupy 500 cm^3 of space
 \therefore space for one box
 $= 500/2 = 250 \text{ cm}^3$

4] How the graph of direct proportion is denoted?

Ans] The graph of direct proportion is a straight line with an upward slope.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	<p><u>Inverse Proportions</u></p> <p>When two quantities are related to each other inversely i.e. when an increase in one quantity brings a decrease in other and vice versa then they are said to be in inverse proportion.</p> <p><u>Example -</u></p> <p>More number of workers will complete the given work in less number of days.</p> <p><u>Formula</u></p> $y \propto \frac{1}{x}$ $y = k \times \frac{1}{x}$ $y = \frac{k}{x}$ <p>for a constant k.</p>	<p>1] <u>Knowledge</u> - students are able to know about inverse proportion.</p> <p>2] <u>Understanding</u> - students are able to understand how inverse proportions are calculated.</p> <p>3] <u>Application</u> - students are able to apply formulas of inverse proportion to solve various examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Explain inverse proportion in terms of x and y .

Ans] In inverse proportion y decreases as x increases and y increases as x decreases.

Suppose x and y are in inverse proportion.
If $y = 12$ then $x = 4$.
Find the value of y when $x = 8$.

Ans] $x \propto \frac{1}{y} \Rightarrow x = \frac{k}{y}$

$$4 = \frac{k}{12} \Rightarrow k = 48$$

$$\text{also } 8 = \frac{48}{y} \Rightarrow y = \frac{48}{8}$$

$$y = 6.$$

If 35 men can do the work in 8 days, in how many days can 20 men complete the same work?

Ans] 1 man can do the work in 35×8 days
 \therefore for 20 men $\frac{35 \times 8}{20}$
 $= 14$ days will be required.

How the graph of Inverse proportion is denoted?

Ans] The graph of inverse proportion is usually a curve that bends towards the origin forming a shape of hyperbola.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p>1] Direct proportion</p> <ul style="list-style-type: none"> - Definition - Example - Formula <p>2] Inverse proportion</p> <ul style="list-style-type: none"> - Definition - Example - Formula 	<p>*] To revise the topic taught in the class</p> <p>*] To evaluate the knowledge gained by students.</p> <p>*] To test the concept understood by the students regarding direct and inverse proportion</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Find the value of x if a and b are in inverse proportion

Ans] $a = \frac{k}{b} \Rightarrow k = ab$
 $k = 12 \times 30 = 360$
 $x = \frac{360}{5} = 72$

a	12	x
b	30	5

If P is directly proportional to Q^2 , then find a formula for P in terms of Q .

Ans] As P is directly proportional to Q^2 ,
 $P \propto Q^2$
 $P = kQ^2$ is the formula required.

Give an example of direct proportion.

Ans] The cost of a banana is 70p. As the number of bananas increases, so does the cost increase.

Give an example of inverse proportion.

Ans] It takes 1 worker 9 hours to dig a hole. As the number of workers increases, the number of hours to dig the same hole decreases.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
K R O S E M O R H		<ul style="list-style-type: none"> *] To revise the topic taught *] To utilize free time *] To create interest in the topic taught

फलक सार
Black Board Summary

Day - Friday
Date - 24/11/23

Class - IX
Sub - Mathematics
Topic - Direct and Inverse Proportions

On Roll -
Present -
Absent -

Direct Proportion

$$y \propto x$$

$$y = kx$$

where k is constant

Inverse Proportion

$$y \propto 1/x$$

$$y = k/x$$

where k is constant

Homework - An electric pole 14m casts a shadow of 10m. Find the height of a tree that casts a shadow of 15m under same situation.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework on the board.	students write it down and solve in their notebooks.
An electric pole, 14 m casts a shadow 10 m. Find the height of a tree that casts a shadow of 15 m. <u>See similar situations.</u>	

अभिप्राय (Remarks)

<p>Student knows how to solve similar situations.</p>	<p>Good</p>
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पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक
S.No 17

विषय
Subject Mathematics

शाळा
School V.L. Convent

विषयांश
Topic Comparing Quantities

पाठ साहित्य
Material Aids Chalk, Blackboard,
Auster

पूर्व ज्ञान
Previous Knowledge Ratios, Percentages

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among students*] To enable students to understand Quantities*] To enable students to know about how different quantities are compared.
statement of Aim - Today, we are going		

दिनांक 25/11/23
Date

वर्ग VIII th
Class

तासिका अवधी 35 mins
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Q1] What is the use of ratios?

Ans] Ratios are very commonly used for comparing two or more quantities.

Q2] In a picnic, 60% of the total number of students are girls. Find the number of girls if total students are 18.

Ans] Let x be 60% of girls
$$\frac{60}{100} \times x = 18$$
$$x = \frac{18 \times 100}{60} = 30 \text{ students.}$$

Q3] If in a class, there are 18 girls and 12 boys, find the ratio of girls to boys.

Ans] The number of girls is 18 and those of boys is 12. Their ratio is 18/12
3:2 read as 3 is to 2.

to study about comparing quantities

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	<p><u>Ratio and Percentages</u></p> <p>A basket has two types of fruits, say 20 apples and 5 oranges. Then the ratio of number of oranges to apples is $5:20$ or $1:4$</p> <p>There are 5 oranges out of 25 fruits</p> <p>% of oranges $= \frac{5}{25} \times 100 = 20\%$</p> <p>$\% \text{ of oranges} = 20\%$</p> <p>Similarly,</p> <p>$\% \text{ of apples} = 80\%$</p>	<p>1] <u>Knowledge</u> students are able to know about ratio and percentages</p> <p>2] <u>Understanding</u> students are able to understand how ratios and percentages are calculated</p> <p>3] <u>Application</u> students are able to apply</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Find the ratio of 50 paise to ₹ 5.

Students give appropriate answers to the asked questions.

Ans] since ₹ 1 = 100 p

$$\frac{50p}{₹ 5} = \frac{50}{5 \times 100} = \frac{50}{500} = \frac{1}{10}$$

∴ The required ratio is 1:10

72% of 25 students are interested in maths. How many are not interested in maths?

Ans] % of students who are not good in maths = $100 - 72 = 28\%$

∴ number of these students

$$\frac{28}{100} \times 25 = 7$$

∴ 7 students are not good in maths

Find the ratio of 5 m to 10 km.

Ans] since 10 km = 10000 m

$$\frac{5}{10000} = \frac{1}{2000}$$

∴ The required ratio is 1:2000

Convert the ratio 3:4 to percentage.

Ans] $\frac{3}{4} \times 100$

$$= 3 \times 25 = 75\%$$

∴ The required percentage is 75%

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Discount</u> Discount is the reduction given on the marked price (MP) of the article.</p> $\text{Discount} = \text{MP} - \text{SP}$ <p><u>Profit</u> $\text{SP} - \text{CP} = \text{Profit}$</p> $\% \text{ Profit} = \frac{\text{Profit}}{\text{CP}} \times 100$ <p><u>Loss</u> $\text{Loss} = \text{CP} - \text{SP}$</p> $\% \text{ Loss} = \frac{\text{Loss}}{\text{CP}} \times 100$	<p>1] <u>Knowledge</u> Students are able to know about discount, profit and loss values</p> <p>2] <u>Understanding</u> Students are able to understand about calculation of discount, profit and loss</p> <p>3] <u>Application</u> Students are able to apply formulae of profit and loss in real life examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

Students give appropriate answers to the asked questions.

Q] An item marked at ₹ 840 is sold for ₹ 714. What is the discount and % discount?

Ans] Discount = MP - SP
 $= 840 - 714$
 $= ₹ 126$
 $\therefore \% \text{ discount} = \frac{126}{840} \times 100$
 $= 15\%$

Q] You bill in a shop ₹ 580 and the shopkeeper gives 15% discount. What is the amount to be paid?

Ans] 15% of 580 = $\frac{15}{100} \times 580$
 $= ₹ 87$
 $\therefore 580 - 87 = ₹ 493$
 $\therefore ₹ 493$ is the bill to be paid

Q] By selling 100 books, a shopkeeper gains the SP of 20 books. What is his gain percentage?

Ans] Let SP of one book be ₹ 1 and SP of 100 books be ₹ 100
 gain = SP of 20 books = ₹ 20
 $CP = SP - \text{gain} = 100 - 20$
 $= ₹ 80$
 $\text{gain \%} = \frac{20}{80} \times 100 = 25\%$

Q] What is overhead expense?

Ans] Additional expenses on transportation, rent, repair etc are included in the original CP.
 $CP = \text{original price} + \text{overhead expenses.}$

पाठच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Ratio and Percentages 2] Discount 3] Profit 4] Loss	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by students. *] To test the concept understood by the students regarding comparing quantities.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q2] Find the ratio of speed of cycle 15 kmph to the speed of a scooter 30 kmph.

Ans] Ratio of speed of cycle to the speed of scooter
 $= \frac{15}{30} = \frac{1}{2} = 1:2$

∴ The required ratio is 1:2

Q3] If the marked price of a book is ₹50 and ₹10 discount is given. What is % discount?

Ans] Discount % = $\frac{10}{50} \times 100$

= 20%

∴ Percentage discount is 20%

Q3] If CP of a fridge is ₹10,500 and SP is ₹11,500, then find the profit.

Ans] CP = ₹10,500

SP = ₹11,500

Profit = 11500 - 10500
 = ₹1000

∴ The required profit is ₹1000

Q4] A student bought a bag for ₹350 and sold it for ₹400. Find the profit %.

Ans] CP = ₹350 SP = ₹400

profit = 400 - 350 = ₹50

% profit = $\frac{50}{350} \times 100$

= 14.28%

∴ The percentage profit is 14.28%

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To revise the topic taught *] To utilize the free time *] To create interest in the topic taught.

फलक सार
Black Board Summary

Date - 25/11/23 Class - IX on roll -
Day - Friday Sub - Mathematics Present -
Topic - Comparing Quantities absent -

Discount = MP - SP
MP -- marked price
SP -- selling price
CP -- cost price

% profit = $\frac{\text{Profit}}{\text{CP}} \times 100$
% loss = $\frac{\text{Loss}}{\text{CP}} \times 100$

Homework - 1] Convert the ratio 2:3 to %
2] A shopkeeper bought two TV sets at ₹1000 each. He sold one at a profit of 10% and another at a loss of 10%. Find overall profit or loss.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework on the blackboard.

Students write it down and solve it in their notebooks.

Convert the ratio 2:3 to percentage.
A shopkeeper bought 10 TV sets at ₹ 10000. He sold one at a profit of 10% and other 9 at a loss of 10%. Find overall profit or loss.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 18
 S.No. _____
 विषय Mathematics
 Subject _____
 शाळा V.L-convent
 School _____
 विषयांश Linear Equation in one variable
 Topic _____
 पाठ साहित्य Chalk, Dustek, Blackboard
 Material Aids _____
 पूर्व ज्ञान Equalities, expe
 Previous Knowledge _____

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N	1] Linear equation in one variable 2] solution of linear equation in one variable	*] To develop thinking, reasoning and imagination among students *] To enable students to understand variables and their use. *] To enable students to know about linear equation in one variable.
statement	of Aim - Today, we	are going to

दिनांक

Date

21/12/23

variable

वर्ग

Class

VIII

variables

तासिका अवधी

Length of the Period

35 mins

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activitiesछात्र कृती
Student's Activities

Teachers ask some introductory questions

Let the cost of a pen be ₹ x . Cost of a book is equal to two pens. How will you form equation?

Age of mother is two times her child. How will you form equation?

I have some candies. I gave you two candies. Represent this in the equation.

Students give appropriate answers to the asked questions.

Ans] cost of one pen = ₹ x
Cost of a book
= 2 x cost of pen
= 2 x = 2 x

Ans] Let age of the child = y years
Age of mother = 2 x age of child
= 2 y

Ans] Let I have x candies
∴ The equation for this relationship is
 $x - 2$

study about Linear Equation in one variable.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Linear Equation in one variable</u></p> <p>An equation which is expressed in the form of $ax + b = 0$ where, a and b are two integers and x is a variable.</p> <p>It has only one solution.</p> <p><u>Examples -</u></p> <p>1] $3x = 1$ 2] $22x - 1 = 0$ 3] $4x + 9 = 0$</p> <p><u>standard form -</u></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">$ax + b = 0$</div>	<p>1] <u>Knowledge</u> Students are able to know about parts of linear equation and its standard form</p> <p>2] <u>Understanding</u> Students are able to understand how equations are formed</p> <p>3] <u>Application</u> Students are able to apply knowledge to solve equations in real situations</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q. How many solutions does a linear equation in one variable have?

Ans] Every linear equation in one variable has one and unique solution.

Q. What is the formula of linear equation in one variable?

Ans] The formula of the standard form of an equation having only one variable is given as $ax + b = 0$.

Q. Form a linear equation for the sum of two numbers is 95. If one exceeds the other by 15.

Ans] Let one number be x . Then the other number becomes $x + 15$. According to the question, $x + x + 15 = 95$
 $2x + 15 = 95$

Q. Three consecutive integers add up to 51. What are these integers?

Ans] Let consecutive integers be $x, x + 1, x + 2$. According to the question, $x + x + 1 + x + 2 = 51$

$$3x + 3 = 51$$

$$3x = 51 - 3$$

$$3x = 48$$

$$x = 16$$

16, 17, 18. are the numbers

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Solving Linear Equation in one variable</u></p> <p>For solving an equation in one variable, following steps are followed.</p> <ol style="list-style-type: none"> 1] Using LCM, clear the fractions if any 2] Simplify both sides of the equation 3] Isolate the variable 4] Verify your answer <p><u>Ex</u> $\Rightarrow 5x - 9 = -3x + 19$ $5x + 3x = 19 + 9$ $8x = 28$ $x = 28/8$ $x = 14/4$ $x = 7/2$</p>	<ol style="list-style-type: none"> 1] <u>Knowledge</u> Students are able to know how linear equations in one variable are solved. 2] <u>Understanding</u> Students are able to understand solutions of linear equation in one variable. 3] <u>Application</u> Students are able to apply knowledge to solve problems in real life examples.

$21 = x$

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

solve: $2x - 4 = 0$

solve: $\frac{x}{5} = 10$

solve $\frac{5x}{3} + \frac{2}{5} = 1$

$15 \times \frac{5x}{3} + 15 \times \frac{2}{5} = 15$

$25x + 6 = 15$

What are applications of Linear equations in real life?

Students give appropriate answers to the asked questions

Ans] $2x - 4 = 0$

$2x = 4$

$x = 4/2$

$x = 2$

Ans] $\frac{x}{5} = 10$

$x = 10 \times 5$

$x = 50$

Ans] LCM of 3 and 5 is 15

$25x + 6 = 15$

$25x = 15 - 6$

$25x = 9$

$x = \frac{9}{25}$

- Ans] 1] Finding unknown age
 2] Finding unknown angles in geometry
 3] For calculation of speed, distance or time
 4] Solving problems based on force and pressure

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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1] Linear equation in one variable

2] Examples

3] Standard Form

4] Solving Linear Equation in one variable

5] steps of solving linear equation in one variable

*] To revise the topic taught in the class.

*] To evaluate the knowledge gained by the students

*] To test the concept understood by the students regarding linear equation in one variable

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

What is a linear equation?

What is a linear equation with one variable?

Students give appropriate answers to the asked questions.

Ans] A linear equation is an algebraic equation in which each term is either a constant or the product of constant and a variable $ax+b=0$

Ans] A linear equation with one variable and degree one is called a linear equation in one variable.

$$ex - 3x + 5 = 0$$

3] solve $12m - 10 = 6$

Ans] $12m - 10 = 6$
 $12m = 6 + 10$
 $12m = 16$
 $m = \frac{16}{12}$

$m = 4/3$

6] Fifteen years from now Ravi's age will be four times his present age. What is Ravi's present age?

Ans] let x be Ravi's present age
 $x + 15 = 4x$
 $15 = 4x - x$
 $15 = 3x$
 $x = 15/3$
 $x = 5$

∴ present age of Ravi is 5 years

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly.

फलक सार
Black Board Summary

<u>Day</u> - Tuesday	<u>Class</u> - IX	on roll -
<u>Date</u> - 21/12/23	<u>sub</u> - Mathematics	Present -
	<u>Topic</u> - Linear Equations in one variable	absent -

Linear Equation in one variable $6x = 12$ $x = \frac{12}{6}$ $x = 2$	$10x = 100$ $x = \frac{100}{10}$ $x = 10$
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Homework - 1] Three consecutive integers are such that when they are taken in increasing order and multiplied by 2, 3, 4 respectively add up to 74. Find these numbers.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard
Homework-

Students write it down and solve it in their notebooks

3] Three consecutive integers are such that when they are taken in increasing order and multiplied by 2, 3 and 4 respectively, they add up to 74. Find these numbers.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठक 19
S.No

विषय Mathematic
Subject

शाळा V.L. Convent
School

विषयांश Linear equation
Topic

पाठ साहित्य Chalk, Blackboard
Material Aids Dustec

पूर्व ज्ञान Equations, expe
Previous Knowledge

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H N H R O O O O H H O N		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among students*] To enable students to understand linear equations in two variables*] To enable students to know about linear equation in two variables
<u>Statement of Aim</u> - Today we are going		

दिनांक

Date

22/12/23

वर्ग

Class

IXth

तासिका अवधी

Length of the Period

35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activitiesछात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Let the cost of pen be x
cost of a book be $₹y$.
cost of a book is equal
to two pens. Denote
with an equation.

Ans] cost of one pen = $₹x$
cost of a book = $₹y$

∴ Equation

$$y = 2x \Rightarrow \underline{2x - y = 0}$$

Age of mother is
two times of her child.
How will you form
equation?

Ans] Let age of child = x years

Age of mother = y years

$$\text{Equation} = y = 2x \Rightarrow \underline{2x - y = 0}$$

I am thirty years
old. You are x years
younger than me.
Denote the relationship
of variables.

Ans] Age of our teacher

= 30 years

we are x years younger

Relationship in equation

$$\text{is } \underline{30 - x}$$

study Linear Equation in Two variables

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Linear Equation in Two variables</u></p> <p>An equation is said to be linear equation in two variables if it is written in the form of $ax + by + c = 0$ where a, b, c are real numbers and the coefficients of x and y i.e. a and b respectively are not equal to zero.</p> <p><u>Examples</u></p> <ol style="list-style-type: none"> 1] $3x - 6y = -13$ 2] $2x + 5y = 20$ 3] $3x + 6y = 12$ <p><u>Standard Form</u></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $ax + by + c = 0$ </div>	<ol style="list-style-type: none"> 1] <u>Knowledge</u> - students are able to know about linear equations in two variables 2] <u>Understanding</u> - students are able to understand how linear equations in two variables are derived and solved 3] <u>Application</u> - students are able to apply knowledge to solve linear equations in practical questions

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q-1] What are the coefficients of the equation $3x - 6y = -13$?

Ans] The coefficient of x is 3 and the coefficient of y is -6.

Q-2] What is the constant of the equation $3x - 6y = -13$?

Ans] The constant of the equation $3x - 6y = -13$ is -13.

Q-3] How to solve linear equation in two variables?

Ans] For a system of linear equation in two variables, we can find the solutions by the elimination method.

Q-4] How many solutions are there for linear equations in two variables?

Ans] For linear equation in two variables, there are infinitely many solutions.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Solving linear Equations in Two Variables</u></p> <p>consider example $5x + 3y = 30$ let value of $y = 0$ then, $5x + 3(0) = 30$ $5x = 30$ $x = 30/5$ $x = 6$ solution is $(6, 0)$ let value of $x = 0$ then, $5(0) + 3y = 30$ $3y = 30$ $y = 30/3$ $y = 10$ solution is $(0, 10)$</p>	<p>1] <u>Knowledge</u> students are able to know about solutions of linear equations in two variables.</p> <p>2] <u>Understanding</u> students are able to understand how to solve linear equations in two variables.</p> <p>3] <u>Application</u> students are able to apply knowledge to solve problems in real life.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] Write the following equation in the form of $ax + by + c = 0$

Ans] $2x + 3y = 4 \cdot 37$
 where $a = 2; b = 3; c = 4 \cdot 37$
 $2x + 3y - 4 \cdot 37 = 0$

Q2] Write the following equation as an equation in two variables.

Ans] $x = -5$ can be written as
 $1x + 0y = -5$
 $x + 0y = -5$

Q3] The cost of a book is twice the cost of a pen. Write a linear equation in two variables to represent this.

Ans] Let cost of notebook = ₹ x
 cost of pen = ₹ y
 \therefore linear equation in two variables will be
 $x = 2y; x - 2y = 0$.

Q4] Find solution of the equation
 $4x + 3y = 12$

Ans] $4x + 3y = 12$
 taking $x = 0$,
 we get $3y = 12$
 $y = 4$
 $\therefore (0, 4)$ is the solution of the given equation

पाठ्याच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly.

फलक सार
Black Board Summary

Date - 22/12/23

Day - Friday

Class - IX

Sub - Mathematics

Topic - Linear Equations

in two variables

On roll -

Present -

absent -

Standard form of linear equation in two variables is
 $ax + by + c = 0$

where,
 x and y are variables

Homework - If $(2, 0)$ is a solution of the linear equation $2x + 3y = k$, then find the value of k .

वर्णन
Specification

अध्ययनानुभव (Learning Experience)

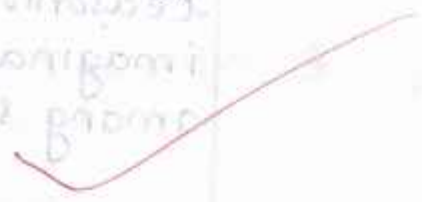
शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard
homework-

students write it down and solve it in their notebooks

If $(2,0)$ is a solution of the linear equation $ax + 3y = k$, then find the value of k .



अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 20
S.No

विषय Mathematics
Subject

शाळा V.L. Convent
School

विषयांश Statistics
Topic

पाठ साहित्य chalk, blackboard,
Material Aids dustee, chart showing
statistics

पूर्व ज्ञान Talley Marks, Frequency
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		<ul style="list-style-type: none">*] To develop, thinking, reasoning and imagination among students.*] To enable students to understand statistics.*] To enable students to know about bar graphs, histogram and frequency polygons.
<u>statement of Aim</u> - Today we are going to		

दिनांक

23/12/23

Date

वर्ग

IXth

Class

तासिका अवधी

35 min

Length of the Period

Frequency, Bar graph

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

1] What is meaning of the word 'statistics'?

Students give appropriate answers to the asked questions.

Ans] Statistics is the collection of data on different aspects of the life of people.

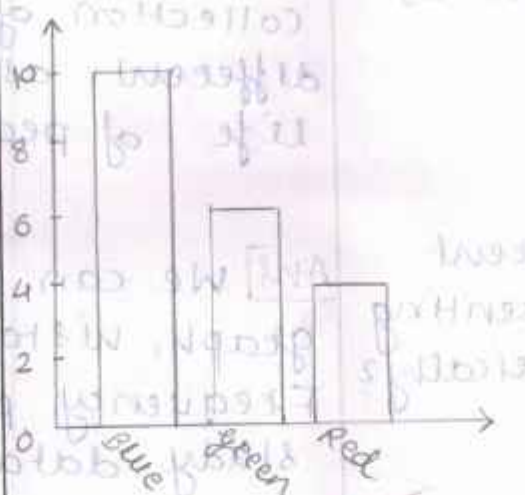
2] What are different methods of representing the data geometrically?

Ans] We can use bar graph, histogram and Frequency polygon to study data.

3] What is a pie chart?

Ans] A pie chart is the pictorial representation of data inside a circle.

study about statistics.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Bar graph</u></p> <p>A bar graph is a chart or graph that presents data with rectangular bars with heights or lengths proportional to the values that they represent.</p>  <p>The following graph represents no. of children and their favourite colour</p>	<p>1] <u>Knowledge</u> students are able to know about bar graphs.</p> <p>2] <u>Understanding</u> students are able to understand how bar graphs are drawn.</p> <p>3] <u>Application</u> students are able to apply knowledge of statistics to solve questions related to bar graph.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students give appropriate answer to the asked questions

1] What is a bar graph?

Ans] A bar graph is a pictorial representation of data in which usually bars of uniform width are drawn.

2] What is a Histogram?

Ans] A histogram is a representation of data used for continuous class intervals.

3] In the given figure, how many children like green colour?

Ans] In the given bar graph 6 children like green colour.

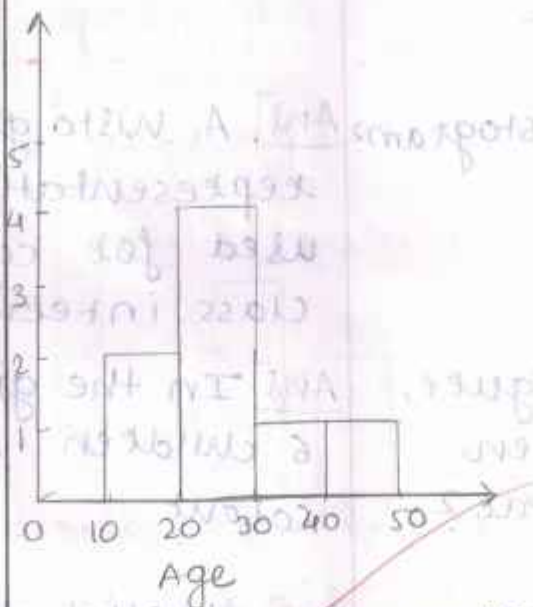
4] What is statistics?

Ans] statistics deal with the study of collection, presentation and analysis of numerical data.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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Histogram

A histogram is a bar graph like representation of data that gives a range of classes into columns along the x-axis



x-axis represents age and y-axis represents frequency

1] Knowledge
students are able to know about bar graph and histogram.

2] Understanding
students are able to understand how histograms are drawn.

3] Application
students are able to apply knowledge of statistics to solve questions related to histogram.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] What is mode of data?

Ans] The value which appears very frequently in a data is called a mode.

Q] What is the mode of given data?

4, 6, 5, 9, 3, 2, 7, 7, 6
5, 4, 9, 10, 10, 3, 4, 7,
6, 9, 9

Ans] Arranging given data in ascending order
2, 3, 3, 4, 4, 4, 5, 5, 6, 6, 6,
7, 7, 7, 9, 9, 9, 9, 10, 10
Hence, mode of given data is 9.

Q] What is mean?

Ans] The ratio of sum of observations and the total number of observations is called as Mean.

Q] What is the mean of $x+2$, $x+3$, $x+4$ and $x-2$?

Ans]
$$\text{Mean} = \frac{x+2+x+3+x+4+x-2}{4}$$

$$\text{Mean} = \frac{4x+7}{4}$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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① Mean

$$\bar{x} = \frac{\sum x}{N}$$

x - observations
 N - number of observations

② Median

$$\text{Median} = \left(\frac{n+1}{2}\right)^{\text{th}} \text{ observation}$$

③ Mode

$$\text{Mode} = 3 \times \text{Median} - 2 \times \text{Mean}$$

*] To revise the topic taught in the class.

*] To evaluate the knowledge gained by students.

*] To test the concept understood by students regarding statistics.

$$\frac{11x + 5 + x + 5 + x}{5} = \text{MEAN}$$

$$\frac{11x + 10 + x}{5} = \text{MEAN}$$

$$11x + 5 + x + 5 + x = \text{MEAN} \times 5$$

Students give appropriate answers to the asked questions.

Teacher asks some questions related to the topic.

Ans] There are 5 observations
 Median = $(\frac{5+1}{2}) = \frac{6}{2} = 3^{\text{rd}}$ observation

Q] The median of the data 4, 6, 8, 9, 11 is -

Ans] The collection of information collected for a purpose is called data.

Q] What is data?

Ans] class mark = $\frac{\text{upper limit} + \text{lower limit}}{2}$
 $= \frac{120 + 90}{2} = 105$
 class mark of the given interval is 105.

Q] What is the class mark of the class interval 90 - 120?

Ans] Mean = $\frac{2+3+4+5+0+1+3+3+4+3}{10} = 2.8$
 Mean of the given data

Q] What is the mean of the data 2, 3, 4, 5, 0, 1, 3, 3, 4, 3

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
<u>H</u> <u>O</u> <u>M</u> <u>E</u> <u>W</u> <u>O</u> <u>R</u> <u>K</u>		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly

फलक सार

Black Board Summary

<u>Date</u> - 23/12/23	<u>Class</u> - IX	on roll -
<u>Day</u> - Friday	<u>Sub</u> - Mathematics	present -
	<u>Topic</u> - Statistics	Absent -

<u>Mean</u> $\bar{x} = \frac{\sum x}{n}$ $\bar{x} = \frac{x_1 + x_2 + x_3}{3}$	<u>Median</u> $\left(\frac{n+1}{2}\right)^{th} \text{ observation}$ <u>Mode</u> $= 3 \text{ median} - 2 \text{ mean}$
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Homework - Find the value of x if the mean of 4, 5, 6, 7, 8 and x is 7.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. <u>Homework -</u> Find the value of x , the mean of 5, 5, 6, 7, 8 and x is 7.	Students write it down and solve it in their notebooks.

अभिप्राय (Remarks)

Shriyabande
पर्यवेक्षकाची सही
(Sign. of Supervisor)

SHEELA MULTIPURPOSE SOCIETY

SHEELADEVI COLLEGE OF EDUCATION



DATTAWADI, WADI, NAGPUR

2023 - 2024

LESSON PLANNING BOOK

पाठ नियोजन पुस्तिका

Name:

Ketaki Sheikant Ohale

नाव:

Number:

क्रमांक:

Subject:

विषय:

1) Physical

2)

अनुक्रमणिका

I N D E X

पाठांक S.No.	दिनांक Date	शाळा School	वर्ग Class	विषय Subject	विषयांक Topic	स्वाक्षरी Signature
1	16/09	V.L. Convent	IX	Physics	speed & velocity	
2	18/09	— 11 —	IX	Physics	Equations of Motion	
3	23/09	— 11 —	IX	Physics	Force and types of Forces	
4	26/09	— 11 —	IX	Physics	Newton's first law of motion	
5	05/10	— 11 —	IX	Physics	Newton's second law of motion	
6	09/10	— 11 —	IX	Physics	Newton's Third law of motion	
7	11/10	— 11 —	IX	Physics	Universal Law of gravitation	
8	13/10	— 11 —	IX	Physics	Mass and weight	
9	17/10	— 11 —	IX	Physics	Buoyancy	
10	20/10	— 11 —	IX	Physics	Archimede's Principle	
11	25/10	— 11 —	IX	Physics	Work done and its unit	

पाठांक 1
S.No.

विषय
Subject

Physics

शाळा V.L. Convent
School

विषयांश
Topic

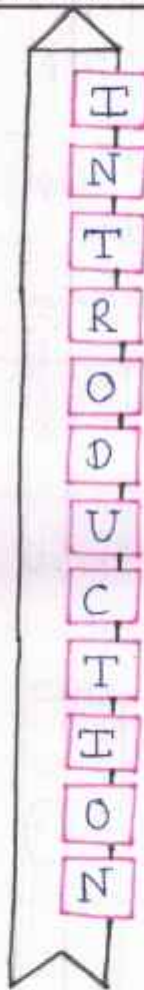
Speed and

पाठ साहित्य
Material Aids

Blackboard, chalk,
Duster, chart
showing formulae
of speed, velocity, acceleration

पूर्व ज्ञान
Previous Knowledge

Students sh

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व वि Objectives with S
		<ul style="list-style-type: none">*] To enable students define sp and velo*] To enable students differentiate between and velo*] To understand practical applications speed and velocity with examples
Statement of Aim -	Today we are going to learn about speed and velocity.	

दिनांक 16/09/23
Date

वर्ग IXth
Class

about distance and time
with displacement, motion

तासिका अवधी 35 min
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some
introductory questions

Students give satisfactory
answers to these questions

Q.1] How does a rabbit
run?

Ans] A rabbit runs
very fast

Q.2] How does a tortoise
walk?


Ans] A tortoise walks
very slow

Q.3] Whose speed is
more out of the
above two?

Ans] Rabbit's speed is
more than Tortoise

Q.4] How did you
determine the speed
of Rabbit and the
Tortoise?

Ans] We divided given
distance by time
to get speed.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
 <p>P R E S E N T A T I O N</p>	<p>1) <u>Speed</u></p> <p>2) <u>Velocity</u></p> <p>3) <u>Difference between speed and velocity</u></p> <p>- a) speed is a scalar quantity and velocity is a vector quantity</p> <p>- b) speed is distance covered in a certain time and velocity is displacement done in a certain time.</p> <p>- c) speed can never be negative or zero but velocity can be zero, negative or positive.</p>	<p>1) <u>Knowledge</u> - → students are able to define speed and velocity</p> <p>2) <u>Understanding</u> - → students understand the difference between speed and velocity.</p> <p>3) <u>Application</u> - → students are able to apply and evaluate questions with the help of speed and velocity formulas.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

students give appropriate answers of the asked questions.

Q.1] Is speed a vector or a scalar quantity?

Ans] speed is a scalar quantity

Q.2] Is velocity a vector or a scalar quantity?

Ans] Velocity is a vector quantity

Q.3] How will you represent speed with equation?

Ans] Speed is equal to distance divided by time

$$\text{Speed} = \frac{\text{distance}}{\text{time}}$$

Q.4] How will you represent velocity in the form of equation?

Ans] velocity is equal to displacement divided by change in time.

$$\text{velocity} = \frac{\text{displacement}}{\text{time}}$$

<p>चरणच्य पायन्या (Steps of Lesson)</p>	<p>अध्यापन मुद्दे (Teaching Points)</p>	<p>उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)</p>
	<p>1] <u>distance</u> = speed \times time</p> <p>2] <u>Displacement</u> = Final position - Initial position = change in position</p> <p>3] <u>Unit of speed</u> = m/s or km/h</p> <p>4] <u>Unit of velocity</u> = m/s or km/h (in a given direction)</p>	<p>1] <u>Knowledge</u>- → students are able to identify and know the units of speed and velocity</p> <p>2] <u>Understanding</u>- → students are able to understand values and units of time, distance and displacement</p> <p>3] <u>Application</u>- → students are able to find values of speed and velocity along with units in given word numerical problems.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

Students give appropriate answers of the asked questions

Q.1] Ben is running at a speed of 3 m/s. How long will it take him to travel 720 m?

Ans] speed = 3 m/s
distance = 720 m

$$\text{Time} = \frac{\text{distance}}{\text{speed}}$$

$$\text{Time} = \frac{720}{3} = 240 \text{ sec}$$

$= 4 \text{ min}$
(∴ It will take 4 min for Ben to travel 720 m)

Q.2] What does the odometer of an automobile measure?

Ans] The odometer measures the distance travelled by an automobile based on perimeter of wheel

Q.3] An athlete runs around a circular track from a point and comes back to the same point. What is the distance covered and the displacement?

Ans] Distance covered = circumference of the circular track.

Displacement = Zero. (As the athlete starts from a point and comes back to the same point)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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- 1] speed
- 2] velocity
- 3] distance
- 4] displacement
- 5] time

- 1] Knowledge -
→ To revise the topic for student's knowledge
- 2] Understanding -
→ To evaluate the understanding of the students.
- 3] Application -
To test the application of knowledge to practical application.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students given answers to the asked questions

Q.1] What is speed?

Ans] Speed is the rate at which an object covers a certain distance.

Q.2] What is velocity?

Ans] Velocity can be defined as the rate at which an object changes position in a certain direction.

Q.3] Can speed be zero?


Ans] speed can never be negative or zero

Q.4] Can velocity be zero?

Ans] Velocity can be zero, negative or positive.

Q.5] What is the speed of a satellite if it covers a distance of 265571 km in 24 hours?

Ans] speed = distance/time
 $= 265571/24$
 $= 11065.4 \text{ km}$
∴ speed of satellite is 11065.4 km per hour

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
		<ul style="list-style-type: none"> *] To utilize the free time *] To create interest in the topic. *] To understand the concept completely.

फलक सार
Black Board Summary

<u>Date</u> - 16/09/23	<u>Class</u> - IX	<u>On Roll</u> -
<u>Day</u> - Saturday	<u>Sub</u> - Physics	<u>Present</u> -
	<u>Topic</u> - speed and velocity	<u>Absent</u> -

$\text{speed} = \frac{\text{distance}}{\text{time}}$ <p>speed is scalar</p> $\text{velocity} = \frac{\text{displacement}}{\text{time}}$ <p>velocity is vector</p>	<p>* Unit of speed and velocity are same</p> <p>- m/s or km/h</p>
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Homework - 1] What is SI unit of speed & velocity?
 2] A person travels 6 km in 2 hours. Find his speed (in kmh^{-1} and ms^{-1})

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard
Homework -

student write it down and solve by themselves in their notebooks.

1] What is SI unit of speed and velocity?

2] A person travels 6 km in 2 hours. Find his speed in kmh^{-1} and ms^{-1} .

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठक 2
S.No

विषय Physics
Subject


विषयांश Equations of Motion
Topic

शाळा V.L. Convent
School

पाठ साहित्य Blackboard, chalk
Material Aids

पूर्व ज्ञान students should know
Previous Knowledge

duster, chart showing
uniform and non-
uniform motion

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
		<ul style="list-style-type: none"> *] To develop thinking, reasoning and imagination among students *] To enable students to know about motion and its equations *] To enable students to understand practical application of equation of motion.
<p>Statement of Aim - Today, we are going to</p>		

दिनांक 18/09/23
Date

वर्ग IXth
Class

तासिका अवधी 35 min
Length of the Period

now which objects are at rest
and which objects are in
motion

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some
introductory questions

students give satisfactory
answers to these questions

Q.1] What do we call
the objects that
do not change their
position?

Ans] objects that do
not change their
position are at rest

Q.2] What do we call
objects that change
their position?

Ans] objects that change
their position with
respect to time are
in motion.

Q.3] What is motion?

Ans] The change in
position of an object
with respect to its
surroundings in a
given interval of time
is called motion.

Learn about Equations of Motion

पाठच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
<p style="text-align: center;">P R E S E N T A T I O N</p>	<p>1] <u>Uniform Motion</u>- When an object covers equal distances in equal intervals of time, it is said to be uniform motion.</p> <p>2] <u>Non-uniform Motion</u>- When an object covers unequal distances in equal intervals of time, it is said to be in non-uniform motion.</p> <p>3] <u>Acceleration</u>- change in velocity of an object per unit time.</p>	<p>1] <u>Knowledge</u> → students should be able to know about uniform and non-uniform motion.</p> <p>2] <u>Understanding</u> → students should be able to understand equations of uniform motion.</p> <p>3] <u>Application</u> → students should be able to apply and evaluate questions with help of equations of motion.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

students give appropriate answers to the asked questions.

Q.1] If an object travels 5 m in first second, 5 m more in the next and 5 m in next. What type of motion is this?

Ans] As the object covers equal distances in equal intervals of time, it is said to be in uniform motion.

Q.2] When a car is moving on a crowded street or a person jogging in a park, what motion do these instances show?

Ans] As both of these objects cover unequal distances in equal intervals of time, car and person both are in non-uniform motion.

Q.3] Give any three examples of non-uniform motion.

Ans] Bouncing ball, a running horse and moving train are examples of non-uniform motion.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p>1] <u>Equations of motion</u> → When an object moves along a straight line with uniform acceleration it follows a set of equations</p> $v = u + at$ $s = ut + \frac{1}{2}at^2$ $2as = v^2 - u^2$ <p>2] <u>Distance time graphs of uniform and non-uniform motion</u></p>	<p>1] <u>Knowledge</u>- → Students are able to know equations of uniform motion</p> <p>2] <u>Understanding</u>- → Students are able to understand relation between velocity, acceleration, time and distance covered.</p> <p>3] <u>Application</u> → Students are able to apply equations according to situation and evaluate various parameters of uniform motion.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

Students give appropriate answers to the asked questions.

Q-1] Give any two examples of uniform motion

Ans] Movement of ceiling fan's blades and motion of earth around the sun are examples of uniform motion.

Q-2] What does the area under the velocity time graph represent?

Ans] The area under velocity time graph represents the displacement of body.

Q-3] Starting from a stationary position, Rahul paddles his bicycle to attain a velocity of 6 m s^{-1} in 30s. Find acceleration.

Ans] initial velocity (u)
 $= 0 \text{ m s}^{-1}$

final velocity (v)
 $= 6 \text{ m s}^{-1}$

time (t) = 30 sec

$$a = \frac{v-u}{t}$$

$$= \frac{6-0}{30} = 0.2 \text{ m s}^{-2}$$

(\therefore Acceleration of Rahul's bicycle = 0.2 m s^{-2})

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Uniform motion	*] To revise the topic
	2] Non-uniform motion	
	3] Acceleration	*] To evaluate the knowledge of students
	4] Equations of motion	
	5] Distance - time graphs of uniform and non-uniform motion.	*] To test the knowledge of practical application of formulas

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students have given answers to the asked questions:

Q1] What is uniform motion?

Ans] When an object covers equal distance in equal intervals of time, it is said to be uniform motion.

Q2] What is non-uniform motion?

Ans] When an object covers unequal distance in equal intervals of time, it is said to be in non-uniform motion.

Q3] What is acceleration?

Ans] change in velocity of an object per unit time is acceleration

Q4] What are three equations of motion?

Ans] i] $v = u + at$
 ii] $s = ut + \frac{1}{2}at^2$
 iii] $2as = v^2 - u^2$

Q5] A bus starting from rest moves with a uniform acceleration of 0.1 m/s^2 for 2 min. Find the speed acquired.

Ans] initial velocity (u) = 0
 acceleration (a) = 0.1 m/s^2
 time (t) = 2 min
 = 120 sec
 $v = u + at$
 = $0 + 0.1 \times 120$
 $v = 12 \text{ m/s}^2$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
<u>H</u> <u>O</u> <u>M</u> <u>E</u> <u>W</u> <u>O</u> <u>R</u> <u>K</u>		<ul style="list-style-type: none"> *] To utilize free time *] To create interest in the topic *] To understand the taught topic completely

फलक सार
Black Board Summary

<p><u>Day</u> - Monday <u>Date</u> - 18/09/23</p>	<p><u>Class</u> - IX <u>Sub</u> - Physics <u>Topic</u> - Equations of motion</p>	<p>on roll - Present - absent -</p>
<p><u>Acceleration</u> change in velocity of an object per unit time.</p>	<p><u>Equations of motion</u></p> <ol style="list-style-type: none"> 1] $v = u + at$ 2] $s = ut + \frac{1}{2}at^2$ 3] $2as = v^2 - u^2$ 	
<p><u>Homework</u> - 1] When will you say a body is in uniform acceleration? 2] A racing car has a uniform acceleration of 4 ms^{-2}. What distance will it cover in 10 sec?</p>		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard <u>homework</u> -	student writes it down and solve by themselves in their notebooks
When will you say a body is in uniform acceleration?	
A racing car has a uniform acceleration of 4 m/s^2 . What distance will it cover in 10s after start?	

अभिप्राय (Remarks)

<p>Handwritten notes and observations in the Remarks column.</p>	<p>Handwritten notes and observations in the Remarks column.</p>
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पर्यवेक्षकाची सही
(Sign. of Supervisor)

Handwritten signature and name of the supervisor in the designated box.

पाठांक 3
S.No.

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Force and Types
Topic

पाठ साहित्य chalk, blackboard,
Material Aids chart showing types
of forces

पूर्व ज्ञान Students should
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		<ul style="list-style-type: none">*] To develop scientific aptitude and interest among the students.*] To develop power of thinking and reasoning in students.*] To make students aware about forces in their environment.
statement of AIM - Today we are going to		

दिनांक 23/09/23
Date

of Forces

वर्ग IX
Class

know about moving objects
push and pull

तासिका अवधी 35 min
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions

Students give satisfactory answers to these questions

Q.1] What will you do to move a ball?

Ans] Apply push or pull on the ball or kick the ball

Q.2] What is a push and what is a pull?

Ans] Push is a jerk or effort exerted to move pull is effort exerted to draw.

Q.3] What will you do if you want to lift a heavy box?

Ans] we will apply force or pull in the opposite direction.

Q.4] What is direction of applied push or pull?

Ans] The direction in which body is pushed or pulled.

learn about force and its types

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	1] <u>Force</u> - A push or pull acting on a body which tends to change its state of rest or motion is called as force	1] <u>Knowledge</u> - → students are able to define force and types of forces.
	2] <u>Types of force</u> - a] contact force b] Non contact force	2] <u>Understanding</u> - → students are able to understand forces in their own environment.
	a] <u>contact force</u> - exists where there is contact between two surfaces. b] <u>Non-contact force</u> - exists where there is no contact between two surfaces.	3] <u>Application</u> - → students are able to calculate and apply knowledge of forces.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

students give appropriate answers of the asked questions

Q] How does force come into play?

Ans] There should be two interacting objects on which force is applied and other who applies the force.

Q] What is contact force?

Ans] For an object to be pulled or pushed, there should be a contact between the two objects is contact force.

Q] What is non-contact force?

Ans] The force which can act even without any actual contact between the two objects is called non-contact force.

Q] What are two main types of force?

Ans] There are two main types of force
① Contact force
② Non-contact force

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p>1] <u>Types of contact force</u></p> <ul style="list-style-type: none"> - a] Muscular force b] Frictional force <p>a] <u>Muscular force</u> - force exerted by muscles.</p> <p>b] <u>Frictional force</u> - force between two surfaces.</p> <p>2] <u>Types of non-contact force</u></p> <ul style="list-style-type: none"> - a] <u>Magnetic force</u> - force exerted by magnet. b] <u>Electrostatic force</u> - force exerted by electrified body c] <u>Gravitational force</u> - force of attraction between two objects with mass 	<p>1] <u>Knowledge</u> - → students are able to know about contact and non contact forces.</p> <p>2] <u>Understanding</u> - → students are able to understand the classification of forces along with their types.</p> <p>3] <u>Application</u> - → students are able to learn and apply the distinguishing factors related to forces and their types.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers of the asked questions.

Q.1] What is muscular force?

Ans] The force exerted by muscles of human or animal body is called muscular force.

Q.2] What is frictional force?

Ans] The force acting between two surfaces in contact which opposes the motion of one body over the other is called frictional force.

Q.3] What is magnetic force?

Ans] The force exerted by magnetic on other object or magnet is called magnetic force.

Q.4] What is gravitational force?

Ans] The force of attraction between any two objects depending upon constant of gravity, their masses and distance between objects is called gravitational force.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Force 2] Types of force -A] contact forces -a] muscular force b] Frictional force -B] Non-contact forces -a] Magnetic force b] Electrostatic force c] gravitational force	*] To revise the topic taught *] To evaluate the knowledge gained *] To test the knowledge in application and classification scenarios

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

students give appropriate answer to the asked questions.

Q.1] Give an example of contact force.

Ans] Pushing a box with hands is an example of contact force.

Q.2] Give an example of frictional force.

Ans] Rolling ball stops after some time due to frictional force between ball and ground.

Q.3] What is an example of magnetic force?

Ans] A magnet attracts nails and pins made up of iron.

Q.4] What is an example of electrostatic force?

Ans] A charged comb attracts tiny pieces of paper is an example of electrostatic force.

पाठ्याच्या पायन्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize free time *] To create interest in the topic taught

फलक सार
Black Board Summary

Day - Saturday
Date - 23/09/23

Class - IX
Sub - physics
Topic - Force and types of force

On Roll -
 Present -
 Absent -

Force

<p style="text-align: center;">↓</p> <p>contact</p> <ul style="list-style-type: none"> ↳ muscular ↳ frictional 	<p style="text-align: center;">↓</p> <p>Non-contact</p> <ul style="list-style-type: none"> ↳ magnetic ↳ electrostatic ↳ gravitational
--	--

A push or pull acting on a body is called force.

Homework - 1] What is the SI unit of force?
 2] Give an example of gravitational force.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard
Homework -

students write it down and solve by themselves in their notebook.

- 1] A pull or push acting on a body is called —
- 2] SI unit of force is —
- 3] Give an example of gravitational force.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 4
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Newton's first
Topic

पाठ साहित्य chalk, blackboard,
Material Aids dustet

पूर्व ज्ञान objects at rest,
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		<p>*] To enable students to define which object is in state of rest</p> <p>*] students are able to know force applied on an object</p> <p>*] students are able to understand the consequences of force applied on an object.</p>
statement of Aim - Today we are going to study		

दिनांक 26/09/23
Date

Law of Motion

वर्ग IX
Class

force applied

तासिका अवधी 35 min
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

students give satisfactory answers to these questions.

Q.1] Who was Sir Isaac Newton?

Ans] Sir Isaac Newton was an English philosopher.

Q.2] What happens to a book kept on table in absence of force?

Ans] The book stays at rest in absence of any force.

Q.3] What will you do to stop a moving car?

Ans] We will apply force by breaks to stop a moving car.

Newton's First Law of Motion

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Newton's first law of motion-</u></p> <p>A body remains in the state of rest or uniform motion in a straight line until and also unless an external force acts on it.</p> <p><u>Object at rest</u></p> <p>When velocity $v=0$ and acceleration $a=0$</p> <p><u>Object in motion</u></p> <p>When velocity $v \neq 0$ and acceleration $a=0$</p>	<p>1] <u>Knowledge-</u> students are able to know Newton's first law of motion and its importance.</p> <p>2] <u>Understanding</u> students are able to understand importance of friction and gravity.</p> <p>3] <u>Application-</u> students are able to apply effects of first law of motion on human body as well as other objects.</p>

श्रीकरणे
सिद्धि (Specification)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

Students give appropriate answers to the asked questions -

Q] Does force affect objects that are at rest or in motion?

Ans] Yes, force affects objects that are in motion or at rest.

Q] What is external force?

Ans] The forces caused by external agents such as friction, normal force and air resistance are called external forces.

Q] Give an example of Newton's first law of motion.

Ans] Wearing a seat belt in car while driving is an example of Newton's first law of motion.

Q] What is a normal force?

Ans] A force that always acts perpendicular to the surface of contact is called a normal force.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Newton's law of motion - explained</u></p> <p>Take a block on a smooth surface. The block is at rest, there are two forces acting upon it.</p> <p>a) Force of gravity b) Normal reaction</p> <p>When we apply a constant force F, in a horizontal direction, the block starts moving in the direction of applied force.</p>	<p>1) <u>Knowledge</u> - students are able to understand Newton's first law of motion with examples.</p> <p>2) <u>Understanding</u> - students are able to understand force of gravity and Normal force reaction.</p> <p>3) <u>Application</u> - students are able to apply first law in daily life examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask questions related to the topic

Students give answers appropriate according to the questions

Q1] What is an example of Newton's first law of motion in day-to-day life?

Ans] A small coin placed on a card and placed over a glass is flicked away with the finger, the coin drops into the glass.

Q2] If A and B are two objects with masses 10 kg and 30 kg respectively, then which has greater inertia.

Ans] Body B has more inertia than body A.

Q3] A book of weight 10 N is placed on a table. The force exerted by the surface of the table will be?

Ans] The force exerted by the surface of the table on the book will be 10 N.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	*] Newton's first law of motion <u>object at rest</u> $v = 0$ $a = 0$	*] To revise the topic taught in the class.
	*] <u>object in motion</u> $v \neq 0$ $a = 0$	*] To evaluate the knowledge gained.
		*] To test the knowledge in application of first law of motion.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

students give appropriate answers to the asked questions.

Q.1] Which law of motion is also known as law of inertia?

Ans] Newton's first law of motion is also known as 'law of inertia'.

Q.2] A straight moving bus takes a sharp right turn. What will happen to passengers sitting inside the bus?

Ans] When the bus takes a sharp turn, the passengers move towards the left.

Q.3] What causes motion of body which is initially in the state of rest?

Ans] According to the first law of motion, force causes the motion of body.

Q.4] What is Inertia?

Ans] It is the property of mass to remain unchanged in the absence of any external force.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize free time. *] To create interest in the topic taught *] To understand the concept properly.

फलक सार
Black Board Summary

Day - Tuesday Date - 26/09/23	Class - IX Sub - Physics Topic - Newton's First Law of motion	on roll - Percent - Absent -
<u>Newton's first law of motion</u> $v = 0$ and $a = 0$ object in motion $v \neq 0$ $a = 0$		A body remain in the state of rest until an external force acts on it
<u>Homework</u> - 1] Give an example of Newton's first law of motion. 2] What is Newton's first law of motion Explain		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard.
Homework-

students write it down and solve in their notebooks.

1] Give an example of Newton's first law of motion.

2] What is Newton's first law of motion. Write and explain.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही

(Sign. of Supervisor)

पाठ्यांक 5
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Newton's second
Topic

पाठ साहित्य dustet, blackboard,
Material Aids chalk

पूर्व ज्ञान Objects at rest,
Previous Knowledge

पाठ्याच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		<ul style="list-style-type: none"> *] To enable students to define force applied on an object *] students are able to know magnitude and direction of force applied *] students are able to calculate force applied in real time examples.
statement of Aim - Today we are going to		

दिनांक 05/10/23
Date

Law of Motion

वर्ग IX
Class

Force applied, mass

तासिका अवधी 35 min
Length of the Period

अध्यायानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions

students give satisfactory answers to asked questions.

Q.1] What will you do to move an object which is at rest?

Ans] We will apply force to move the object at rest.

Q.2] Which will require more force to move a book or a table?

Ans] A table will need more force to move from one place to the other.

Q.3] Force is dependant on which entity? state their relation.

Ans] Force is dependant on mass of object. Force and mass are directly proportional to each other.

study Newton's second Law of Motion.

पाठ्याच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Newton's second Law of motion-</u> The force acting on an object is equal to the product of its mass and acceleration.</p> <p>Mathematical Expression $F = m \times a$ where F - Force m - mass of object a - acceleration of object</p>	<p>1] <u>Knowledge</u> - students are able to know Newton's second law of motion and its importance</p> <p>2] <u>Understanding</u> - students are able to understand the relationship between force and acceleration</p> <p>3] <u>Application</u> - students are able to calculate the force applied in various cases</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask questions related to the topic.	Students give appropriate answers to the asked questions.
Q-1] What is an example of Newton's second law of motion?	Ans] Riding a bicycle. In this example, bicycle is mass, Leg pushing the pedals of bicycle is the force.
Q-2] What is a unit force?	Ans] 1 unit force is defined as the force applied on an object of mass 1 kg to produce the acceleration of 1 m/s^2 .
Q-3] What is the unit of force?	Ans] The SI unit of force is Newton (N).
Q-4] How will you calculate acceleration if initial, final velocity and time are given?	Ans] If initial velocity (u) v = final velocity (v) and time (t) are given, we will calculate acceleration by formula $a = \frac{v-u}{t}$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Newton's second law of motion - explained</u></p> <p>Forces are unbalanced ↓ There is an acceleration</p> <p>↳ a] The acceleration depends directly on the 'net force'</p> <p>↳ b] The acceleration depends inversely upon the object's mass</p> <p>$F = m \times a$ $a = \frac{F}{m}$</p>	<p>1] <u>Knowledge</u> - students are able to know Newton's second law of motion and its importance.</p> <p>2] <u>Understanding</u> - students are able to understand relation b/w between force and acceleration.</p> <p>3] <u>Application</u> - students are able to calculate force applied in various examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teachers ask questions related to the topic.</p>	<p>Students give appropriate answers to the asked questions.</p>
<p>Q1] Give an example of Newton's second law of motion.</p>	<p>Ans] When we kick a ball, we exert force in a specific direction.</p>
<p>Q2] If a block of mass 2kg with a force of 10N, calculate the acceleration of block.</p>	<p>Ans] $F = 10\text{ N}$ $m = 2\text{ kg}$ $F = m \times a$ $a = \frac{F}{m}$ $a = 10/2 = 5\text{ m/s}^2$ (∴ Acceleration of block = 5 m/s^2)</p>
<p>Q3] What is the other name for Newton's second law of motion?</p>	<p>Ans] The other name for Newton's second law of motion is the law of force and acceleration.</p>

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	<p>*] Newton's second law of motion</p> $F = m \times a$ $a = \frac{F}{m}$ $m = \frac{F}{a}$ <p>where,</p> <p>F --- Force m --- mass of object a --- acceleration of object</p>	<p>*] To revise the topic taught in the class.</p> <p>*] To evaluate the knowledge gained</p> <p>*] To test the knowledge in application of second law of motion.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

students give appropriate answers to the asked questions

Q.1] What is net force?

Ans] A net force ΣF is the sum of all forces acting on a body.

Q.2] State true or false - Net force is the vector sum of all forces acting on a body

Ans] Yes, the statement is True.

Q.3] A force of 20 N is acting on a body in positive x-direction and a force of 30 N in the negative x-direction. How much net force is acting on the body?

Ans] $F_{net} = 20N - 30N$
 $= -10N$

Q.4] What is the formula for Newton's second law of motion?

Ans] The formula for Newton's second law of motion is
 $F = m \times a$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize free time *] To create interest in the topic taught *] To understand the concept properly.

फलक सार

Black Board Summary

<u>Day</u> - Thursday <u>Date</u> - 05/10/23	<u>Class</u> - IX <u>Sub</u> - Physics <u>Topic</u> - Newton's second law of motion	on roll - present - absent -
Newton's second law of motion says that force acting on an object is equal to product of mass and	acceleration $F = m \times a$ where F ... force m ... mass a ... acceleration	
<u>Homework</u> - 1] Give a daily life example of Newton's second law of motion. 2] How much force is required to accelerate a 1000 kg car at 4 m/s^2		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on blackboard
Homework -

students write it down and solve in their notebooks.

1] Give a daily life example of Newton's second law of motion.

2] How much force is required to accelerate a 1000 kg car at 4 m/s^2 ?

अभिप्राय (Remarks)

पर्यवेक्षकाची सही

(Sign. of Supervisor)

Physics

पाठांक 6
S.No

विषय
Subject

शाळा V.L. Convent
School

विषयांश
Topic Newton's Third

पाठ साहित्य
Material Aids Chalk, board,
dustee

पूर्व ज्ञान
Previous Knowledge Distance, force

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
N O H T C O O C H N		*] To enable students to define action and reaction forces.
		*] To make students aware about the most significant law of motion.
		*] To make students know that action-reaction pair law is seen in everyday life.
statement of Aim - Today, we		are going to

दिनांक 09/10/23

Date

IX

वर्ग

Class

तासिका अवधी 35 min

Length of the Period

Law of Motion

Acceleration, Mass

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teachers ask some introductory questions.	Students give satisfactory answers to the asked questions.
Q] What happens when you throw a ball against the wall?	Ans] The wall puts a force on ball and ball bounces back.
Q] By which force does the earth pulls you?	Ans] The earth pulls you with a gravitational force.
Q] What is your weight?	Ans] Our weight is the force exerted by us on the earth.
Q] What are the directions of gravitational pull and weight?	Ans] Gravitational pull and weight are in opposite directions.
Study Newton's Third Law of Motion	Law of Motion

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specifications)
P R E S E N T A T I O N	<p><u>Newton's Third Law of Motion -</u></p> <p>When a body exerts a force on the other body, the first body experiences a force which is equal in magnitude in the opposite direction of the force which is exerted.</p>	<p>1] <u>Knowledge</u> - students are able to know action and reaction forces with Newton's third law of motion.</p> <p>2] <u>Understanding</u> - students are able to understand the nature of action and reaction forces.</p> <p>3] <u>Application</u> - students are able to apply magnitude and directions of action and reaction forces.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] Give an example of Newton's third law of motion?

Ans] A swimmer pushes against the water, while the water pushes back on the swimmer.

Q] What is the nature of action and the reaction forces acting on an object?

Ans] The action and reaction forces are equal in magnitude and opposite in direction.

Q] What happens when you use a stick to hit a wall?

Ans] When we hit the wall with a stick, the wall pushes against the stick.

Q] Give reason - We are able to walk on the ground properly.

Ans] We are able to walk properly on the ground because of Newton's Third Law of Motion.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Newton's Third Law of motion - d explained</u></p> <p>If a body A puts force F_a on body B, then B at the same time exerts F_b on body A.</p> <p>F_a and F_b are same in magnitude and are reverse in direction.</p> $F_a = -F_b$ <p>where,</p> <p>F_a ... action force</p> <p>F_b ... reaction force</p>	<p>1] <u>Knowledge</u> - students are able to know action and reaction forces with Newton's Third Law of motion.</p> <p>2] <u>Understanding</u> - students are able to understand the nature of action and reaction forces</p> <p>3] <u>Application</u> - students are able to apply magnitude and directions of action and reaction forces.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teachers ask some questions related to the topic.</p>	<p>students give appropriate answers to the asked questions.</p>
<p>Q1] Give an example of Newton's third law of motion.</p>	<p>Ans] A man is at rest on a perfectly smooth ice in the middle of a pond. This is an example of Newton's third law of motion.</p>
<p>Q2] Why the horse pulling the wagen is able to move forward? because</p>	<p>Ans] The horse pulling the wagen is able to move forward because of the force exerted by the ground on the horse.</p>
<p>Q3] Why won't the man attempting to pull himself by tugging on his hair not succeed?</p>	<p>Ans] Man attempting to pull himself by tugging on his hair does not succeed because the force is applied is internal to the system.</p>
<p>Q4] When we jump out of the boat standing in still water, where does the boat moves?</p>	<p>Ans] When we jump out of the boat standing in still water, the boat moves backwards.</p>

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECALCITATION	<p>*] <u>Newton's Third Law of motion</u></p> $F_a = - F_b$ <p>where, F_a is action force F_b is reaction force</p>	<p>*] To revise the topic taught in the class</p> <p>*] To evaluate the knowledge gained</p> <p>*] To test the knowledge of Newton's Third law of motion.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teachers ask some questions related to the topic-</p> <p>Q.1] Passengers are pulled back when a bus starts abruptly. Which of the Newton's law shows this?</p>	<p>Students give appropriate answers to the asked questions -</p> <p>Ans] The law of inertia of rest, sometimes known as Newton's first law causes passengers to slide backwards when a bus abruptly starts moving.</p>
<p>Q.2] What is the mass of a body that accelerates at a rate of 2.6 m/s^2 with a force of 90 N?</p>	<p>Ans] $F = m \times a$ $90 = 2.6 \times m$ $\frac{90}{2.6} = m = \frac{90 \times 10}{26}$ mass of body = 34.6 kg</p>
<p>Q.3] Which component of contact force that is perpendicular to the surface in contact is?</p>	<p>Ans] The component of contact force that is perpendicular to the surface in contact is referred to as normal reaction force.</p>
<p>Q.4] The quicker the momentum changes, how will the force change?</p>	<p>Ans] The quicker the momentum changes the force is greater.</p>

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> * To utilize free time * To create interest in the topic taught * To understand the concept properly

फलक सार
Black Board Summary

Day - Monday
Date - 09/10/23

Class - IX
Sub - Physics
Topic - Newton's Third Law
of motion

on roll -
Present -
Absent -

Newton's Third Law
of motion


$$F_a = - F_b$$

where,

F_a is action force
and F_b is a
reaction force.

Homework - 1] state Newton's third law of motion.
2] give three examples of Newton's third law of motion.

अध्ययनानुभव (Learning Experience)

तिरुह कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher give homework written on blackboard - homework -	students write it down and solve in their notebooks.
1) State Newton's Third Law of motion.	
2) Give three examples of Newton's Third Law of motion.	

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 7
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Universal Law of
Topic

पाठ साहित्य chalk, blackboard,
Material Aids dustee

पूर्व ज्ञान Newton's law of
Previous Knowledge

पाठ्याच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		<ul style="list-style-type: none"> *] To enable students to understand that every mass in the universe is attracted to every other mass. *] To make students use the force of attraction knowledge in real life. *] To make students familiar with gravitational concepts.
Statement of Aim - Today we		are going

दिनांक

11/10/23

Date

IX

वर्ग

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activitiesछात्र कृती
Student's Activities

Teachers ask some introductory questions

students give satisfactory answers to the asked questions.

Q] Why are we able to walk or move on earth?

Ans] We are able to walk on the earth because of gravity.

Q] Is there gravity in space?

Ans] Yes, gravity is every where. It exists in planets, solar system.

Q] If you throw a ball vertically upward, what happens next?

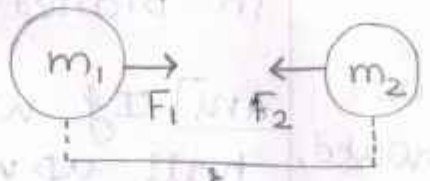
Ans] If we throw a ball upwards, it will fall down.

Q] Why, do you think the ball falls down?

Ans] The ball falls down due to the gravitational force.

Lesson about universal

Law of Gravitation

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Universal Law of Gravitation -</u></p> <p>Every body on earth attracts every other body with a force which is directly proportional to the product of their masses and inversely proportional to the square of distance between them.</p>  <p>$F \propto m_1 m_2$</p> <p>$F \propto \frac{1}{r^2}$</p>	<p>1] <u>Knowledge</u> - students will have knowledge of attractive force between objects in their daily life.</p> <p>2] <u>Understanding</u> - students are able to explain factors involved in the gravitational force.</p> <p>3] <u>Application</u> - students are able to apply factual and conceptual knowledge of universal law of gravitation.</p>

अध्ययनानुभव (Learning Experience)

विद्यार्थी कृती (Student Activity)

Teacher ask some questions related to the topic.

students give appropriate answers to the asked questions.

Q] Who put forward the universal law of gravitation?

Ans] In 1687, Sir Isaac Newton put forward the universal law of gravitation.

Q] What is gravitational force?

Ans] The universal force of attraction acting between objects is known as the gravitational force.

Q] Give one example for gravitational force.

Ans] The force acting between sun and the Earth is one example of gravitational force.

Q] Give the universal gravitational equation.

Ans] The universal gravitational equation is given by -

$$F = G \frac{m_1 m_2}{r^2}$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Universal Law of Gravitation</u> - <u>Explained</u></p> <p>Magnitude of gravitational force is</p> $F = G \frac{m_1 m_2}{r^2}$ <p>where,</p> <p>F ... is the force of attraction gravitational</p> <p>G ... constant of gravitation</p> <p>m_1, m_2 ... masses of two objects</p> <p>r ... distance between the centres of two bodies</p>	<p>1] <u>Knowledge</u> - students will have knowledge of attractive force between objects in their daily life.</p> <p>2] <u>Understanding</u> students are able to explain factors involved in the force of gravitation.</p> <p>3] <u>Application</u> - students are able to apply factual and conceptual knowledge of universal law of gravitation.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students give appropriate answers to the asked questions

Q] What is the value of 'g'?

Ans] The value of g is $6.673 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$

Q] What is importance of Universal Law of Gravitation?

Ans] It explains the rotation of the earth around the sun.

Also, it explains the formation of tides in the ocean due to the force of attraction between the moon and ocean water.

Q] Two spherical balls of mass 10 kg each are placed 10 cm apart. Find the gravitational force of attraction between them.

Ans] Gravitational force of attraction,

$$F = \frac{G m_1 m_2}{r^2}$$

$$F = \frac{6.67 \times 10^{-11} \times 10 \times 10}{(0.1)^2}$$

$$= \frac{6.67 \times 10^{-9}}{1 \times 10^{-2}}$$

$$F = 6.67 \times 10^{-7} \text{ N}$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Universal law of gravitation $F = G \frac{m_1 m_2}{r^2}$ 2] value of G $G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$ 3] Distance between two objects r is the distance between their centres	*] To revise the topic taught in the class. *] To evaluate the knowledge gained. *] To test the knowledge of Universal law of gravitation.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teachers ask some questions related to the topic</p>	<p>students give appropriate answers to the asked questions.</p>
<p>Q-1] calculate the gravitational force between two bodies 'a' and 'b' of mass 50 kg each at a distance of 1 m.</p>	<p>Ans] gravitational Force</p> $F = G \frac{m_a m_b}{d^2}$ $= \frac{6.67 \times 10^{-11} \times 50 \times 50}{1^2}$ $F = 1.6675 \times 10^{-7} \text{ N}$
<p>Q-2] give the equations of force of gravitation if mass of any one object is doubled.</p>	<p>Ans] $m_1 = 2m_1$</p> $F = G \frac{m_1 \times 2m_1}{r^2}$ $F = 2 \times \frac{G m_1 m_2}{r^2}$ $F = 2F$ <p>(∴ The force is doubled.)</p>
<p>Q-3] give the equation of force of gravitation if the distance between objects is doubled.</p>	$r = 2r$ $F = G \frac{m_1 m_2}{(2r)^2}$ $F = \frac{1}{4} \times \frac{G m_1 m_2}{r^2}$ $F = \frac{1}{4} F_1$ <p>(∴ The force is made one-fourth.)</p>

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize free time *] To create interest in the topic taught *] To understand the concept properly

फलक सार
Black Board Summary

Day - Wednesday
Date - 11/10/23

Class - IX
Sub - Physics
Topic - Universal law of gravitation

On roll -
Present -
Absent -

Universal Law of gravitation

$$F = G \frac{m_1 m_2}{r^2}$$

where,
G -- gravitational constant
 m_1 and m_2 ... masses of objects
 r ... distance between two objects.

Home work - Q.] What is the magnitude of gravitational force between earth and a 1 Kg object on its surface?

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teacher gives homework written on blackboard.</p> <p><u>Homework-</u></p> <p>What is the magnitude of gravitational force between earth and 1kg object on its surface?</p> <p>Mass of earth $= 6 \times 10^{24} \text{ kg}$</p> <p>Radius of earth $= 6.4 \times 10^6 \text{ m}$</p>	<p>Students write it down and solve by themselves in their notebooks.</p>

अभिप्राय (Remarks)

Students have understood the concept of gravitational force and have solved the problem correctly. They have also written the formula for gravitational force.

पर्यवेक्षकाची सही
 (Sign. of Supervisor)

पाठांक 8
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Mass and Weight
Topic

पाठ साहित्य chalk, blackboard,
Material Aids dustet

पूर्व ज्ञान Newton's first
Previous Knowledge

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
NOHTCUCDOR ZIH		<ul style="list-style-type: none">*] To enable students to identify weight as a force.*] To recognize the difference between mass and weight of objects.*] to calculate weight forces where acceleration due to gravity may vary.
statement of Aim - Today we		are going to

दिनांक 13/10/23

Date

and their difference

वर्ग

IXth

Class

and second laws of motion

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions

students give satisfactory answers to the asked questions.

Q.1] What is weight of your bag?

Ans] The weight of our bag is 2 kg approx

Q.2] What is the mass of your bag?

Ans] The mass of our bag is 2 kg approximate

Q.3] Are mass and weight the same terms?

Ans] No, mass and weight are two different terms.

Q.4] Is it correct to use mass and weight term in place of each other?

Ans] No, It is not correct to use mass and weight in one another's place.

study Mass and Weight and their difference

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<u>Mass -</u>	1] <u>Knowledge -</u>
	<u>Definition -</u> Mass is the measure of amount of matter in a body.	students are able to know the concept of mass.
	<u>SI Unit -</u> The SI unit of mass is kilogram (kg)	2] <u>Understanding</u>
	<u>Vector or scalar -</u> Mass is a scalar quantity. It has only magnitude.	students are able to understand the properties of mass.
	<u>Properties of Mass -</u>	3] <u>Application -</u>
	1] Mass can never be zero.	students are able to apply characteristics of mass to differentiate mass and weight.
	2] Mass of an object does not change according to the location.	

रणे
ication)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students give appropriate answers to the asked questions

Q 1] What is meant by mass?

Ans] Mass can be stated as the measure of the quantity of matter in an object.

Q 2] Mass can be measured using which apparatus?

Ans] Mass can be measured using the beam balance.

Q 3] What is SI unit of mass?

Ans] The SI unit of mass is kilogram (kg)

Q 4] Is mass a vector or scalar quantity?

Ans] Mass is a scalar quantity

Q 5] What happens to the mass of an object if it is taken to a location with higher gravity?

Ans] The mass of the object remains unchanged or same even if it is taken to a location with higher gravity

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Weight</u> -</p> <p><u>Definition</u> - weight is the measure of the force of gravity acting on a body.</p> <p><u>Formula</u> -</p> $W = mg$ <p>where,</p> <p>w is the weight</p> <p>m is the mass</p> <p>g is the acceleration due to gravity</p> <p><u>SI Unit</u> - The SI unit of weight is Newton (N)</p> <p><u>Properties of Weight</u> -</p> <p>1] weight is a vector quantity</p> <p>2] weight changes according to the location.</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of weight.</p> <p>2] <u>Understanding</u> - students are able to understand the properties of weight.</p> <p>3] <u>Application</u> - students are able to apply characteristics of weight to differentiate mass and weight.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] What is meant by weight?

Ans] Weight is the measure of the force of gravity acting on body.

Q.2] What is the value of acceleration due to gravity on the surface of the earth?

Ans] The value of acceleration due to gravity on the surface of earth is 9.8 m/s^2 .

Q.3] What is the weight of a body of mass 1 kg on earth?

Ans] $W = mg$
 $= 1 \times 9.8$
 $= 9.8 \text{ N}$
 ∴ The weight of the given body is 9.8 N .

Q.4] What is weightlessness?

Ans] Weightlessness is the condition of free fall in which gravity is cancelled by the other forces. It is experienced due to the absence of feeling weight.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] <u>Mass</u> - It is the measure of amount of matter in a body	*] To revise the topic taught in the class.
	2] <u>Weight</u> - It is the measure of force of gravity acting on the body.	*] To evaluate the knowledge gained.
	3] Relationship between mass and weight.	*] To test the knowledge regarding concept of mass and weight.
	4] Weight of object on moon = $\frac{1}{6} \times$ Weight of object on earth $W_m = \frac{1}{6} W_e$	*] To relate the concepts of mass and weight.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] What is the relationship between mass and weight?

Ans] Weight is the mass of a body multiplied by acceleration due to gravity.

$$W = mg$$

Q.2] What is weightlessness?

Ans] It is the condition which is experienced due to the absence of feeling weight.

Q.3] An object weighs 10 N when measured on the surface of the earth. What would be its weight when measured on the surface of the moon?

Ans] $W_e = 10\text{ N}$

$$W_m = \frac{1}{6} W_e$$

$$= \frac{1}{6} \times 10$$

$$= 1.67\text{ N}$$

Thus, the weight of object on the surface of the moon be 1.67 N

$$W_m = \frac{1}{6} W_e$$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize free time</p> <p>*] To create interest in the topic taught</p> <p>*] To understand the concept properly.</p>

फलक सार
Black Board Summary

Date - 13/10/23

Day - Friday

Class - IX

Sub - Physics

Topic - Mass and Weight

On roll -
present -
absent -

Mass -

Mass is the amount of matter in a body.

- mass is measured in kg

Weight -

Weight is the measure of force of gravity acting on a body.

$$W = mg = m \times g$$

Homework - 1] Mass of an object is 10 kg.

What is its weight on the earth?

2] Write difference between mass and weight.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. Homework -	students write it down and solve by themselves in their notebooks.
Mass of an object is kg. What is its weight on the earth?	
Write the difference between mass and weight.	

अभिप्राय (Remarks)

The students are very active and interested in the lesson. They have done their homework very well. I am satisfied with their performance.

पर्यवेक्षकाची सही
 (Sign. of Supervisor)

पाठांक
S.No

9

विषय
Subject

Physics

शाळा
School

V.L. Convent

विषयांश
Topic

Buoyancy

पाठ साहित्य
Material Aids

Chalk, blackboard,
dust etc

पूर्व ज्ञान
Previous Knowledge

Force, pressure

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among students.*] To enable students to know about Buoyancy*] To enable students to understand applications of Buoyancy.
Statement of Aim- Today we are going to		

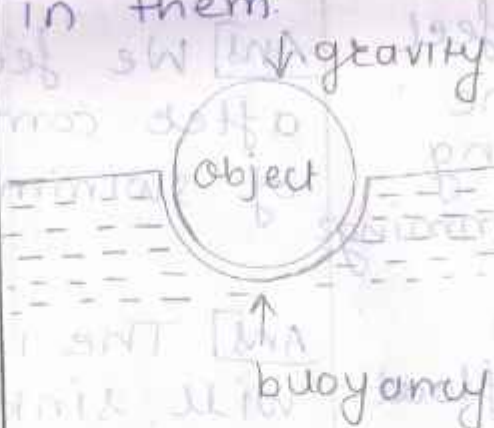
दिनांक 17/10/23
Date

वर्ग IXth
Class

तासिका अवधी 35 min
Length of the Period

अध्यायानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher ask some introductory questions	students give satisfactory answers to the asked questions.
Q.2] How do you feel when you swim in a pool?	Ans] We feel lighter in the pool while swimming.
Q.3] How do you feel when you come out of swimming pool after swimming?	Ans] We feel heavier after coming out of swimming pool.
Q.3] Will an iron nail sink or float when placed in bucket of water?	Ans] The iron nail will sink in the bucket filled with water.
to study about Buoyancy	

पाठ्याच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Buoyancy</u> - Buoyancy is the tendency of an object to float in a fluid.</p> <p>All liquids and gases in the presence of gravity exert an upward force known as buoyant force on any object immersed in them.</p> 	<p>1] <u>Knowledge</u> - Students are able to know about the concept of buoyancy.</p> <p>2] <u>Understanding</u> Students are able to understand why some objects float or sink in liquids.</p> <p>3] <u>Application</u> - Students are able to apply the concept of buoyancy in real life situations.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What is buoyant force?

Ans] Buoyant force is the upward force exerted by fluid on the body immersed in it partially or wholly.

Q2] What is alternative word for buoyancy?

Ans] Upthrust is the alternative word for buoyancy.

Q3] What is the direction of buoyant force experienced by the object immersed in a fluid?

Ans] The direction of buoyant force experienced by an object is always upwards.

Q4] Give an example of buoyancy.

Ans] A boat or ship floating in the water and the floating of cork in water are examples of buoyancy.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Types of buoyancy</u></p> <p>1] <u>Positive buoyancy</u> - When the immersed object is lighter than the fluid, the buoyancy is positive</p> <p>2] <u>Negative buoyancy</u> - When the immersed object is denser than the fluid, then the buoyancy is negative.</p> <p>3] <u>Neutral buoyancy</u> When the weight of the immersed object is equal to the fluid displaced, then the buoyancy is neutral.</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of buoyancy.</p> <p>2] <u>Understanding</u> Students are able to understand why some objects float or sink when immersed in fluid.</p> <p>3] <u>Application</u> - students are able to apply the concept of buoyancy in real life situations.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

students give appropriate answers to the asked questions.

Q] How are buoyancy and density related?

Ans] Buoyancy is directly proportional to the density of the immersed fluid.

Q] What are three types of buoyancy?

Ans] Three types of buoyancy are -

- ① Positive buoyancy
- ② Negative buoyancy
- ③ Neutral buoyancy

Q] Why swimming in sea water is easier than freshwater?

Ans] Swimming in sea water is easier than freshwater because seawater contains more salt than freshwater. So, its density and buoyant force increase which makes it simpler to swim in seawater.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] <u>Buoyancy</u> - Tendency of an object to float in a fluid.	*] To revise the topic taught in the class
	2] <u>Types of buoyancy</u> - a] Positive b] Negative c] Neutral	*] To evaluate the knowledge gained
	3] <u>Buoyant force</u> - Upward force exerted by fluid on the immersed body.	*] To test the knowledge regarding buoyancy and buoyant force
	4] <u>Factors affecting buoyancy</u>	

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students give appropriate answers to the asked questions.

Q.1] What are the primary forces acting on an object when it is submerged in water?

Ans] There are two primary forces acting on an object submerged in water.

- ① gravity
- ② buoyancy

Q.2] Why objects float or sink when placed on the surface of water?

Ans] Objects having density less than that of liquid in which they are immersed, float on the surface of liquid. If the density of the object is more than the density of liquid, then it sinks in liquid.

Q.3] What are factors affecting buoyancy?

Ans] The factors affecting buoyancy are

- ① density of fluid
- ② the volume of the fluid displaced
- ③ acceleration due to gravity.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time.</p> <p>*] To create interest in the topic taught.</p> <p>*] To understand the concept properly.</p>

फलक सार

Black Board Summary

Day - Tuesday

Date - 17/10/23

Class - IX

Sub - Physics

Topic - Buoyancy

on roll -

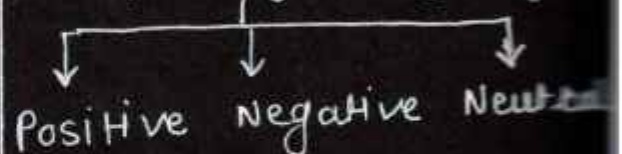
present -

absent -

Buoyancy -

It is the tendency of an object to float in a fluid.

Types of Buoyancy



Homework - 1] How are buoyancy and density related to each other?

2] Why is buoyant force is important in swimming?

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. <u>Homework-</u>	Students write it down and solve by themselves in their respective notebooks.
<p>How are buoyancy and density related to each other?</p> <p>Why is buoyant force important in swimming?</p>	

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक
S.No 10

विषय
Subject Physics

शाळा
School V.L. Convent

विषयांश
Topic Archimedes'

पाठ साहित्य
Material Aids Chalk, blackboard, dustee

पूर्व ज्ञान
Previous Knowledge Density, Mass

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among students*] To enable students to know about Archimede's principle.*] To enable students to understand applications of Archimede's principle.
Aim of statement - Today we are going to		

दिनांक 20/10/23
Date

Principle

वर्ग IXth
Class

Volume of materials

तासिका अवधी 35 min
Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions

Students give satisfactory answers to the asked questions.

Q.1] What happens when you submerge a big stone in a bucket of water?

Ans] The stone will sink to the bottom of the bucket.

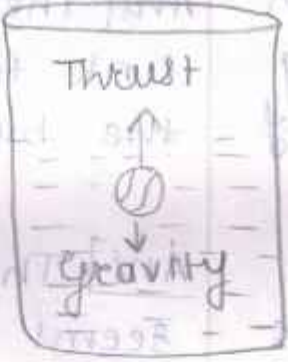
Q.2] What change do you observe in the level of water?

Ans] The level of water seems to be increased after we submerge a big stone in it.

Q.3] Which force is exerted on the body when it is immersed in a fluid?

Ans] The upward buoyant force is exerted on the body when it is immersed in fluid.

to study Archimedes's Principle

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specifications)
P R E S E N T A T I O N	<p><u>Archimedes' Principle-</u></p> <p>The buoyant force is equal to the fluid that body displaces and acts in the upward direction at the center of mass of the displaced fluid.</p>  <p>Apparent weight = Weight of object - Thrust force where, weight of object is in the air & Thrust force is buoyancy</p>	<p>1] <u>Knowledge-</u> students are able to know about concept of Archimedes' Principle</p> <p>2] <u>Understand</u> students are able to understand the actual and apparent weight of objects</p> <p>3] <u>Application</u> students are able to apply concept of Archimedes' Principle in real life examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] What does the Archimedes principle state?

Ans] An object when submerged in a liquid fully or partially, it experiences an upward buoyant force that is equal in magnitude to the force of gravity on the displaced fluid.

Q.2] What is the formula for density of a liquid?

Ans] The density is given by mass divided by volume.

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

Q.3] What is the alternative name for buoyant force?

Ans] Buoyant force is also known as Thrust force.

Q.4] Thrust force is given by which formula?

Ans] Thrust force is given by formula $P \times V \times g$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Archimedes' Principle Formula -</u></p> $F_b = \rho \times g \times V$ <p>where,</p> <p>F_b - buoyant force</p> <p>ρ - density of the fluid</p> <p>g - acceleration due to gravity</p> <p>also,</p> <p>Density (ρ)</p> $= \frac{\text{Mass (M)}}{\text{Volume (V)}}$	<p>1] <u>Knowledge</u> - Students are able to know about the concept of Archimedes' Principle.</p> <p>2] <u>Understanding</u> - Students are able to understand the actual and apparent weight of objects.</p> <p>3] <u>Application</u> - Students are able to apply concept of Archimedes' Principle in real life examples.</p>

अध्ययनानुभव (Learning Experience)

ion)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] When does the object float?

Ans] The object will float when the weight of the water displaced is equal to the weight of the object.

Q.2] What is a hydrometer?

Ans] Hydrometer is a device used for calculating the relative density of liquids.

Q.3] How does the density of a material of body determine whether it will float or sink in the water?

Ans] If a body has a density greater than that of a liquid, it will sink in it but if a body has an average density that is equal to or less than that of the liquid, the body shall float on it.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>1] <u>Archimedes' principle</u>- An object submerged in a fluid, experiences an upward buoyant force that is equal in magnitude to the force of gravity on the displaced fluid.</p> <p>2] <u>Archimedes' principle formula</u>- $F_b = \rho \times g \times V$</p>	<p>*] To revise the topic taught in the class.</p> <p>*] To evaluate the knowledge gained.</p> <p>*] To test the knowledge regarding Archimede's Principle.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] Who discovered the Archimedes' principle?

Ans] Greek mathematician Archimedes discovered the Archimedes' principle.

Q.2] Where is the Archimedes' principle used?

Ans] Archimedes' principle is used in design of ships and submarines.

Q.3] If density of water is 1000 kg m^{-3} , and volume of a steel ball is 1 m^3 , then, find the resulting force using the Archimedes' principle.

Ans] According to Archimedes' principle

$$F_b = \rho \times g \times V$$

$$= 1000 \times 9.8 \times 1$$

$$= 9800 \text{ N}$$

(∴ The resulting force will be 9800 N)

Q.4] Give some applications of Archimedes' principle.

Ans] Some of the applications of Archimedes' principle are hot air balloon, hydrometer and submarine.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<ul style="list-style-type: none"> *] To utilize the free time. *] To create interest in the topic taught *] To understand the concept properly.

फलक सार
Black Board Summary

Day - Friday

Date - 20/10/23

Class - IX

Sub - Physics

Topic - Archimede's
Principle

on roll -

Present -

Absent -

The buoyant force is equal to the fluid that body displaces and acts in upward direction at the center of mass of liquid

$$F_b = \rho \times g \times V$$

where,

F_b -- buoyant force

ρ -- density of fluid

g -- acceleration due to gravity

Homework - Q] Write the applications of Archimede's Principle.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard. Homework -	Students write it down and solve by themselves in their notebooks.
Write applications of Archimede's principle?	

अभिप्राय (Remarks)

Students of []
 of students
 know about
 the concept
 of work
 of work
 of work

पर्यवेक्षकाची सही

(Sign. of Supervisor)

Today we are going to

पाठांक 11
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Work and Units
Topic

पाठ साहित्य Chalk, blackboard,
Material Aids dustet

पूर्व ज्ञान Force, displacement
Previous Knowledge

पाठान्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		<p>*] To develop thinking, reasoning and imagination among the students.</p> <p>*] To enable students to know about the concept of work.</p> <p>*] To enable students to understand practical applications of work</p>
statement of Aim - Today we are going to		

दिनांक 25/10/23
Date

वर्ग IX
Class

तासिका अवधी 35 min
Length of the Period

and directions of
force and displacement

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some
introductory questions

Students give satisfactory
answers to the
asked questions.

Q1] If I am reading
a book. Is work
done here?

Ans] No, the work is not
done while reading
a book.

Q2] If a boy is pulling
a toy car with a
string, is work
done here?

Ans] Yes, the work is
done by the boy on
the toy car by pulling
the string.

Q3] Is there a difference
in meaning of work
done in our day to
day life and in
physics?

Ans] Yes, there is a difference.
In day to day life, if
mental or physical
efforts are applied, we say
that work is done.

to learn about work done and its units

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Work Done-</u></p> <p>Work is said to be done when a force displaces a body through certain distance in the direction of force.</p> <p><u>For example-</u></p> <p>A bullock pulling a cart, the cart moves. The bullock pulls the cart with a force which moves the cart in the direction of force and hence, the work is said to be done.</p> <p>Work done depends upon two factors</p> <ol style="list-style-type: none"> ① Force ② Displacement 	<p>1] <u>Knowledge-</u> students are able to know about the concept of work done.</p> <p>2] <u>Understanding-</u> students are able to understand the meaning of work done.</p> <p>3] <u>Application-</u> students are able to apply the concept of work done in real life examples.</p>

टीकरणे
ecification

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

1] What is work done?

Ans] When a force causes displacement in the same direction or opposite direction of force.

2] say, if the work is done or not in the following cases.

a] Suma is swimming in a pond

Ans] Yes, the work is done
 $W = F \times S$

b] An engine is pulling a train.

Ans] Yes, the work is done

c] Food grains are getting dried in the sun.

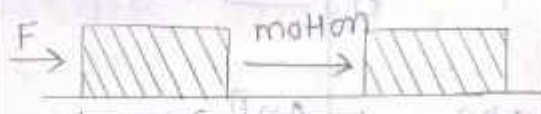
Ans] No, the work is not done.

d] A sailboat is moving due to the wind energy.

Ans] Yes, the work is done.

e] A green plant is carrying out photosynthesis.

Ans] No, the work is not done.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specifications)
	<p><u>Measurement of Work -</u></p> <p>Let a constant force F is acting on an object and displaces the object through a distance s in the direction of force applied then</p> <p>Work done $= \text{Force} \times \text{displacement}$ $W = F \times s$</p>  <p>If $F = 1 \text{ N}$ and $s = 1 \text{ m}$ then $W = 1 \text{ Nm}$ or 1 Joule</p>	<p>1] <u>Knowledge</u> - students are able to know about the concept of work done</p> <p>2] <u>Understanding</u> - students are able to understand the meaning of work done.</p> <p>3] <u>Application</u> - students are able to apply the concept of work done in real life examples/situations.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] A force of 5N is acting on an object displaced through 2m in the direction of force. What is the work done?

Ans] Work done = $F \times s$
 $= 5 \times 2$
 $= 10 \text{ Nm}$
 or 10J
 \therefore The work done is 10J

Q.2] What are units of work done?

Ans] The units of work done are Nm or Joule

Q.3] If direction of force is perpendicular to the direction of displacement, then how much work is done?

Ans] If direction of force is perpendicular to the direction of displacement, then the work done will be zero.

Q.4] What is the work done by force of gravity on a satellite moving round the earth?

Ans] Force of gravity on the satellite is perpendicular to the displacement so, the work done on the satellite by the earth is zero.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>1] <u>Work</u> - Two conditions are required - a] Force b] Displacement</p> <p>2] <u>Expression of work done</u> $W = F \times S$</p> <p>3] <u>Measurement</u> <u>Unit of work done</u> Nm or Joule</p>	<p>*] To revise the topic taught in the class.</p> <p>*] To evaluate the knowledge gained by students.</p> <p>*] To test the knowledge regarding work and its examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What is the expression for work done?

Ans] Work done is given by the expression.

$$W = F \times S$$

where W is the work done

F is the force

and S is the displacement

Q2] What is the work done in the following cases?

Q1] Direction of force and displacement are same.

Ans] The work done is positive.

Q2] Direction of force and displacement are opposite.

Ans] The work done is negative.

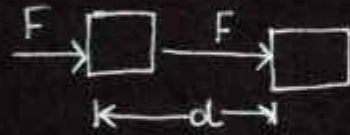
Q3] Direction of force and displacement are perpendicular.

Ans] The work done is zero.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time.</p> <p>*] To create interest in the topic taught.</p> <p>*] To understand the taught concept thoroughly.</p>

फलक सार
Black Board Summary

Day - Wednesday class - IX on roll -
Date - 25/10/23 sub - Physics present -
Topic - work done absent -

<p>Work done = $F \times d$ = Force \times displacement</p> 	<p>Unit of work done - Nm or Joule (J)</p> <p>$W = F \times d$ = $1\text{ N} \times 1\text{ m}$ = 1 Nm or 1 Joule</p>
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Homework - Q] A force of 7 N acts on an object. The displacement is 8 m in the direction of force. What is work done?

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on the blackboard.
Homework -

students write it down and solve by themselves in their respective notebooks.

1] A force of 7N acts on an object. The displacement is 8m in the direction of force. What is the work done?

2] Define 1 J of work.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No 12
 शाळा School V.L. convent
 पाठ साहित्य Material Aids Chalk, dustee blackboard
 विषय Subject Physics
 विषयांश Topic Energy - 1] kine
 पूर्व ज्ञान Previous Knowledge Work, mass an

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specificati
I N T R O D U C T I O N		<ul style="list-style-type: none"> *] To develop thinking, reasoning and imagination among the students. *] To enable students to know about the concept of kinetic Energy *] To enable students to understand practical applications of kinetic Energy
Statement of Aim- Today we		are going to

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<u>Energy</u> - Energy possessed by an object is its capacity of doing work.	1] <u>Knowledge</u> - students are able to know about the concept of Kinetic Energy
	<u>Unit of Energy</u> - Unit of Energy is same as that of work i.e. Joules	2] <u>Understanding</u> Students are able to under- stand the energy acquired by the motion of an object
	<u>Forms of Energy</u> - 1] Mechanical Energy → a] Kinetic Energy b] Potential Energy	3] <u>Application</u> - Students are able to apply the concept of Kinetic Energy to the real life situations.
	2] Heat Energy	
	3] Light Energy	
4] Chemical Energy		
5] Electrical Energy		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q-1] What is Energy?

Ans] Energy is the capacity of doing work.

Q-2] Define 1 J of energy.

Ans] 1 J is the energy required to do 1 J of work.

Q-3] 1 kJ = ?

Ans] 1 kJ = 1000 J

Q-4] Can a moving object do work?

Ans] Yes, a moving object possesses energy, so, it can do work.

Q-5] What is mechanical energy?

Ans] Mechanical energy is the sum of its kinetic and potential energy at given point of time.

पाठ्याच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Kinetic Energy</u> -</p> <p>The energy possessed by an object in motion is kinetic Energy.</p> $E_k = \frac{1}{2} m v^2$ <p>E_k - kinetic Energy m - mass of object v - velocity</p> <p><u>Examples</u> -</p> <ol style="list-style-type: none"> 1] A falling coconut 2] a speeding car 3] a flying aircraft 4] a running athlete <p><u>Unit of KE</u> -</p> <p>Joules (J)</p>	<ol style="list-style-type: none"> 1] <u>Knowledge</u> - students are able to know the concept of kinetic Energy. 2] <u>Understanding</u> - students are able to understand the energy acquired by the motion of an object. 3] <u>Application</u> - Students are able to apply concept of kinetic Energy to real life situations.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q-1] What is Kinetic Energy?

Ans] The energy possessed by an object due to its motion is Kinetic Energy.

Q-2] What is mathematical expression for Kinetic Energy?

Ans] The mathematical expression for Kinetic Energy is

$$E_k = \frac{1}{2}mv^2$$

Q-3] What is the alternative formula for Kinetic Energy?

Ans] The formula for work done is
 $W = \text{change in Kinetic Energy}$
 $= E_{kf} - E_{ki}$
 $= \text{Final KE} - \text{Initial KE}$

Q-4] If an object is at rest, how much Kinetic Energy does it has?

Ans] An object at rest has zero Kinetic Energy.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Energy	*] To revise the topic taught in the class.
	2] Unit of Energy	
	3] Forms of Energy	*] To evaluate the knowledge gained by students.
	4] Kinetic Energy	
	5] Expression of Kinetic Energy	*] To test the knowledge regarding Energy and its types.
	6] Examples of Kinetic Energy	
	7] Unit of Kinetic Energy.	

टीकरणे
recification)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

students give appropriate answers to the asked questions.

Q 1] A ball has a mass of 2 kg. It travels at 10 m/s. Find the KE possessed by the body.

Ans] $m = 2 \text{ kg}$
 $v = 10 \text{ m/s}$

Kinetic energy possessed by the body $= \frac{1}{2} m v^2$
 $= \frac{1}{2} \times 2 \times 10 \times 10$
 $= 100 \text{ J}$

Q 2] Which mechanical energy exists in moving bodies?

Ans] Kinetic energy exists in moving bodies.

Q 3] If the speed of a body is doubled, then its kinetic energy will be?

Ans] If the speed of a body is doubled, then its kinetic energy will be quadrupled.

Q 4] What will happen to the kinetic energy of a body if its mass is doubled?

Ans] If the mass of a body is doubled, then its kinetic energy will be doubled.

पाठ्याच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilise the free time</p> <p>*] To create interest in the topic taught.</p> <p>*] To understand the taught concept properly</p>

फलक सार
Black Board Summary

Date - 27/10/23

Class - IX

Day - Friday

Sub - Physics

Topic - Kinetic Energy

on roll -
present -
absent -

Kinetic Energy

$$E_k = \frac{1}{2} m v^2$$

where,

E_k -- kinetic Energy
 m ... mass of object
 v ... velocity

$$E_{kf} = \frac{1}{2} m v^2$$

$$E_{ki} = \frac{1}{2} m u^2$$

$$W = E_{kf} - E_{ki}$$

unit of KE is Joules (J)

Homework - 1] An object of mass 15 kg is moving with a uniform velocity of 4 ms^{-1} . What is the kinetic energy of the body.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. Homework -	students write it down and solve by themselves in their respective notebooks.
1] An object of mass 15 kg is moving with a uniform velocity of 4ms^{-1} . What is the kinetic Energy of the body? 2] state the law of conservation of energy.	[Blank space for student answers]

अभिप्राय (Remarks)

[Blank space for teacher's remarks]

पर्यवेक्षकाची सही
(Sign. of Supervisor)

[Blank space for supervisor's signature]

पाठांक
S.No 13

विषय
Subject Physics

शाळा
School V.L. Convent

विषयांश
Topic [Energy - 2] Poten

पाठ साहित्य
Material Aids Chalk, blackboard,
duster

पूर्व ज्ञान
Previous Knowledge Mechanical Energy

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specificati
I N T R O D U C T I O N		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among the students.*] To enable students to know the concept of Potential Energy*] To enable students to understand practical applications of Potential Energy.
Statement of Aim - Today we are going		

दिनांक 31/10/23
Date

Energy and its Examples

वर्ग IX
Class

Kinetic Energy

तासिका अवधी 35 min
Length of the Period

अध्यायनानुभव Learning Experience

वर्गीकरण

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions

Students give satisfactory answers to the asked questions

Q 1] What is mechanical Energy of a body?

Ans] Mechanical Energy is the sum of kinetic and potential energy of the body at given point of time.

Q 2] If a body is at rest, what kind of energy will it have?

Ans] If a body is at rest, it will possess potential energy.

Q 3] A toy car on key, when placed on ground starts moving. From where did it gain its energy from?

Ans] A toy car with key has wound spring. It gets energy from the number of windings of the key.

to learn about Potential Energy

पाठ्याचा पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Potential Energy</u> - The energy possessed by a body due to its change in the position or shape is called potential energy.</p> <p><u>Examples</u> -</p> <ol style="list-style-type: none"> 1] An arrow and the stretched string on the bow. 2] A stretched rubber band 3] An object kept at a certain height. 4] A toy car with spring windings and a key. <p><u>Unit of PE</u> - The unit of PE is Joules (J)</p>	<ol style="list-style-type: none"> 1] <u>Knowledge</u> - students are able to know the concept of potential Energy. 2] <u>Understanding</u> - students are able to understand energy possessed by virtue of position. 3] <u>Application</u> - students are able to apply the concept of potential energy in real life situations.

रणे

अध्ययनानुभव (Learning Experience)

क्तियों

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

1] What is potential energy?

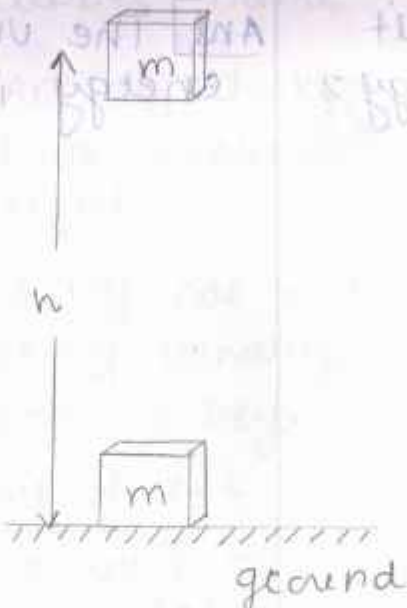
Ans] The energy possessed by a body due to the virtue of its position or change in shape is called potential energy.

2] What is the value of acceleration due to gravity on earth?

Ans] The value of 'g' i.e. acceleration due to gravity on the earth is $g = 9.8 \text{ m/s}^2$.

3] What is the unit of potential energy?

Ans] The unit of potential energy is Joules (J).

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Mathematical Expression of PE -</u></p> <p>The gravitational potential energy of an object of mass m, raised through a height h from the earth's surface is given by</p> $E_p = m \times g \times h$ $= mgh$ 	<p>1] <u>Knowledge</u> - students are able to know the concept of potential energy and its unit.</p> <p>2] <u>Understanding</u> - students are able to understand the energy possessed by object due to virtue of position.</p> <p>3] <u>Application</u> - students are able to apply the concept of potential energy to real life situations.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students give appropriate answers to the asked questions.

Q] Can a body possess energy even if it is not in motion?

Ans] Yes, the body can possess potential energy even if it is not in motion.

Q] Name the energy possessed by a stretched rubber band lying on table.

Ans] The energy possessed by a stretched rubber band is potential energy.

Q] What is the mathematical expression of potential energy?

Ans] Potential energy of an object of mass m , kept at a height h can be given by $E_p = mgh$

Q] Find the energy possessed by an object of mass 10 kg when it is at a height of 6m above the ground?

Ans] $m = 10 \text{ kg}$
 $h = 6 \text{ m}$
 $E_p = mgh$
 $= 10 \times 9.8 \times 6$
 $= 588 \text{ J}$

(The potential energy of the given object is 588 J)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Potential Energy 2] Examples of PE 3] Unit of PE 4] Mathematical Expression of Potential Energy $m = 10 \text{ kg}$ $h = 5 \text{ m}$ $E_p = mgh = 10 \times 9.8 \times 5 = 490 \text{ J}$	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by students. *] To test the knowledge of students regarding potential energy.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teachers ask some questions related to the topic.</p>	<p>Students give appropriate answers to the asked questions.</p>
<p>Q 1] What will be the total energy of a body falling freely towards the earth?</p>	<p>Ans] The total energy of a body freely falling towards earth remains constant.</p>
<p>Q 2] An object of mass 12 kg is at a certain height above the ground. If $E_p = 480\text{J}$, then find the height?</p>	<p>Ans] $m = 12\text{kg}$ $E_p = 480\text{J}$ $E_p = mgh$ $h = \frac{E_p}{mg} = \frac{480}{12 \times 10} = 4\text{m}$</p>
<p>Q 3] Define potential energy.</p>	<p>Ans] It is the energy possessed by the body due to its position or configuration.</p>
<p>Q 4] Define kinetic energy.</p>	<p>Ans] It is the energy possessed by the body due to its motion.</p>

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilise the free time</p> <p>*] To create interest in the topic taught.</p> <p>*] To understand the concept properly</p>

फलक सार
Black Board Summary

Day - Tuesday
Date - 31/10/23

Class - IX

On roll -
Present -
absent -

Sub - Physics

Topic - Potential Energy

Potential energy is possessed by a body due to its change in the position or shape is called potential energy

Potential Energy

$$E_p = m \times g \times h = mgh$$

Where,

E_p ... potential energy

m ... mass of object

g ... acceleration due to gravity

Homework - Q] An object of mass 10 kg is at a certain height above the ground. If PE of the object is 100 J, find the height at which the object is placed.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teacher gives homework written on blackboard</p> <p><u>Homework -</u></p> <p>Q.1] An object of mass 10kg is at a certain height above the ground. If potential energy of the object is 100 J, find the height at which the object is placed. (Take $g = 10\text{ m/s}^2$)</p>	<p>students write it down and solve by themselves in their notebooks.</p>

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 14
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Law of conseeva-
Topic

पाठ साहित्य chalk, dustek,
Material Aids blackboard

पूर्व ज्ञान Forms of Energy
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among the students.*] To enable students to know the concept of law conservation of energy*] To enable students to understand the applications of law of consevation of energy
statement of Aim - Today we are going		

दिनांक

20/11/23

Date

वर्ग

IX

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती

Teacher's Activities

Teachers ask some introductory questions

Q.1] The electric bulb in your home needs which type of energy?

Q.2] The electric bulb provides which type of energy to us?

Q.3] How does the electric energy gets converted to heat and light energy?

छात्र कृती

Student's Activities

Students give appropriate answers of the asked questions.

Ans] The electric bulb needs electricity or electric energy to work.

Ans] The electric bulb emits light and gives heat energy.

Ans] The mechanism of an electric bulb makes the conversion of electric energy to heat and light energy.

To learn Law of conservation of Energy.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
<p style="text-align: center;">P R E S E N T A T I O N</p>	<p><u>Law of conservation of Energy -</u> Energy can neither be created nor be destroyed. It can only be converted from one form to another. The total energy before and after the transformation remains the same. <u>Examples -</u> 1] In a loudspeaker, electrical energy is converted into sound energy. 2] In a microphone, sound energy is converted into electrical energy.</p>	<p>1] <u>Knowledge</u> - students are able to know concept of Law of conservation of energy. 2] <u>Understanding</u> - students are able to understand that total energy of a system remains constant. 3] <u>Application</u> - students are able to apply the concept to real life energy conversions.</p>

अध्ययनानुभव (Learning Experience)

a) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
Q.1] Can we convert energy from one form to another form?	Ans] Yes, many human activities and gadgets we use involve conversion of energy from one form to another.
Q.2] What is energy?	Ans] Energy is the ability to do work.
Q.3] Which types of energy can be seen when a block slides down a slope?	Ans] When a block slides down a slope, potential energy is converted to kinetic energy.
Q.4] What energy is stored in reservoir water?	Ans] Potential energy is stored in reservoir water.
Q.5] What happens to the potential energy of a spring that is either compressed or stretched?	Ans] The potential energy of a stretched or compressed spring increases.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Conservation of Mechanical Energy</u></p> <p><u>At height H:</u> $E_p = mgh$ $E_k = 0$ <u>Total = mgh</u></p> <p><u>At height h:</u> $E_p = mgh$ $E_k = \frac{1}{2}mv^2$ $v = \sqrt{2g(H-h)}$ $E_k = \frac{1}{2}m(2g(H-h))$ $= mgh - mgh$ <u>Total = mgh</u></p> <p><u>At height zero:</u> $E_p = 0$ $E_k = \frac{1}{2}mv^2$ $v = \sqrt{2gH}$ $E_k = \frac{1}{2}m \times 2gH = mgh$ <u>Total = mgh</u></p>	<p>1] <u>Knowledge</u>- Students are able to know the concept of conservation of mechanical energy.</p> <p>2] <u>Understanding</u>- students are able to understand that Total mechanical energy is constant in a system.</p> <p>3] <u>Application</u>- students are able to apply the concept of conservation of mechanical energy to real life situations.</p>

वर्णन
विवरण

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] State the principle of conservation of mechanical energy.

Ans] The total mechanical energy of the system is conserved.

$$\begin{aligned}ME &= KE + PE \\ &= \frac{1}{2}mv^2 + mgh \\ &= \text{constant}\end{aligned}$$

Q.2] Give an example where heat energy is conserved into mechanical energy.

Ans] In a heat engine, heat energy is converted into mechanical energy.

Q.3] Is kinetic energy conserved in elastic collisions?

Ans] Yes, kinetic energy is conserved in elastic collisions.

Q.4] The process that allows complete conversion of mechanical energy is reversible or irreversible?

Ans] The process that allows complete conversion of mechanical energy is reversible in its nature.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>1] Law of conservation of Energy</p> <p>2] Examples of Law of conservation of energy</p> <p>3] Conservation of mechanical energy at various heights</p> $\frac{1}{2}mv^2 + mgh = \text{constant}$	<p>*] To revise the topic taught in the class.</p> <p>*] To evaluate the knowledge gained by students.</p> <p>*] To test the knowledge of students regarding law of conservation of energy.</p>

अध्ययनानुभव (Learning Experience)

रण	शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
203 194 104	Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
11 24 39	1] state the law of conservation of energy.	Ans] In a closed system, a system that is isolated from its surroundings, the total energy of the system is conserved.
15 110 124 311	2] give an example where potential energy is converted into kinetic energy.	Ans] When a bomb explodes, potential energy is converted into kinetic energy.
15 103 03	3] give an example to prove that energy is conserved.	Ans] A moving car proves that potential energy is converted into kinetic energy.
11 110 113 30	4] Name a device that converts electrical energy into mechanical energy.	Ans] An electric motor converts electrical energy into mechanical energy.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time of the topic</p> <p>*] To create interest in the topic taught</p> <p>*] To understand the concept properly.</p>

फलक सार
Black Board Summary

Date- 20/11/23

Day- Monday

Class- IX

Sub- physics

Topic- Law of conservation of Energy

On roll-
Present-
Absent-

According to the law of conservation of energy total mechanical energy of the system is conserved.

$$E_M = E_K + E_p$$

$$= \frac{1}{2}mv^2 + mgh$$

$$= \text{constant.}$$

Home work - 1] State the law of conservation of energy.
2] Give two examples of conservation of energy.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard.	students write it down and solve in their respective notebooks.
State the law of conservation of Energy.	
Give two examples of conservation of energy.	

अभिप्राय (Remarks)	
<p>Students are able to understand the concept of conservation of energy.</p>	
<p>Students are able to give two examples of conservation of energy.</p>	

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठक 15
S No.

विषय Physics
Subject

शाळा V.L. convent
School

विषयांश Power
Topic

पाठ साहित्य Chalk, blackboard,
Material Aids Dustet

पूर्व ज्ञान Work, Energy
Previous Knowledge

पाठच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among the students.*] To enable students to know the concept of Power.*] To enable students to identify the applications of Power.
statement of Aim - Today, we are going to		

दिनांक 22/11/23
Date

वर्ग IX
Class

तासिका अवधी 35 min
Length of the Period

egy and Time

अध्यायनानुभव Learning Experience

शिक्षक
cification

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teachers ask some introductory questions.

students give appropriate answers of the asked questions.

Q-1] Do all of us walk at the same rate?

Ans] No, all of us do not walk at the same rate.

Q-2] Consider two children A and B weighing same. If they start climbing a rope, will they take same time?

Ans] No, both the children will take different time even if their weights are same.

Q-3] In above question, who will do more work and who will take less time?

Ans] The stronger person will do work in less amount of time.

to learn about Power

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Concept of Power</u> - Consider two children A and B. Let us say that they weigh the same. Both start climbing up a rope separately. Both reach a height of 8m. A takes 15 sec while B takes 20 sec.</p> <p>Here, the work done by both is same. A has taken less time to do work than B. A has done more work in given time and B has done lesser time work in given time.</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of power along with its units.</p> <p>2] <u>Understanding</u> - students are able to know and understand the representation of Power.</p> <p>3] <u>Application</u> - students are able to apply the concept of Power in real life situations.</p>

अध्ययनानुभव (Learning Experience)

अध्यापक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
ask some questions related to this topic	students give appropriate answers to the asked questions.
If you want to cover a long distance, would you prefer a car or a scooter?	Ans] If we want to cover a long distance, we will prefer a car over scooter.
Is power of car more than scooter?	Ans] Yes, power of car is more than power of a scooter.
What can you conclude about above example?	Ans] A more powerful vehicle would complete journey in a shorter time than a less powerful one.
What does the power measure?	Ans] Power measures the speed of the work done.
Does power of an agent remains the same?	Ans] No, the power of an agent varies with time.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Definition of Power</u></p> <p>The rate of doing work or the rate of transfer of energy.</p> <p><u>Mathematical Expression for Power</u></p> <p>If a person does a work 'W' in given time 't' then power is given by,</p> $\text{Power} = \frac{\text{work}}{\text{time}}$ $P = \frac{W}{t}$ <p><u>Average power</u></p> $P = \frac{\text{Total energy consumed}}{\text{Total time taken}}$ <p><u>Unit of Power</u> - watt (W)</p>	<p>1] <u>Knowledge</u> - Students are able to know the concept of power along with its units.</p> <p>2] <u>Understanding</u> - Students are able to understand the representation of Power.</p> <p>3] <u>Application</u> - Students are able to apply the concept of Power in real life situations.</p>

अध्ययनानुभव (Learning Experience)

n)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students give appropriate answers to the asked questions

Q.1] Define Power?

Ans] Power is the rate of doing work.

Q.2] What is the formula for Power?

Ans] The power can be calculated with the help of expression

$$\text{Power} = \frac{\text{Work}}{\text{Time}} \Rightarrow P = \frac{W}{t}$$

Q.3] What is the unit of Power?

Ans] The unit of Power is watt.

Q.4] The unit of Power was named in whose honour?

Ans] The unit of power Watt is named in the honour of James Watt (1736 - 1819)

Q.5] If a girl having weight 400N climbs up a rope through a height of 8m in 20sec. What is the power expended by the girl?

Ans] weight of the girl

$$mg = 400 \text{ N}$$

$$\text{height} = 8 \text{ m}$$

$$\text{Time} = 20 \text{ sec}$$

$$P = \frac{W}{t} = \frac{mgh}{t}$$

$$= \frac{400 \times 8}{20}$$

$$= 160 \text{ W}$$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
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R E C A P I T U L A T I O N	1] Concept of Power	*] To revise the topic taught in the class.
	2] Definition of Power	
	3] Mathematical Expression of Power	*] To evaluate the knowledge gained by students.
	4] Average Power	
	5] Unit of Power	*] To test the knowledge of students regarding the concept Power.

$$P = \frac{W}{t}$$

$$8 \times 1000 = \dots$$

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] Do an agent does some work at given interval of time?

Ans] No, the agent may be doing work at different rates at different intervals of time.

Q.2] Define 1 watt of power?

Ans] 1 watt is the power of an agent which does work at the rate of 1 joule per second.

$$1 \text{ watt} = \frac{1 \text{ joule}}{1 \text{ sec.}}$$

Q.3] Complete the formula for 1 kW.

Ans] $1 \text{ kW} = 1000 \text{ watts}$

Q.4] Define average power?

Ans] We obtain average power by dividing the total energy consumed by the total time taken.

$$\text{Average power} = \frac{\text{Total energy consumed}}{\text{Total time taken}}$$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time.</p> <p>*] To create interest in the topic taught.</p> <p>*] To understand the taught concept properly.</p>

फलक सार
Black Board Summary

Day - Wednesday

Class - IX

on roll -

Date - 22/11/23

Sub - Physics

Present -

Topic - Power

Absent -

Power is the rate of doing work or the rate of transfer of energy.

$$\text{Power} = \frac{\text{Work}}{\text{Time}}$$

$$= \frac{W}{t}$$

Unit of Power is Watt (W)

Homework - 1] A boy of mass 50 kg runs up to a staircase of 45 steps in 9 sec. If the height of each step is 15 cm. Find his power. (Take $g = 10 \text{ m s}^{-2}$)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard.	students write it down and solve in their respective notebooks.
A boy of mass 50 kg goes up a staircase of 45 steps in 9s. If the height of each step is 15 cm, find the power. (Take $g = 10 \text{ m/s}^2$)	[Blank space for student activity]

अभिप्राय (Remarks)

[Blank space for teacher remarks]	[Blank space for student remarks]
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पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 16
S.No

विषय physics
Subject

शाळा V.L. Convent
School

विषयांश Thrust and Pressure
Topic

पाठ साहित्य chalk, black board,
Material Aids dustee

पूर्व ज्ञान Area, mass
Previous Knowledge

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशेषण Objectives with Specifications
I N T R O D U C T I O N		<ul style="list-style-type: none">*] To develop thinking, reasoning and imagination among students*] To enable students to know the concept of Thrust and Pressure*] To enable students to identify the applications of Thrust and Pressure
statement of Aim - Today, we are going to		

दिनांक

24/11/23

Date

वर्ग

IX

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Q.1] What does a doctor use to take blood tests?

Ans] Doctors use a syringe to take blood test.

Q.2] How does vacuum cleaner in your home work?

Ans] A vacuum cleaner has a fan fixed inside it creates low pressure inside it. So, air and dirt particles are captured by force into the device.

to study force, Thrust and Pressure

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<u>Thrust</u> Thrust is the force acting normally on a surface. $Thrust = F = mxg$	1] <u>Knowledge</u> - students are able to know the concept of Thrust.
	<u>Unit of Thrust</u> The unit of Thrust is same as that of force. It is N Newton.	2] <u>Understanding</u> - students are able to understand the concept of Thrust.
	Thrust is a vector quantity.	3] <u>Application</u> - students are able to apply the concept of Thrust in real life applications.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Q.1] What is Thrust?

Students give appropriate answers to the asked questions.

Ans] Thrust is the force acting normally on a surface.

Q.2] What is the direction of Thrust?

Ans] The Thrust is the force acting in the opposite direction of the force of gravity.

Q.3] Give an example of Thrust.

Ans] The pressure that is applied on a wooden block in a direction perpendicular to it, is known as Thrust.

Q.4] A wooden block is kept on the table, the mass of the block is 5 kg. Find the Thrust it exerts on the table.

Ans] Mass of the block = 5 kg
 $\text{Thrust } F = m \times g$
 $= 5 \times 9.8$
 $= 49 \text{ N}$

(∴ Thrust exerted by the block on table top is 49 N)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Pressure</u></p> <p>Pressure is defined as the force per unit area.</p> <p>If a force is applied on a surface of area A, then pressure P is defined as,</p> $P = \frac{F}{A}$ <p><u>Unit of Pressure-</u></p> <p>The unit of pressure is $N m^{-2}$.</p> <p>Also called as Pascal (Pa)</p> <p><u>Pressure applied by Fluid</u></p> $Pressure = \frac{Thrust}{Area}$	<p>1] <u>Knowledge</u> - students are able to know the concept of Pressure.</p> <p>2] <u>Understanding</u> students are able to understand the concept of Pressure with Examples.</p> <p>3] <u>Application</u> students are able to apply the concept of pressure to the real life situations.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
<p>Teachers ask some questions related to the topic</p>	<p>Students give appropriate answers to the asked questions</p>
<p>1] What is pressure?</p>	<p>Ans] The force applied perpendicular to the surface of an object per unit area over which that force is distributed is called as pressure.</p>
<p>2] The unit Pascal is named in whose honour?</p>	<p>Ans] The SI unit Pascal is named in honour of scientist Blaise Pascal.</p>
<p>3] Give an example of pressure?</p>	<p>Ans] When a block of wood is kept on a table, it exerts pressure on table.</p>
<p>4] Define Pascal</p>	<p>Ans] A pascal can be defined as a force of one newton applied over a surface area of a one-metre square.</p>

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Thrust	*] To revise
	2] Unit of Thrust	the topic
	3] Pressure	taught in
	4] Unit of Pressure	the class
	5] Pressure applied by the fluid	*] To evaluate the knowledge gained by students *] To test the knowledge of students regarding the concept of Thrust and Pressure

श्रीकरणे
Specification)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

students give appropriate answers to the asked questions.

1] A block of wood is kept on a tabletop. The mass of the block is 5kg and dimensions are 40cm x 20cm x 10cm. Find the pressure exerted on the table.

Ans] $m = 5 \text{ kg}$
 $F = m \times g$
 $= 5 \times 9.8 = 49 \text{ N}$
 $\text{Area} = l \times b$
 $= 40 \times 20 = 800 \text{ cm}^2$
 $= 0.08 \text{ m}^2$
 $\text{Pressure} = \frac{\text{Thrust}}{\text{Area}} = \frac{49}{0.08}$
 $= 612.5 \text{ Nm}^{-2}$

2] The energy used in one hour at the rate of 1kW is known as —

Ans] The energy used in an hour at the rate of 1kW is 1kWh.

3] Why is it difficult to hold a school bag having a strap made of a thin and strong string?

Ans] It is difficult to hold a school bag having a thin strap because the pressure on the shoulders is quite large. The smaller the surface area, the larger will be the pressure on the surface.

पाठ्याच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time</p> <p>*] To create interest in the topic taught</p> <p>*] To understand the taught concept properly</p>

फलक सार
Black Board Summary

Day - Friday
Date - 24/11/23

Class - IX
Sub - Physics
Topic - Thrust and Pressure

on roll -
present -
absent -

Pressure =

$$P = \frac{F}{A}$$

unit of pressure is
(Nm^{-2})

Thrust =

$$F = mg$$

unit of thrust is
Newton (N)

Homework - 1] How much pressure is exerted by force of 50,000 N acting on 2.5 m^2 ?

अध्ययनानुभव (Learning Experience)

FL

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. Homework -	students write it down and solve in their respective notebooks.
Q] What pressure is exerted by force of 50000 N acting on 2.5 m ² ?	

अभिप्राय (Remarks)

<p>Students know the concept of pressure.</p> <p>Students are able to understand the application of pressure.</p>	
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पर्यवेक्षकाची सही
 (Sign. of Supervisor)

पाठांक 17
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Production and
Topic

पाठ साहित्य chalk, dustee
Material Aids blackboard

पूर्व ज्ञान Sources of sound
Previous Knowledge

पाठ्याच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		<p>*] To develop thinking, reasoning and imagination among students</p> <p>*] To enable students to know the concept of sound</p> <p>*] To enable students to understand the application of sound</p>
Statement of Aim - Today, we are going		

दिनांक

Date 25/11/23

वर्ग

Class IX

तासिका अवधी

Length of the Period

35 min

propagation of sound

basics of waves

अध्यायनानुभव Learning Experience

अध्यापक कृती

Teacher's Activities

छात्र कृती

Student's Activities

Teachers ask some introductory questions

Students give appropriate answers to the asked questions.

Q.1] Which sounds do you hear everyday?

Ans] Everyday we hear sounds from various sources like humans, birds, machines, radios, televisions.

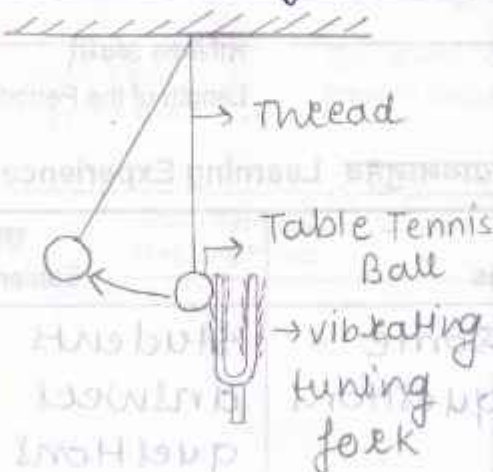
Q.2] Is sound a form of energy?

Ans] Yes, sound is a form of energy like light, heat and mechanical energy.

Q.3] What kind of sensation does sound create?

Ans] Sound produces a sensation of hearing in our ears.

to learn about sound production and propagation.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
<p style="text-align: center;">P R E S E N T A T I O N</p>	<p style="text-align: center;"><u>Production of sound</u></p>  <p>Sound is produced when an object vibrates, creating a pressure wave.</p> <p>When a table tennis ball strikes a tuning fork, it produces sound.</p> <p>We set objects vibrating and produce sounds.</p>	<p>1] <u>Knowledge</u> - students are able to know the concept of production of sound.</p> <p>2] <u>Understanding</u> - students are able to know how sound waves are produced.</p> <p>3] <u>Application</u> - students are able to apply the concept of production of sound in real life situations.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity) विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q.1] Explain how sound is produced by your school bell?

Ans] When the bell is hit with a hammer, it moves forward and backwards with compressions and rarefactions due to vibration. This is how sound is produced.

Q.2] Sound waves are also called as?

Ans] Sound waves are also called as mechanical waves.

Q.3] How the sound of human voice is produced?


Ans] The sound of human voice is produced due to the vibrations of vocal chords.

Q.4] Can you create or produce sound without using energy?

Ans] No, sound cannot be produced without using energy.

Q.5] What is a vibration?

Ans] A vibration is a rapid to and fro motion of an object.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Propagation of sound</u></p>  <p>where, C are compressions R are rarefactions</p> <p>When an object vibrates, it sets the particles of medium around it vibrating. Alternate C and R are formed and the process continues in the medium till it reaches your ear.</p>	<p>1] <u>Knowledge</u> - Students are able to know the concept of propagation of sound.</p> <p>2] <u>Understanding</u> Students are able to know how sound waves are propagated.</p> <p>3] <u>Application</u> - Students are able to apply the concept of propagation of sound in real life examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic

Students give appropriate answers of the asked questions.

Q-1] What does sound needs to propagate?

Ans] Sound requires a medium to propagate.

Q-2] Which is the most common medium through which sound travels?

Ans] Air is the most common medium through which sound travels.

Q-3] What is a compression? (C)

Ans] When a vibrating object moves forward, it pushes and compresses the air in front of it creating area of high region. This is called compression (C).

Q-3] What is a rarefaction? (R)

Ans] When the vibrating object moves backwards, it creates a region of low pressure called rarefaction (R).

पाठ्याच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>1] Production of sound</p> <p>2] Propagation of sound</p> <p>→ a] Compressions → b] Rarefactions.</p>	<p>*] To revise the topic taught in the class.</p> <p>*] To evaluate the knowledge gained by the students.</p> <p>*] To test the knowledge of the students regarding the concept of production and propagation of sound.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q] What are compressions and rarefactions?

Ans] Compression is the region of high pressure and rarefaction is the region of low pressure.

Q] How pressure is related to the number of particles of a medium?

Ans] More density of the particles in the medium gives more pressure and vice versa.

Q] Suppose you and your friend are on the moon. Will you be able to hear any sound produced by your friend?

Ans] No, sound waves need medium to propagate. Due to absence of an atmosphere on the moon, you will not be able to hear any sound produced by friend.

Q] Is the law of conservation of energy applicable to sound waves?

Ans] Yes, the law of conservation of energy is applicable to the sound waves.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on the blackboard.
Homework -

Students write it down and solve it in their respective notebooks.

Q-1] Why are sound waves called mechanical waves?

Q-2] Sound travels through which medium?

Q-3] What is carried by the waves from one place to another?

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No	18	विषय Subject	physics
शाळा School	V.L. convent	विषयांश Topic	characteristics
पाठ साहित्य Material Aids	chalk, blackboard, duster	पूर्व ज्ञान Previous Knowledge	Production and

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		<ul style="list-style-type: none"> *] To develop thinking, reasoning and imagination among students. *] To enable students to know the concept of sound. *] To enable students to understand the applications of sound.
statement of Aim - Today we are going to		

दिनांक

Date

21/12/23

a sound wave

वर्ग

Class

IX

propagation of sound

तासिका अवधी

Length of the Period

35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions.

Students give appropriate answers to the asked questions.

Q1] What is carried by waves from one place to another?

Ans] Energy is carried by waves from one place to another.


Q2] A body produces ~~the~~ sound under which condition?

Ans] A body produces sound only if it vibrates.

Q3] In a long spring, what types of changes occur when we move it?

Ans] In a long spring, compressions and rarefactions are formed when we move it.

Learn about characteristics of a sound wave.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>characteristics of a sound wave-</u></p> <p>1] <u>Wavelength - (λ)</u> The distance between two consecutive Compressive and Rarefactions is called wavelength.</p>  <p><u>represented by - λ</u> <u>Unit - metre (m)</u></p> <p>2] <u>Time period (T)</u> The time taken by the wave for one complete oscillation of the density or pressure of medium <u>represented by - T</u> <u>Unit - second (s)</u></p>	<p>1] <u>Knowledge-</u> students are able to know the characteristics of a sound wave.</p> <p>2] <u>Understanding</u> students are able to understand the characteristics of a sound wave.</p> <p>3] <u>Application</u> students are able to apply characteristics of a sound wave in real life scenarios.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

students give appropriate answers of the asked questions.

Q-1] If a wave completes 20 vibration in 2.5s, then its frequency is?

Ans] frequency of the given wave is $\frac{20}{2.5}$

$$\frac{200}{25} = 8 \text{ Hz}$$

Q-2] If the distance between a crest and its consecutive trough is L , then the wavelength of the wave is given by,

Ans] If the distance between a crest and consecutive trough is L , then the wavelength is given by $2L$.

Q-3] A boat is set into vertical vibration by waves of speed 5ms⁻¹ whose crests are 5m apart. Find the time period of the vertical vibration of the boat.

Ans] The time period of the vibration of the boat is given by 1 second.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p>3] <u>Frequency (v)</u> The number of complete oscillations per unit time is called frequency. $v = \frac{1}{T}$ <u>Represented by - v</u> <u>Unit - (Hz)</u></p> <p>4] <u>Amplitude - (A)</u> The magnitude of the maximum disturbance in the medium on either side of the mean value is called the amplitude of the wave. <u>Represented by - A</u></p>	<p>1] <u>Knowledge</u> students are able to know the properties of a sound wave.</p> <p>2] <u>Understanding</u> students are able to understand the properties of a sound wave.</p> <p>3] <u>Application</u> students are able to apply properties of sound wave in real life scenarios.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What is determined by the amplitude of the wave?

Ans] The loudness or softness of a sound is determined by its amplitude.

Q2] Which wave characteristics determine the pitch of a wave?

Ans] The pitch is determined by the frequency. The pitch of the sound and its frequency is directly related to each other.

Q3] The frequency of the sound waves can be expressed in which unit?

Ans] The frequency of the sound waves can be expressed in cycle per second.

Q4] Guess which of the following sound has a high pitch - guitar or cat horn?

Ans] The pitch of sound and its frequency are directly related. So, a guitar has a higher pitch when compared to a cat horn.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Wavelength	*] To revise the topic taught in the class.
	2] Time Period	*] To evaluate the knowledge gained by the students.
	3] Frequency	*] To test the knowledge of the students regarding characteristics of a sound wave.
	4] Amplitude	

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some questions related to the topic.

students give appropriate answers to the asked questions.

Q.1] How are speed, frequency and wavelength related?

Ans] The speed v , frequency ν and wavelength λ are related by the eqn

$$v = \lambda \nu$$

Q.2] What is the SI unit of amplitude of motion?

Ans] The SI unit of amplitude of motion is metre (m).

Q.3] The reciprocal of frequency is ?

Ans] The reciprocal of frequency is time period.

Q.4] A fan is marked 900 rpm. What is the frequency of movement of its blades?

Ans] frequency of the blades of the fan can be given by

$$\frac{900}{60} = 15 \text{ Hz.}$$

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time.</p> <p>*] To create the interest in the topic taught</p> <p>*] To understand the taught concept properly</p>

फलक सार
Black Board Summary

<u>Day</u> - Thursday	<u>Class</u> - IX	On roll -
<u>Date</u> - 2/2/23	<u>Sub</u> - Physics	Present -
	<u>Topic</u> - characteristics of sound wave	Absent -
<u>Characteristics</u>		
① Wavelength (λ)	③ Frequency (ν) = $\frac{1}{T}$ Reciprocal of Time	
② Time period (T)	④ Amplitude (A)	
<u>Homework</u> - 1] A wave completes 24 cycles in 0.8 sec. The frequency of wave is -		
2] Define - a] Pitch b] Loudness		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on the blackboard.

students write it down and solve it in their respective notebooks.

Homework -

1] A wave completes 24 cycles in 0.8 sec. The frequency of the wave is ?

2] Define - a] pitch
b] Loudness

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक 19
S.No

विषय Physics
Subject

शाळा V.L. Convent
School

विषयांश Sound - Applied
Topic

पाठ साहित्य Chalk, blackboard,
Material Aids dustee

पूर्व ज्ञान Characteristics
Previous Knowledge

पाठव्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
I N T R O D U C T I O N		*] To develop thinking, reasoning and imagination among students.
		*] To enable students to know various uses of sound. *] To enable students to understand the applications of sound.
statement of Aim - Today we are going to study		

दिनांक

22/12/23

Date

वर्ग

IX

Class

तासिका अवधी

35 min

Length of the Period

अध्यायनानुभव Learning Experience

अध्यापक कृती
Teacher's Activities

छात्र कृती
Student's Activities

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

Q-1] Why do we hear the sound of thunder a little later than the flash?

Ans] The sound travels with a speed lesser than speed of light, so, we see flash first and then hear thunder.

Q-2] For hearing a distinct sound, the time interval between the original sound and the reflected sound should be?

Ans] For hearing a distinct sound, the time interval between original sound and the reflected sound must be at least 0.1 sec.

Study applications of sound.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<u>Uses of multiple Reflection of sound</u> 1] Megaphones or loudhailees, horns, musical instruments - trumpets - shehanais 2] stethoscope - used for listening to sounds produced within the body mainly heart or lungs. 3] ceilings of cinema halls and conference halls, concert halls are curved so that sound after reflection reaches all corners of the hall.	1] <u>Knowledge</u> - students are able to know applications of sound. 2] <u>Understanding</u> students are able to understand applications of sound. 3] <u>Application</u> students are able to apply sound basic in real life examples.

अध्ययनानुभव (Learning Experience)

on)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some introductory questions

Students give appropriate answers to the asked questions.

Q-1] The persistence of sound in an auditorium is the result of reflection of sound is given by which phenomenon?

Ans] The persistence of sound in an auditorium is the result of repeated reflections of sound is called reverberation.

Q-2] What is the relation between speed, frequency and wavelength?

Ans] The speed v , frequency ν and wavelength λ of sound are related by the equation

$$v = \lambda \nu$$

Q-3] In which medium, speed of sound is maximum?

Ans] Speed of sound is maximum in solids.

Q-4] What is the frequency to which human ears are most sensitive to?

Ans] Human ears are most sensitive to the sound frequencies between

20 Hz to 20 kHz

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Infrasonic sound</u></p> <ul style="list-style-type: none"> - The sound of frequency less than 20 Hz. - Frequency is lower than limit of human hearing - Ex - sound produced by thunder, earthquake <p><u>Ultrasonic sounds</u></p> <ul style="list-style-type: none"> - The sound of frequency more than 20,000 Hz are called ultrasonics. - Frequency is above upper limit of human hearing - Ex - The audible range of dogs, cats, moths and mice. 	<p>1] <u>Knowledge</u> - students are able to know applications of sound.</p> <p>2] <u>Understanding</u> students are able to understand applications of sound</p> <p>3] <u>Application</u> students are able to apply sound based in real life examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teachers ask some introductory questions

students give appropriate answers to the asked questions.

1] Which waves are produced by bats?

Ans] Ultrasonic waves are produced by bats.

2] What is the maximum tolerable sound to human ears?

Ans] Maximum tolerable sound to human ears is 120 dB.

3] Which waves are used in SONAR?

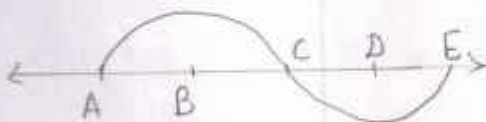
Ans] In SONAR, ultrasonic waves are used.

4] When does the sound travel in air?

Ans] When the disturbance moves, sound travels in the air.

5] In the curve, half the wavelength is -

Ans] In the given figure half of the wavelength is $AC = CE$ or BD



पाठच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	1] Applications of sound 2] Uses of multiple reflections of sound 3] Infrasonic sound 4] Ultrasonic sound	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by the students. *] To test the knowledge of the students regarding applications of sound.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic

Students give appropriate answers to the asked questions.

1] Which kind of sound is produced by earthquake?

Ans] An earthquake produces infrasound kind of sound before main shock wave begins.

2] Echo can be heard clearly with which minimum distance?

Ans] Echo can be heard clearly if the minimum distance between the source of sound and the obstacle is 17.2 metres.

3] Fill in the following blank.

Infrasound can be heard by _____

Ans] Infrasound can be heard by elephants.

4] What is an oscillation?

Ans] The change in the density from one maximum value to the minimum value and again to the maximum value makes one complete oscillation.

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time.</p> <p>*] To create the interest in the topic taught.</p> <p>*] To understand the taught concept properly.</p>

फलक सार

Black Board Summary

Day - Friday

Class - IX

on roll -

Date - 22/12/23

Sub - Physics

Present -

Topic - Applications of Sound

Absent -

Infrasonic sound

frequency is less than 20 Hz

Ultrasonic sound

frequency is more than 20,000 Hz

Homework - state true or false

- 1] sound is produced due to vibration of different objects.
- 2] sound propagates in a vacuum.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on the blackboard.
Homework-

students write it down and solve it in their respective notebooks.

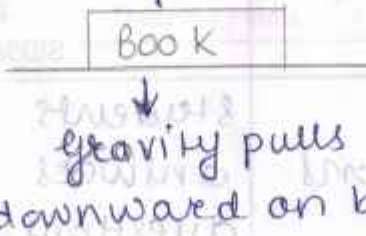
1] state True or False.

2] Sound is produced due to the vibration of different objects.

3] sound propagates in a vacuum.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	<p><u>Balanced Force</u></p> <p>The table pushes upward on book</p>  <p>There are two forces acting on the book</p> <p>1] Earth's gravitational force exerts a downward force</p> <p>2] The push of the table on the book pushes upward on the book.</p> <p>We can say that forces on the book are <u>balanced</u></p>	<p>1] <u>knowledge</u> students are able to know the concept of balanced forces</p> <p>2] <u>understanding</u> students are able to understand balanced forces in the nature</p> <p>3] <u>Application</u> students are able to apply concept in real life examples.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some introductory questions

Students give appropriate answers to the asked questions.

1] Define balanced force

Ans] Balanced forces are the forces which when acted on a body do not change their state of rest or state of uniform motion.

2] What are characteristics of balanced forces?

Ans] Balanced forces are equal in size and magnitude. These forces work in opposite directions.

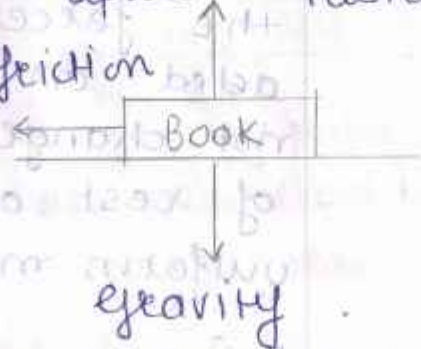
3] Give any three examples of balanced forces.

Ans] Three examples of balanced forces are

① An object floating in water

② A jacket hanging on a hook

③ Planets orbiting around the sun in fixed orbits.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	<p><u>Unbalanced Force</u></p> <p>consider a book sliding from left to right across a upward tabletop friction</p>  <p>The forces acting upon the book are</p> <ol style="list-style-type: none"> 1] Force of gravity pulling downward 2] Force of table pushing upward 3] Force of friction <p>There is an unbalanced force opposite to the motion of book.</p>	<ol style="list-style-type: none"> 1] <u>Knowledge</u> students are able to know the concept of unbalanced forces. 2] <u>Understanding</u> students are able to understand unbalanced forces in the nature 3] <u>Application</u> students are able to apply concept to solve various problems in daily life.

अध्ययनानुभव (Learning Experience)

(ii)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some introductory questions

Students give appropriate answers to the asked questions

Q1] Define unbalanced force.

Ans] When the resultant force acting on a body is not equal to zero and eventually results in the motion of the body, such forces are called unbalanced force.

Q2] Give any three examples of unbalanced forces.

Ans] Three examples of unbalanced forces are

- ① An object sinking in water
- ② A fruit dropping from a tree
- ③ A group of kids winning a tug of war game.

Q3] If a force of 40N is applied to body on the left side while a force of 40N is applied to the body on right side. What will be the behaviour of the body?

Ans] The body will be at rest because the net force on the body is 0N. Which means that there is no change in the state of motion of the body

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
R E C A P I T U L A T I O N	<p>1] Balanced force</p> <p>2] unbalanced force</p> <p>3] If N is the number of forces acting on the body,</p> $F_{net} = F_1 + F_2 + F_3 + \dots + F_n$ $F_{net} = F_a + F_g$ <p>where,</p> <p>F_a -- Applied force</p> <p>F_g -- gravitational force</p>	<p>1] To revise the topic taught in the class</p> <p>2] To evaluate the knowledge gained by students.</p> <p>3] To test the knowledge of students regarding balanced and unbalanced forces.</p>

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher asks some questions related to the topic.

Students give appropriate answers to the asked questions.

Q1] What are the quantities that force can change?

Ans] Force can change the speed, shape and direction of an object.

Q2] When a body is in motion, in which direction does the friction act?

Ans] The friction acts in the opposite direction to the motion of the body.

Q3] What is the SI unit of force?

Ans] SI unit of force is Newton (N)

Q4] What is the aggregate of all forces exerted on an object called?

Ans] The net force is the sum of all forces exerted on a body.

Q5] What is the formula for weight?

Ans] Formula for weight is $F = m \times g$

where m , is mass of body
 g is acceleration due to gravity

पाठाच्या पायऱ्या Steps of the Lesson	अद्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
H O M E W O R K		<p>*] To utilize the free time</p> <p>*] To create interest in the topic taught</p> <p>*] To understand the taught concept properly</p>

फलक सार
Black Board Summary

Day - Friday Date - 23/12/23	Class - IX Sub - Physics Topic - Balanced and unbalanced forces	on roll - Present - Absent -
<u>Balanced Forces</u> - Equal in size and magnitude - work in opposite directions.		<u>Unbalanced forces</u> - Resultant force acting on a body is not zero. $F_{net} = F_1 + F_2 + \dots + F_n$ $F_{net} = F_a + F_g$
<u>Homework - Q]</u> In the game of rope pulling, a man with force of 100N from one side and other pull with 90N from other side. What is the net force?		

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)

विद्यार्थी कृती (Student Activity)

Teacher gives homework written on the blackboard.
Homework-

Students write it down and solve it in their respective notebooks.

In the game of rope pulling, a man with a force of 100N from one side and other pulls with 50N from other side.
 What is the net force?

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
 (Sign. of Supervisor)

SHEELADEVI COLLEGE OF
EDUCATION

Session :- 2023-24

B.ed 3rd Semester

Internship - II

Community Interaction report -
Visit to Orphanage

Name of the student - ~~Mayank W. Wilson~~
B.ed. 3rd Semester

Index

Sr. no.	Content	Page. No
1.	Introduction	2
2.	Objective	4
3.	Report	10

Introduction

An orphanage is a residential institution dedicated to the care of orphans.

The aim focusses on providing education and shelter to the orphans.

To empower them to become citizens of India in a well-mannered way.

The empowered and well-informed orphan population of our country, thus enabling them to lead a life of dignity and productivity.



OBJECTIVE

Equal access to quality education and lifelong learning enable disabled people to participate fully.

To promote affordable, accessible and quality, social services.





श्री स्वामी श्रद्धानंद
अनाथालय
श्री.ठा.जी.भा.दे.ब. बुटी
आश्रम.

श्री श्रद्धानंद आचार्य, नागपूर

GPS Map Camera

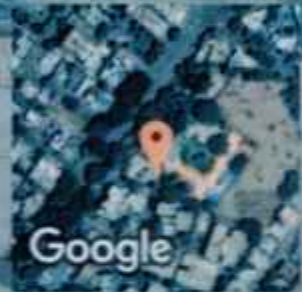
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Madhav Nagar Bus Stop, Abhyankar Nagar Rd, Near Dominos,
Madhav Nagar, Nagpur, Maharashtra 440010, India

Lat 21.12386°

Long 79.058518°

16/12/23 10:34 AM GMT +05:30

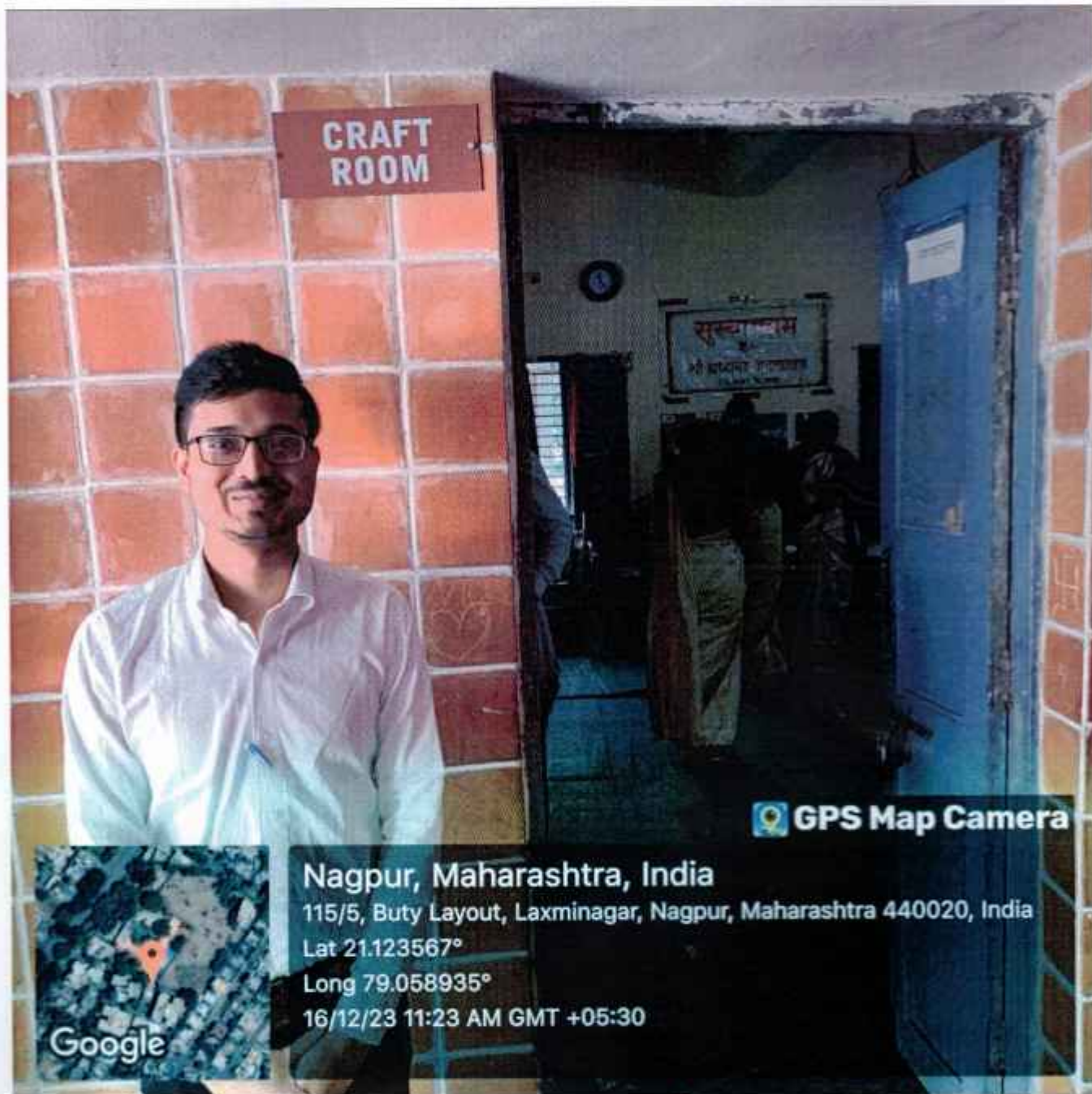


Google

7







CRAFT ROOM

GPS Map Camera

Nagpur, Maharashtra, India

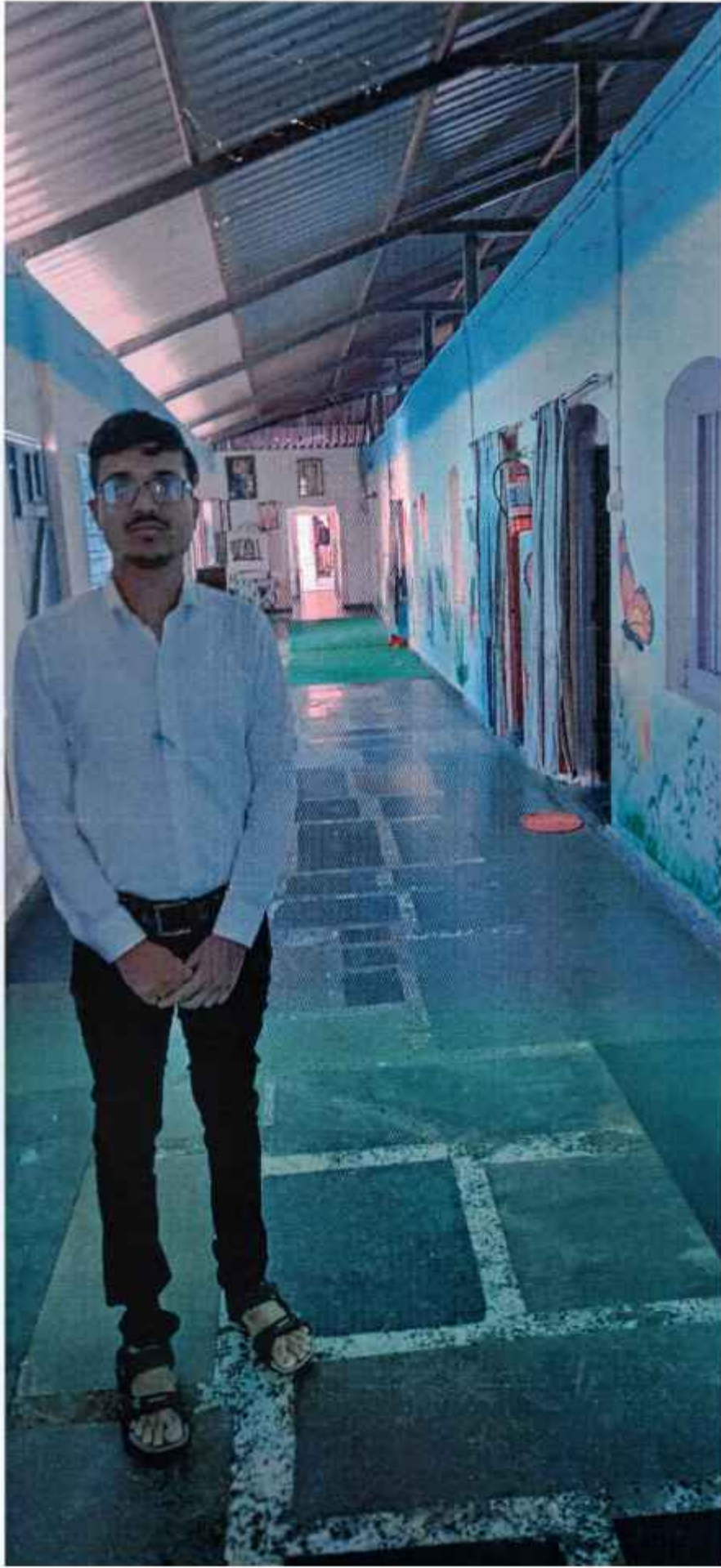
115/5, Buty Layout, Laxminagar, Nagpur, Maharashtra 440020, India

Lat 21.123567°

Long 79.058935°

16/12/23 11:23 AM GMT +05:30

Google



Report

I, Mayank W. Wilson, visited Shroaddhanand Anathalay on 16th Dec. 2023 at 10 a.m.

Address - 123, Shroaddhanand Peth, Nagpur
Pin code - 440022

phone - 0712-2222959

After reaching there at 10:15 a.m.

We waited for 25 min. then office staff came and director madam came.

Mrs. Geetanjali, director madam, briefed us about the history and working system of this Anathalaya.

Nursery Baby wing - 1

kindergarten and 0 to 6 years - 10 Boys +
14 girls

6 to 18 years → Boys - nil
girls - 43

18+ years → Boys - 16
girls - 4

~~Subbed~~

SHEELA MULTIPURPOSE SOCIETY

SHEELADEVI COLLEGE OF EDUCATION



WADI, NAGPUR
2023 - 2024

**MICRO - TEACHING
LESSON PLANNING BOOK**

**सूक्ष्म अध्यापन
पाठ नियोजन पुस्तिका**

Name Ku. Ranjana P. Sardar.
नाव

Number _____
क्रमांक

Subject 1) Maths
विषय
2) physics.

अनुक्रमणिका
I N D E X

पाठांक S.No.	दिनांक Date	कौशल्य क्रमांक Skill No.	हस्ताक्षर Signature
1.	22/11/23	1) Introduction skill i) Mathematics ii) physics	Skulbade
2.	29/11/23	2) Questioning skill i) Mathematics ii) physics	Skulbade
3	4/12/23	3) Explanation skill i) Mathematics ii) physics	Skulbade
4.	9/12/23	4) Stimulus variation skill i) Mathematics ii) physics	Skulbade
5.	15/12/23	5) Blackboard writing skill i) Mathematics ii) physics	Skulbade
6.		6) Inspection i) Mathematics ii) physics	Skulbade
7	21/12/23	7) Reinforcement skill i) Mathematics ii) physics	Skulbade
8	28/12/23	8) Illustrating with examples i) Mathematics ii) physics	Skulbade
9	3/1/24	9) Closure skill i) Mathematics ii) physics	Skulbade

INTRODUCTION SKILL

प्रस्तावना कौशल्य

Subject :- Mathematics

वेळ - ५ मिनिट

Topic :- Quadratic equation

Time Duration : 5 Minutes

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
<u>Note</u> :- Teacher ask question about topic	<u>Note</u> :- student answered properly	
<u>Qnc. 1</u>)- What is polynomial ?	<u>Ans</u> :- It is an expression of variable like $x+y$, x^2+2x+2 etc.	previous knowledge
2) Types of polynomials ?	=> Linear, quadratic, cubic etc. are the types of polynomials	students attention
3) What is the equation ?	=> When an expression is equal to zero is called as polynomial equation.	previous knowledge

INTRODUCTION SKILL

प्रस्तावना कौशल्य

Subject :- Mathematics

वेळ - ५ मिनिट

Time Duration : 5 Minutes

Topic :- Quadratic equation

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
4) What is linear equation ?	⇒ The equation having highest power of variable 1 is called linear equation.	Student Attention
5) In which equation having highest power of variable is 2 ?	⇒ In the quadratic equation having highest power of variable is 2.	Student Attention

Statement of Aim :- So today we have learn about the topic Quadratic equation

INTRODUCTION SKILL

प्रस्तावना कौशल्य

वेळ - ५ मिनिट
Time Duration : 5 Minutes

subject :- physics
Topic :- motion

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
<u>Note</u> :- Teachers ask question about topic	<u>Note</u> :- students answered properly	
1) What is acceleration ?	⇒ Rate of change of velocity with time is called acceleration.	previous knowledge
2) Types of acceleration ?	⇒ There are two types of acceleration i.e. uniform acceleration and Non-uniform acceleration.	previous knowledge
3) What is velocity?	⇒ The speed of an object moving in a definite direction is called velocity.	student attention

INTRODUCTION SKILL प्रस्तावना कौशल्य

वेळ - ५ मिनिट
Time Duration : 5 Minutes

Subject :- Physics
Topic :- Motion

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
4) What is speed?	⇒ Distance travelled by the object in unit time is called speed.	student Attention
5) What is movement?	⇒ change in position of an object with respect to a fixed position is called movement.	previous knowledge
6) What is the other name of movement?	⇒ The other name of movement is motion	students Attention

statement of Aim:- so today we have learn about the topic motion.

INTRODUCTION SKILL

प्रस्तावना कौशल्य

OBSERVATION CHART

निरीक्षण तक्ता

वेळ - ५ मिनिट

Time Duration : 5 Minutes

उपघटक	पदनिश्चयन श्रेणी (चढत्या क्रमांक)				
	1	2	3	4	5
1) लक्षवेधक प्रेरण मिळाले काय ? अभिप्रेरणा प्राप्त हुई क्या ? Motivated or not				✓	
2) शेवट पर्यंत लक्ष सिखवून ठेवण्यात यश मिळाले काय ? शुरु से अंत तक ध्यान स्थिर रहा की नहीं ? Attention of the students was from the start till end or not.				✓	
3) अपेक्षित पुर्वज्ञान जागृती केली काय ? अपेक्षित पुर्वज्ञान जागृत हुआ की नहीं ? Previous knowledge was araised or not.					✓
4) पाठ्यघटकाची सांगड पुर्वानुभवाशी घातली गेली काय ? पाठ्यांश पुर्वानुभव के साथ जोडा गया की नहीं ? Whether the topic was related to previous knowledge or not.				✓	

FEEDBACK प्रत्याभरण

Introduction skill is good student
was motivated. Attention of the student
was from the start till end previous
knowledge was raise. topic was
related to previous knowledge.

INTRODUCTION SKILL

प्रस्तावना कौशल्य

OBSERVATION CHART

निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

उपघटक	पदनिश्चयन श्रेणी (चढ्या क्रमांक)				
	1	2	3	4	5
1) लक्षवेधक प्रेरण मिळाले काय ? अभिप्रेरणा प्राप्त हुई क्या ? Motivated or not					✓
2) शेवट पर्यंत लक्ष खिळवून ठेवण्यात यश मिळाले काय ? शुरु से अंत तक ध्यान स्थिर रहा की नहीं ? Attention of the students was from the start till end or not.				✓	
3) अपेक्षित पुर्वज्ञान जागृती केली काय ? अपेक्षित पुर्वज्ञान जागृत हुवा की नहीं ? Previous knowledge was araised or not.				✓	
4) पाठ्यघटकाची सांगड पुर्वानुभवाशी घातली गेली काय ? पाठ्यांश पुर्वानुभव के साथ जोडा गया की नहीं ? Whether the topic was related to previous knowledge or not.				✓	

FEEDBACK प्रत्याभरण

Introduction skill is good student
was motivated. Attention of the student
was from the start till end.
previous knowledge was raise topic
was related to previous knowledge.

Feedback

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No. 1 Subject - Mathematics
 क्रमांक विषय
 Teaching Sub - Unit - Quadratic equation
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge - About polynomial
 पुनर्ध्यापन पूर्वज्ञान
 Class - 10
 वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य	Sub-skills
Teacher Activity	Student Activity	
<u>Note</u> :- Teacher ask question about the topic.	<u>Note</u> :- students answered properly	
1) What is quadratic equation?	⇒ The equation having highest power of variable 2 is called quadratic equation.	Low level question
2) What is cubic equation?	⇒ The equation having highest power of variable 3 is called cubic equation	low level question
3) What is <u>biquadratic</u> equation?	⇒ An equation in the form of $ax^4 + bx^2 + c$ is called biquadratic equation.	high level question

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No.	Subject :- Mathematics
क्रमांक	विषय
Teaching अध्यापन	Sub - Unit - Quadratic equation
Re-Teaching पुनर्ध्यापन	विषयांश
.....	Previous Knowledge About polynomials
.....	पूर्वज्ञान
.....	Class 10
.....	वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य
Teacher Activity	student Activity
<p>4) What are the types of quadratic equation</p> <p>5) Give example of linear quadratic equation</p>	<p>4) standard form, factored form, and vector form are the type of quadratic equation</p> <p>5) The example of linear quadratic equation is $x^2 + x$</p>
	<p>sub-skill</p> <p>Mid level question</p> <p>low level question.</p>

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No. 2 Subject - Physics
 क्रमांक विषय
 Teaching Sub - Unit :- Motion
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge :- Distance, speed
 पुनर्ध्यापन पूर्वज्ञान
 Class 9th
 वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य
Teacher Activity	Student Activity
<p><u>Note</u> :- Teachers ask question related to the topic.</p>	<p><u>Note</u> :- students answered properly</p>
<p>1) What is motion ?</p> <p>2) Give some example of motion ?</p> <p>3) What are the types of motion ?</p>	<p>⇒ The change in position of an object with respect to fixed position of object is called motion</p> <p>⇒ 1) A book falling off a table</p> <p>2) Water flowing from the tap are the example of motion.</p> <p>Linear motion, Rotary motion, oscillatory motion are the types of motion.</p>

Sub-skill

Low level question.

12 ✓

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No. Subject Physics
क्रमांक विषय
Teaching Sub-Unit :- Motion
अध्यापन विषयांश
Re-Teaching Previous Knowledge : Distance, speed
पुनर्ध्यापन पूर्वज्ञान
Class 9
वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य
Teacher Activity	students Activity
4) What is vertical motion and horizontal motion?	Uniform velocity is measured along y-axis is called vertical motion and uniform velocity is measured along x-axis is called horizontal motion.
5) What is uniform motion?	If an object travels equal distances in equal intervals of time is called uniform motion.



QUESTIONING SKILL

प्रश्न कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Type of Question प्रश्नाचे प्रकार/प्रश्न के प्रकार		✓								
2) Level of Question प्रश्नाचे स्तर/प्रश्न का स्तर			✓							
3) Objective of Question उद्दिष्टानुसार प्रश्न उद्दिष्ट के अनुसार प्रश्न				✓						
i) Knowledge ज्ञान										
ii) Understanding आकलन					✓					
iii) Application उपयोजन					✓					
iv) Skill कौशल्य								✓		

FEEDBACK प्रत्याभरण

Teacher asked the different types of question is of understanding level. Some question are knowledge based. Some are on understanding objective and some are an application.

QUESTIONING SKILL

प्रश्न कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Type of Question प्रश्नाचे प्रकार/प्रश्न के प्रकार	✓									
2) Level of Question प्रश्नाचे स्तर/प्रश्न का स्तर		✓								
3) Objective of Question उद्दिष्टानुसार प्रश्न उद्दिष्ट के अनुसार प्रश्न				✓						
i) Knowledge ज्ञान		✓								
ii) Understanding आकलन										
iii) Application उपयोजन					✓					
iv) Skill कौशल्य					✓					

FEEDBACK प्रत्याभरण

Teacher asked the different types of question is of understanding level some question are knowledge based some are on understanding objective and some are an application.

EXPLANATION SKILL स्पष्टीकरण कौशल्य

Sr. No. 1 Subject Maths
 क्रमांक विषय
 Teaching Sub - Unit Quadratic equation
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge About polynomial
 पुनर्ध्यापन पूर्वज्ञान
 Class 10
 वर्ग

Explanation Skill स्पष्टीकरण कौशल्य	Sub Skill उपकौशल्य	
Teacher Activity	Student Activity	sub-skill
<p><u>Note</u> :- Teacher ask question related to the topic.</p>	<p><u>Note</u> :- student answered properly</p>	
<p>Q. What is quadratic equation $\Rightarrow x^2 + 4x + 2 = 0$ Quadratic equation can be in one variable or two variable One variable :- $x^2 + 4x + 2 = 0$ Two variable :- $x^2 + 3xy + 2 = 0$ Now we have to study quadratic equation in one variable</p>	<p>\Rightarrow The equation having highest power of variable 2 is called quadratic equation.</p>	<p>Initial statement Explanation Conjunction.</p>

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

Sr. No. 2
क्रमांक

Teaching
अध्यापन

Re-Teaching
पुनर्ध्यापन

Subject Physics

विषय

Sub - Unit Motion

विषयांश

Previous Knowledge :- Type of motion

पूर्वज्ञान

Class 9

वर्ग

Explanation Skill स्पष्टीकरण कौशल्य	Sub Skill उपकौशल्य	
Teachers Activity	Students Activity	Sub-Skill
<p>→ Imagine a train is moving with uniform speed of 20m/s it means for every second train is covering a distance of 20m.</p> <p>Hands of clock always moves with uniform speed thus it is an example of uniform motion that's why we use clock for the purpose of measurement of times.</p> <p>From the above discussion what we can conclude is that whenever an object moves with constant speed it performs uniform motion and the distance covered in unit time is always same throughout the motion.</p>	<p>Students are listening and looking towards blackboard.</p>	<p>purposeful Recapitulation.</p> <p>Final statement</p>

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ७ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Initial Statement प्रथम विधान		✓								
2) Explanation Conjunction स्पष्टीकरण दुवे				✓						
3) Use of audio - visual दृक्श्राव्य साधनाचा वापर					✓					
4) Purposive Recapitulation योजनापुर्वक पुनरावलोकन योजनापुर्वक पुनरावृत्ती						✓				
5) Final Statement अंतिम विधान							✓			

FEEDBACK प्रत्याभरण

Explanation part has been tough.
Initial statement and final statement
are attentive for students.

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - 9 मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Initial Statement प्रथम विधान	✓									
2) Explanation Conjunction स्पष्टीकरण दुवे		✓								
3) Use of audio - visual दृक्श्राव्य साधनाचा वापर			✓							
4) Purposive Recapitulation योजनापुर्वक पुनरावलोकन योजनापुर्वक पुनरावृत्ती				✓						
5) Final Statement अंतिम विधान					✓					

FEEDBACK प्रत्याभरण

Explanation part has been taught.
initial statement and final statement
are attentive for students.

Kalbarshi

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

Sr No / क्रमांक	Subject / विषय
Teaching / अध्यापन	Sub - Unit :- Quadratic equation / विषयांश
Re-Teaching / पुनर्ध्यापन	Previous Knowledge :- About quadratic equation / पूर्वज्ञान
	Class / वर्ग

Stimulus Variation Skill चेतक - बदल कौशल्य	Sub Skill उपकौशल्य
Teacher activity/	students activity/
<u>Note</u> :- Teacher ask question related to the topic.	<u>Note</u> :- student answered properly
<p>Now we will study method for finding the roots of giving equation.</p> <p><u>What is factor?</u></p> <p>In factorization method we have to find the factor of middle term</p>	<p>There are three method:-</p> <ol style="list-style-type: none"> a) factorization b) perfect square method. c) formula method. <p>⇒ (x+2) is the factor of $x^2+4x+4=0$</p>

Signature of teacher

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

Sr. No. 1 क्रमांक	Subject :- Mathematics विषय
Teaching अध्यापन	Sub - Unit :- Quadratic equation विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge :- About quadratic equation पूर्वज्ञान
	Class 10 वर्ग

Stimulus Variation Skill चेतक - बदल कौशल्य	Sub Skill उपकौशल्य
<p>Teachers Activity</p> <p>Ex $x^2 + 4x + 4 = 0$</p> $x^2 + 2x + 2x + 4 = 0$ $x(x+2) + 2(x+2) = 0$ $x+2 = 0 \quad \quad x+2 = 0$ $x = -2 \quad \quad x = -2$ <p>Here, $(x+2)$ is a factor and $x = -2$ is a solution</p> <p>Solve:- $x^2 - 4x + 4 = 0$</p> $x^2 - 2x - 2x + 4 = 0$ $x(x-2) - 2(x-2) = 0$ $(x-2)(x-2) = 0$ $x = 2$ <p>What is quadratic equation.</p>	<p>Student Activity</p> <p>A quadratic equation is a second-order polynomial equation in a single variable x</p> $ax^2 + bx + c = 0$

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

Sr. No. 2 क्रमांक	Subject :- Physics विषय
Teaching अध्यापन	Sub - Unit :- Motion विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge :- About motion पूर्वज्ञान
	Class 90 वर्ग

Stimulus Variation Skill चेतक - बदल कौशल्य	Sub Skill उपकौशल्य	
Teachers Activity	Student Activity	Sub-skills
<p><u>Note</u>:- Teachers ask question related to the topic</p>	<p><u>Note</u>:- student answered properly</p>	
<p>Q) As we have studied uniform motion is a motion with constant speed, is earth is performing uniform motion?</p>	<p>=> yes, because earth completes its rotation in one year</p>	<p>Gesture of teacher</p>
<p>Q) Theoretically we can say that earth rotate with constant speed, imagine that speed is changed then what will happend?</p>	<p>=> Time will change for the completion of one rotation around earth and we will not get 365 days in one year.</p>	<p>Active participation of students.</p>

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उदपन भिन्नता

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ७ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Movement of Teacher शिक्षक हालचाल / विद्यारे	-		✓							
2) Gesture of Teacher शिक्षक हावभाव				✓						
3) Change in stimulus variation चेतक बदल/उदपन भिन्नता						✓				
4) Change in Speech Pattern भाषा शैलीत परिवर्तन भाषा शैली में परिवर्तन							✓			
5) Verbal participation of students विद्यार्थ्यांचा शाब्दिक सहभाग छात्र का शाब्दिक सहभाग								✓		
6) Active Participation of Students विद्यार्थ्यांचा सक्रिय सहभाग छात्र का सहभाग									✓	

FEEDBACK प्रत्याभरण

stimulus variation skill is good. there is some movement of teacher in between teaching there is change in speech pattern.

students are participated in that topic.

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

OBSERVATION CHART निरीक्षण तक्ता

वेळ - ५ मिनिट

Time Duration : 5 Minutes

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Movement of Teacher शिक्षक हालचाल / विद्यार्थे			✓							
2) Gesture of Teacher शिक्षक हावभाव				✓						
3) Change in stimulus variation चेतक बदल/उद्विपन भिन्नता					✓					
4) Change in Speech Pattern भाषा शैलीत परिवर्तन भाषा शैली में परिवर्तन						✓				
5) Verbal participation of students विद्यार्थ्यांचा शाब्दिक सहभाग छात्र का शाब्दिक सहभाग							✓			
6) Active Participation of Students विद्यार्थ्यांचा सक्रिय सहभाग छात्र का सहभाग							✓			

FEEDBACK प्रत्याभरण

stimulus variation skill is good. there is some movement of teacher. In between teaching there is change in speech of pattern. students are actively participate in that topic.

Feedback

BLACKBOARD WRITING SKILL

फलक लेखन कौशल्य

Sr No. 1 Subject :- Mathematics
क्रमांक विषय
Teaching Sub-Unit :- Quadratic equation
अध्यापन विषयांश
Re-Teaching Previous Knowledge :- About quadratic equation
पुनर्ध्यापन पूर्वज्ञान
Class 10
वर्ग

Black Board Writing Skill फलक लेखन कौशल्य	Sub Skill उपकौशल्य	Sub-skill
Teachers activity	Students Activity	
Teaching points:- 1) Definition of equation 2) Types of equation 3) Category of equation	=> a) Linear equation b) Quadratic equation c) cubic equation d) polynomial equation	

BLACKBOARD WRITING WORK

फलक लेखन कार्य

Class - 10

Subject - Mathematics

Topic - Quadratic Equation

Date

16/12/2023

Total st. - 50

Present st. - 49

Absent st. - 2

Teaching points :-

- 1) Definition of equation
- 2) Types of equation :-
 - a) linear equation
 - b) quadratic equation
 - c) cubic equation
 - d) polynomial equation
- 3) Category of equation
 - a) single variable equation
 - b) two variable equation

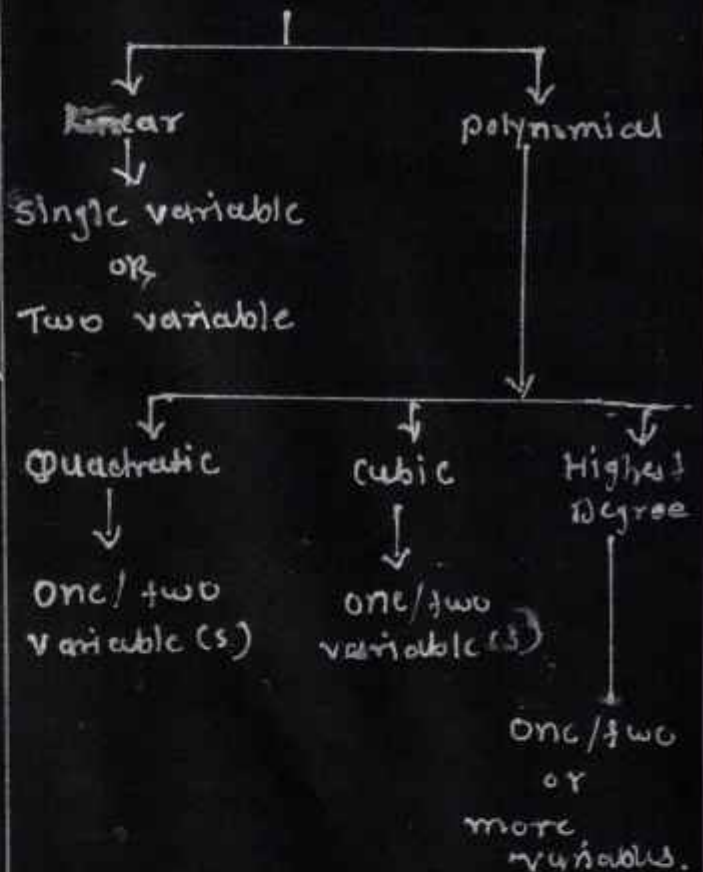
4) Examples :

- i) single variable :
 $2x + y = 0$ (degree one)
or two variable :

- ii) Two variable :
 $x^2 + 2xy + y^2 = 0$ (quadratic)

Diagrammatic :-

Types of equation



Homework :-

- 1) Write 9 example of linear equation
- 2) Write 7 example of quadratic equation

BLACKBOARD WRITING SKILL

फलक लेखन कौशल्य

Subject :- Physics

विषय

Sub - Unit :- Motion

विषयांश

Previous Knowledge :- About types of motion

पूर्वज्ञान

Class 9

वर्ग

Black Board Writing Skill
फलक लेखन कौशल्य

Sub Skill
उपकौशल्य

Teachers Activity

student Activity

Sub-skill.

Teaching points.

1) Definition of motion

2) Types of motion

3) category

a) linear motion

b) vibrational motion

c) Angular motion

BLACKBOARD WRITING WORK

फलक लेखन कार्य

Class - 9

subject - physics

Topic - Motion

Date:-
15/12/23

Total st. - 50
present st. - 45
Absent st. - 05

Teaching points:-

1) Definition of motion

2) Types of motion:

a) linear motion

b) vibrational motion

c) Angular motion

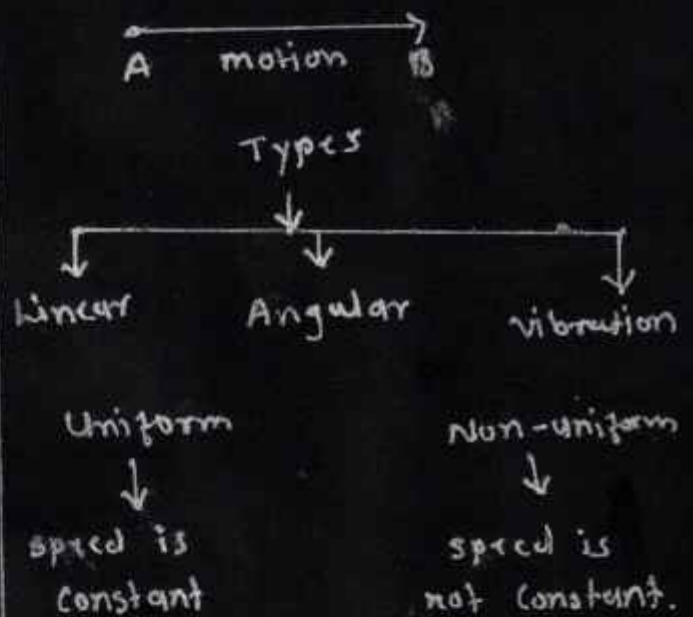
3) category:-

a) uniform

b) non-uniform

4) example

Diagram / Explanation:-



Homework:-

1) Write 3 example of uniform and non-uniform motion.

2) What is displacement?

INSPECTION

निरीक्षण तक्ता

BLACK BOARD WRITING / कौशल्य - फलक लेखन

अ) सुवाच्य लेखन

क्रम	उपघटक	पदनिश्चयन श्रेणी चढत्या क्रमाने				
		1	2	3	4	5
1	प्रत्येक अक्षर स्पष्ट				✓	
2	दोन अक्षरांमधील योग्य अंतर				✓	
3	दोन शब्दांमधील योग्य अंतर				✓	
4	अक्षरांचे योग्य वळण					✓
5	अक्षरांचा योग्य आकार					✓

ब) फलक लेखनातील व्यवस्थितपणा

क्रम	उपघटक	1	2	3	4	5
1	सरळ ओळीत लेखन				✓	
2	दोन ओळींमधील योग्य अंतर					✓
3	लेखन शुध्दता				✓	
4	योग्य नियोजन				✓	

क) योग्य लेखी काम

क्रम	उपघटक	1	2	3	4	5
1	योग्य मुद्यांची योग्य गुंफण					✓
2	लेखनातील आटोपशीरपणा				✓	
3	अवधान क्लृप्त्यांचा उपयोग				✓	
4	सर्व मुख्य मुद्यांचा समावेश				✓	

FEEDBACK प्रत्याभरण

Blackboard writing is very good. all words and

distance between them are written properly

on the board. Handwriting is very good.

All the points related to the topic included in

the representation.

INSPECTION

निरीक्षण तक्ता

BLACK BOARD WRITING / कौशल्य - फलक लेखन

अ) सुवाच्य लेखन

क्रम	उपघटक	पदनिश्चयन श्रेणी चढत्या क्रमाने				
		1	2	3	4	5
1	प्रत्येक अक्षर स्पष्ट				✓	
2	दोन अक्षरांमधील योग्य अंतर				✓	
3	दोन शब्दांमधील योग्य अंतर					✓
4	अक्षरांचे योग्य वळण				✓	
5	अक्षरांचा योग्य आकार				✓	

ब) फलक लेखनातील व्यवस्थितपणा

क्रम	उपघटक	1	2	3	4	5
1	सरळ ओळीत लेखन					✓
2	दोन ओळींमधील योग्य अंतर				✓	
3	लेखन शुध्दता				✓	
4	योग्य नियोजन				✓	

क) योग्य लेखी काम

क्रम	उपघटक	1	2	3	4	5
1	योग्य मुद्यांची योग्य गुंफण				✓	
2	लेखनातील आटोपशीरपणा				✓	
3	अवधान क्लृप्त्यांचा उपयोग				✓	
4	सर्व मुख्य मुद्यांचा समावेश				✓	

FEEDBACK प्रत्याभरण

Blackboard writing is very good. all words distance between them are written properly on the blackboard. Handwriting is also good. All the points related to the topic are included in representation.

Skalbook

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Subject : Mathematics
 विषय
 Sub - Unit : Quadratic equation
 विषयांश
 Previous Knowledge : About quadratic equation
 पूर्वज्ञान
 Class : 10
 वर्ग

Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य
Teachers Activity	Student Activity
<p>Teachers ask question related to the topic</p>	<p><u>Notes</u> :- Student answer properly.</p>
<p>What is equation ?</p> <p>very good, I'm impressed !</p> <p>What is quadratic equation ?</p>	<p>⇒ Two or more quantities can be expressed in terms of mathematical notation i.e. $+$, \times, \div called as equation - These quantities are equal to zero or some constant.</p> <p>⇒ The equation which has power 2 i.e. - degree is 2. eg. ① $x^2 + y + z^2 = 10$ ② $3x^2 + xy + yz = 0$</p>

(sub-skill)
 Acceptance
 Verbal Motivation
 Create the thinking power among the students.

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Sr. No.
क्रमांक

Subject :- Mathematics
विषय

Teaching
अध्यापन

Sub - Unit :- Quadratic equation
विषयांश

Re-Teaching
पुनर्ध्यापन

Previous Knowledge :- About quadratic equation
पूर्वज्ञान

Class 10
वर्ग

Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य
<p style="text-align: center;">Teachers Activity</p> <p>Do you know about cubic equation?</p> <p>very good. Can you tell me about higher degree equation?</p>	<p style="text-align: center;">Students Activity</p> <p>⇒ The equation which has power 3 i.e. degree is 3. eg. $x^3 + xy^2 + 3z^2 = 0$ $3xy^2 + 4x^2y + z^3 = 5$</p> <p>⇒ When an equation has two or more than two power (or degree) it is called as Polynomial equation.</p>
	<p style="text-align: center;">Sub-Skill</p> <p>increase & create the curious thinking power</p> <p>Motivate the student to increase the thinking power.</p>

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Sr. No. Subject :- Physics
 क्रमांक विषय
 Teaching Sub - Unit :- Motion
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge :- About Motion
 पुनर्ध्यापन पूर्वज्ञान
 Class ... 9
 वर्ग

Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य	Sub-skill
Teachers Activity ..	Student Activity	
<u>Note</u> :- Teacher ask question related to the topic	<u>Note</u> :- Student answer -ed properly	
<p>Q) What is momentum ?</p> <p>very good.</p> <p>very good, you have given a perfect answer (smiling face)</p> <p>Q) Which body or system have momentum? [some hint given] i.e. - system at rest or in motion.</p>	<p>=> Momentum is rate of change of displacement with respect to time and multiplication of mass with it.</p> <p>=> The system that is in motion have momentum.</p>	<p>Acceptance</p> <p>verbal motivation</p> <p>Motivation through expression</p> <p>Motivation to create the thinking power.</p>

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Sr. No.	Subject : <u>Physics</u>
क्रमांक	विषय
Teaching	Sub - Unit :- <u>Motion</u>
अध्यापन	विषयांश
Re-Teaching	Previous Knowledge :- <u>About motion</u>
पुनर्ध्यापन	पूर्वज्ञान
	Class <u>9</u>
	वर्ग

Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य
Teachers Activity	Student activity
<p>[Student Name] can you tell me the difference between the body at rest (system) and system in motion?</p> <p>very good, how many types of motion are there?</p>	<p>⇒ The system which is in motion, it has velocity and its mass gives the momentum and the velocity of the system at rest will be zero.</p> <p>⇒ There are three main types of motion:-</p> <ol style="list-style-type: none"> a) Vibrational motion b) Translation motion c) Rotational motion.

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल
OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ७ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Acceptance स्वीकृती		✓								
2) Verbal Motivation शाब्दिक प्रशंसा				✓						
3) Motivate through expression अशाब्दिक प्रशंसा					✓					
4) Motivate students by announcing their name व्यक्तिवाचक उल्लेख							✓			
5) Motivate students for participation सहभागी होण्यास इतर विद्यार्थ्यांना प्रोत्साहन									✓	

FEEDBACK प्रत्याभरण

students are motivated through expression
and verbal motivation. teaching skill
motivated all students for participation.
students are interested to learn more.

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Acceptance स्वीकृती		✓								
2) Verbal Motivation शाब्दिक प्रशंसा			✓							
3) Motivate through expression अशाब्दिक प्रशंसा					✓					
4) Motivate students by announcing their name व्यक्तिवाचक उल्लेख						✓				
5) Motivate students for participation सहभागी होण्यास इतर विद्यार्थ्यांना प्रोत्साहन							✓			

FEEDBACK प्रत्याभरण

students are motivated through expression and verbal motivation. Teaching skill motivated all students for participation.
students are interested to learn more.

Spalbrade

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. / क्रमांक
 Teaching / अध्यापन
 Re-Teaching / पुनर्ध्यापन
 Subject :- Mathematics / विषय
 Sub - Unit :- Quadratic equation / विषयांश
 Previous Knowledge :- Cubic equation / पूर्वज्ञान
 Class / वर्ग 10

Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य
Teachers Activity:	Student Activity:
<p><u>Note</u>:- Teachers ask different example related to the topic.</p>	<p><u>Note</u>:-</p>
<p>Q) What is quadratic equation?</p>	<p>⇒ The equation has only degree two that equation is called quadratic equation.</p>
<p>Q) can you tell me some examples?</p>	<p>⇒ There are following examples:-</p> <p>1) $x^2 + xy + y^2 + z^2 = 0$</p> <p>2) $p^2 + 9pq + q^2 = 9$</p> <p>Where, x, y, z, p & q, are variables in equation.</p> <p>(Another students)</p> <p>eg:- $t^2 + 3qt + 9q^2 = 0$</p> <p>Is this equation quadratic?</p>
	<p>Example related with content.</p> <p>Example ds per age</p> <p>various type of example</p>

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. क्रमांक	Subject :- Mathematics
Teaching अध्यापन	Sub - Unit
Re-Teaching पुनर्ध्यापन	Previous Knowledge
	पूर्वज्ञान
	Class
	वर्ग

Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य
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Teachers Activity	Students Activity	Sub-Skill
<p>If 'q' is variable then this is quadratic equation and if 'q' is constant then it is not a quadratic equation.</p> <p>In quadratic equation, there must be a power or addition of power should be equal to two (2)</p> <p>e.g. - $x^2 + y^2 \Rightarrow 1+1=2$ (OR) $x^2 \Rightarrow$ power 2</p> <p>Can you tell me some quadratic equation terms with examples?</p>	<p>x^3y is not quadratic equation then. It is cubic equation term.</p> <p>$\Rightarrow 5x^2, 3xy, 13y^2, 4t^2$, etc. where, x, y, t are all variables.</p>	<p>Student understands the ex. of various types.</p> <p>Involvement of student.</p> <p>Motive Achieved</p>

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. १	Subject :- Physics
क्रमांक	विषय
Teaching	Sub - Unit :- Motion
अभ्यास	विषयांश
Re-Teaching	Previous Knowledge :- Types of Motion
पुनर्भाषण	पूर्वज्ञान
	Class 9
	वर्ग

Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य	
Teachers Activity	Student Activity	Sub-skill
<p><u>Note</u> :- Teachers ask different example related to the topic.</p>	<p><u>Note</u> :-</p>	
<p>1) What is motion</p>	<p>⇒ Motion is change in position of an object with time.</p> <p>[Another student] motion is mathematically described in terms of displacement, distance, velocity, acceleration, time and speed.</p>	<p>Example related with content.</p> <p>Interesting explanation as per age.</p>
<p>2) Can you tell me about object motion?</p>	<p>⇒ An object's motion cannot change unless it is acted upon by a force or described</p>	<p>Gave actual phenomenon.</p>
<p>Tell me some examples of motion?</p>	<p>⇒ When body is in motion or steady state then this object remain in its state unless external force act on it.</p>	<p>Good explanation of example.</p>

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. क्रमांक	Subject विषय
Teaching अध्यापन	Sub - Unit विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge पूर्वज्ञान
	Class वर्ग

Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य
--	-----------------------

Q) Can you measure the motion?
How will measure the motion?

• yes
→ Acceleration is a measure of how much the velocity of an object changes in a certain time

various type of discussion being done with example

Q) Can you tell me laws of motion?

→ There are three main laws of motion
 i) Newton's first law of motion (law of inertia)
 ii) Newton's second law of motion:

$$\vec{F} = m \cdot \vec{a}$$

 iii) Newton's third law of motion:
 An action produces equivalent opposite reaction.

Involvement of students

Motive achieved

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर / दृष्टान्तीकरण उदाहरणसहित

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	Rating Scale पदनिश्चयन श्रेणी				
	Lower निम्न	Medium मध्यम	Satisfactory सुयोग्य	Good उत्कृष्ट	Excellent अत्युत्कृष्ट
1) Examples related with content पाठ्यवस्तूस पोषक उदाहरणे		✓			
2) Examples as per age वयानुरूप योग्य उदाहरणे			✓		
3) Interesting examples मनोवेदक उदाहरणे		✓			
4) Various types of examples विविध प्रकारची उदाहरणे			✓		
5) Number of examples उदाहरणांची संख्या				✓	
6) Involvement of students विद्यार्थी सहभाग					✓
7) Motive achieved उद्दिष्ट पूर्ती					✓

FEEDBACK प्रत्याभरण

Students try to understand the topic quadratic equation taken from mathematics by illustrating with examples. Students also get perfection in writing examples and understanding the topic.

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर / दृष्टान्तीकरण उदाहरणासहित

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	Rating Scale पदनिश्चयन श्रेणी				
	Lower निम्न	Medium मध्यम	Satisfactory सुयोग्य	Good उत्कृष्ट	Excellent अत्युत्कृष्ट
1) Examples related with content पाठ्यवस्तूस पोषक उदाहरणे		✓			
2) Examples as per age वयानुरूप योग्य उदाहरणे			✓		
3) Interesting examples मनोवेदक उदाहरणे			✓		
4) Various types of examples विविध प्रकारची उदाहरणे				✓	
5) Number of examples उदाहरणांची संख्या			✓		
6) Involvement of students विद्यार्थी सहभाग				✓	
7) Motive achieved उद्दिष्ट पूर्ती			✓		

FEEDBACK प्रत्याभरण

All examples are related with content. Various type of examples are given for understanding students are involved of learning the topic. Due to the examples related with topic students understand very well.

Shalinde

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Sr. No. / क्रमांक 1
 Subject / विषय Mathematics
 Teaching / अध्यापन Sub - Unit :- Quadratic equation (Revision)
 Re-Teaching / पुनर्ध्यापन Previous Knowledge / पूर्वज्ञान Quadratic equation (examples)
 Class / वर्ग 10

Closure Skill समारोप कौशल्य/समाप्ति कौशल	Sub Skill उपकौशल्य
Teacher activity	students Activity / Sub Skill
<p>We learn about the quadratic equation</p> <p>What is meant by quadratic equation?</p> <p>Can you tell me some examples of it?</p>	<p>The equation in which power of variable is equal to two then it is called quadratic equation</p> <p>1) $x^2 + 2xy + y^2 = \text{constant}$</p> <p>2) $t^2 + 9 + 4 + 4t^2 = 0$</p> <p>3) $3p^2 + 7q^2 + 4pq = 5$</p> <p>Recalling of topic and recollection of content</p> <p>Repetition</p>

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Sr. No. क्रमांक	Subject विषय
Teaching अध्यापन	Sub - Unit विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge पूर्वज्ञान
	Class वर्ग

Closure Skill
समारोप कौशल्य/समाप्ति कौशल

Sub Skill
उपकौशल्य

Teachers Activity

Student Activity

Sub-skill.

Identify the following quadratic terms/ equations :-

- i) $x^3 + 1 = 3$ ii) $x^2 + y^2 = 0$
 iii) $x^2 = 5$ iv) $3y^2 + x^2 = 7$

eg. - xy is is quadratic term ?

We will further study about other types of quadratic eqⁿ.

$x^3 + 1$ is not quadratic equation
 (ii), (iii), (iv) are quadratic equations.

xy is quadratic term if x & y both are variables.

Evaluation of the content

Connect gained knowledge with future.

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Subject Physics
 विषय
 Sub - Unit :- Motion (Revision)
 विषयांश
 Previous Knowledge : laws of motion
 पूर्वज्ञान
 Class 9
 वर्ग

Closure Skill समारोप कौशल्य/समाप्ति कौशल	Sub Skill उपकौशल्य
student activity	Teachers activity
<p>1) We learn about motion and its types</p> <p>2) can anyone tell me, what are the types of motion</p> <p>3) What are these types?</p>	<p>These are mainly three types of motion</p> <p>⇒ These types are</p> <ol style="list-style-type: none"> 1) vibrational motion 2) Translational motion 3) Rotational motion.

Sub-Skill
 Recelling of topic
 and
 recollection of content
 Recapitulation

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Sr. No. 2 Subject Physics
क्रमांक विषय
Teaching (Revision) Sub - Unit :- Motion (Revision)
अध्यापन विषयांश
Re-Teaching Previous Knowledge :- laws of motion
पुनर्ध्यापन पूर्वज्ञान
Class 9
वर्ग

Closure Skill समारोप कौशल्य/समाप्ति कौशल	Sub Skill उपकौशल्य	
Teacher Activity	Student Activity	Sub-Skill
<p>What is vibrational energy?</p> <p>What is translational energy?</p>	<p>=> If we give some external energy particles try to vibrate this vibration is called vibrational energy.</p> <p>=> The energy possessed by an object traveling in a straight path is called translational energy.</p>	

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

OBSERVATION CHART

निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

उपघटक	पदनिश्चयन श्रेणी (चढत्या क्रमांक)				
	1	2	3	4	5
1) Recollection of the content मुद्द्यांचे एकत्रीकरण मुद्दों का एकत्रीकरण				✓	
2) Recapitulation पुनरावलोकन करणे पुनरावलोकन करना				✓	
3) Evaluation of the content अध्यापन केलेल्या पाठ्यांशाचे मूल्यमापन अध्यापन किए पाठों का मूल्यमापन				✓	
4) Connect gained knowledge with future. प्राप्त ज्ञानाचा भावी अध्ययनाशी संबंध जोडणे. प्राप्त ज्ञान का भावी अध्ययन से संबंध स्थापित करना।				✓	

FEEDBACK प्रत्याभरण

There is a recollection of all content
students is understood verywell. The
knowledge regarding to the topic is help full
and advantageous for future. By
recapitulation the doubts of students
has been cleared.

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

OBSERVATION CHART

निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

उपघटक	पदनिश्चयन श्रेणी (चढत्या क्रमांक)				
	1	2	3	4	5
1) Recollection of the content मुद्द्यांचे एकत्रीकरण मुद्दों का एकत्रीकरण				✓	
2) Recapitulation पुनरावलोकन करणे पुनरावलोकन करना				✓	
3) Evaluation of the content अध्यापन केलेल्या पाठ्यांशाचे मूल्यमापन अध्यापन किए पाठों का मूल्यमापन				✓	
4) Connect gained knowledge with future. प्राप्त ज्ञानाचा भावी अध्ययनाशी संबंध जोडणे. प्राप्त ज्ञान का भावी अध्ययन से संबंध स्थापित करना।				✓	

FEEDBACK प्रत्याभरण

There is a recollection of all knowledge, content students understood very well.

The concept associated with the topic. The knowledge regarding to teaching topic is helpful and advantageous for the future. By the recapitulation the doubts of students are cleared.

Skalbrode

SHEELA MULTIPURPOSE SOCIETY

SHEELADEVI COLLEGE OF EDUCATION



WADI, NAGPUR
2023 - 2024

**MICRO - TEACHING
LESSON PLANNING BOOK**

**सूक्ष्म अध्यापन
पाठ नियोजन पुस्तिका**

Name Ms. Suman Ketan Sukhdere
नांव

Number _____
क्रमांक

Subject 1) Physics
विषय 2) Mathematics

अनुक्रमणिका
I N D E X

पाठांक S.No.	दिनांक Date	कौशल्य क्रमांक Skill No.	हस्ताक्षर Signature
1.	23.11.23 25.11.23	<u>INTRODUCTION SKILL</u> a) Physics b) Mathematics	Skalbande
2.	30.11.23 02.12.23	<u>QUESTIONING SKILL</u> a) Physics b) Mathematics	Skalbande
3.	05.12.23 07.12.23	<u>EXPLANATION SKILL</u> a) Physics b) Mathematics	Skalbande
4.	11.12.23 13.12.23	<u>STIMULUS VARIATION SKILL</u> a) Physics b) Mathematics	Skalbande
5.	16.12.23 19.12.23	<u>BLACKBOARD WRITING SKILL</u> a) Physics b) Mathematics	Skalbande
6.	22.12.23 26.12.23	<u>INSPECTION</u> a) Physics b) Mathematics	Skalbande
7.	22.12.23 26.12.23	<u>REINFORCEMENT SKILL</u> a) Physics b) Mathematics	Skalbande
8.	29.12.23 01.01.24	<u>ILLUSTRATING WITH EXAMPLES</u> a) Physics b) Mathematics	Skalbande
9.	04.01.24	<u>CLOSURE SKILL</u> a) Physics	Skalbande

INTRODUCTION SKILL

प्रस्तावना कौशल्य

SUBJECT - PHYSICS

TOPIC - MOTION

वेळ - ५ मिनिट

Time Duration : 5 Minutes

पुस्तक क्र. १००

पृष्ठ क्र. १००

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
<p><u>NOTE:</u> Teacher asked.</p> <p>[T] Q. What is movement?</p>	<p><u>NOTE:</u> Student answered properly.</p> <p>[S] Students answered that going here and there.</p>	<p>To develop the curiosity about the topic.</p>
<p>[T] Q. How you will go home?</p>	<p>[S] Student answered that by bicycle, auto, van, etc.</p>	<p>To establish the link between student</p>
<p>[T] Q. Is movement and exercise are related to each other?</p>	<p>[S] Student answered may be by walk it is exercise.</p>	<p>To know more about their daily routine.</p>

INTRODUCTION SKILL

प्रस्तावना कौशल्य

वेळ - ५ मिनिट

Time Duration : 5 Minutes

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
<p>[T] Q. How many of you know about the direction?</p>	<p>[S] Student answered that direction is a particular way.</p>	<p>To check the basic knowledge.</p>
<p>[T] Q. The movement in a particular exercise is done by you or not?</p>	<p>[S] The exercise of the movement of the body gives a particular direction.</p>	<p>To check their presence of mind.</p>
<p>[T] Q. Students, can you tell me the what is the phenomenon?</p>	<p>[S] Student asked exercisal movement.</p>	<p>To develop the curiosity.</p>

ANNOUNCEMENT OF TOPIC :

Found that students are so sharp and answered well about the topics.

Today, we will study about the topic 'MOTION'.

INTRODUCTION SKILL

प्रस्तावना कौशल्य

SUBJECT - MATHEMATICS

TOPIC - QUADRATIC EQUATION

वेळ - ५ मिनिट

Time Duration : 5 Minutes

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
<p><u>NOTE:</u> Teacher asked.</p> <p>[T] Q. What is equation polynomials?</p>	<p><u>NOTE:</u> Students answered properly.</p> <p>[S] It is the combination of variable and numbers.</p>	<p>To check the basic knowledge.</p>
<p>[T] Q. What is polynomial?</p>	<p>[S] It is the equation wherein the operations are used.</p>	<p>To know that what they know about it.</p>
<p>[T] Q. How many types of <u>polynomials</u>?</p>	<p>[S] There are three types of polynomials. a) Linear b) Quadratic c) Cubic</p>	<p>To know the previous class knowledge.</p>

INTRODUCTION SKILL

प्रस्तावना कौशल्य

वेळ - ५ मिनिट

Time Duration : 5 Minutes

Teacher Activity (शिक्षक कृती)	Student Activity (विद्यार्थी कृती)	Sub-Skills (उपकौशल्य)
<p>[T] Q. What is Linear equation?</p>	<p>[S] The polynomial with highest power 1.</p>	Link to previous knowledge
<p>[T] Q. What is Quadratic equation?</p>	<p>[S] The polynomial with highest power 2.</p>	
<p>[T] Q. What is cubic equation?</p>	<p>[S] The polynomial with highest power 3.</p>	

ANNOUNCEMENT OF TOPIC :

From the topic polynomial, we will learn about the 'QUADRATIC EQUATION'.

INTRODUCTION SKILL

प्रस्तावना कौशल्य

OBSERVATION CHART

निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

उपघटक	पदनिश्चयन श्रेणी (चढत्या क्रमांक)				
	1	2	3	4	5
1) लक्षवेधक प्रेरण मिळाले काय ? अभिप्रेरणा प्राप्त हुई क्या ? Motivated or not				✓	
2) शेवट पर्यंत लक्ष सिखळून ठेवण्यात यश मिळाले काय ? शुरु से अंत तक ध्यान स्थिर रहा की नहीं ? Attention of the students was from the start till end or not.				✓	
3) अपेक्षित पुर्वज्ञान जागृती केली काय ? अपेक्षित पुर्वज्ञान जागृत हुवा की नहीं ? Previous knowledge was araised or not.				✓	
4) पाठ्यघटकाची सांगड पुर्वानुभवाशी घातली गेली काय ? पाठ्यांश पुर्वानुभव के साथ जोडा गया की नहीं ? Whether the topic was related to previous knowledge or not.				✓	

FEEDBACK प्रत्याभरण

Students have previous knowledge.
Topic related to previous knowledge.
Students listen carefully and try to
give answers.

INTRODUCTION SKILL

प्रस्तावना कौशल्य

OBSERVATION CHART

निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

उपघटक	पदनिश्चयन श्रेणी (चढ्या क्रमांक)				
	1	2	3	4	5
1) लक्षवेधक प्रेरण मिळाले काय ? अभिप्रेरणा प्राप्त हुई क्या ? Motivated or not				✓	
2) शेवट पर्यंत लक्ष सिळवून ठेवण्यात यश मिळाले काय ? शुरु से अंत तक ध्यान स्थिर रहा की नहीं ? Attention of the students was from the start till end or not.				✓	
3) अपेक्षित पुर्वज्ञान जागृती केली काय ? अपेक्षित पुर्वज्ञान जागृत हुवा की नहीं ? Previous knowledge was araised or not.				✓	
4) पाठ्यघटकाची सांगड पुर्वानुभवाशी घातली गेली काय ? पाठ्यांश पुर्वानुभव के साथ जोडा गया की नहीं ? Whether the topic was related to previous knowledge or not.				✓	

FEEDBACK प्रत्याभरण

Topic was related to the
previous knowledge. Students were
actively answered.

✓
Feedback
3/02/2024

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No. <u>2</u>	Subject <u>Physics</u>
Teaching <u>Questioning Skills</u>	Sub - Unit <u>Motion</u>
Re-Teaching	Previous Knowledge <u>Distance, Speed</u>
पुनर्ध्यापन	पूर्वज्ञान
	Class <u>IX</u>
	वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य	
TEACHER ACTIVITY	STUDENTS ACTIVITY	SUB-SI
<p><u>NOTE</u>: Teacher asked questions.</p> <p>[T] Q. What is motion?</p> <p>[T] Q. Give some examples of motion.</p> <p>[T] Q. If we drop an object on the surface of earth from certain height is that a motion?</p>	<p><u>NOTE</u>: Students answered properly.</p> <p>[S] Students write the definition from the blackboard.</p> <p>[S] Students think and tell, movement of bicycle, movement of tyre of vehicle, etc.</p> <p>[S] Movement of any object fall on the surface of earth i.e. there is motion.</p>	<p>Low-level question</p> <p>Mid-level question</p> <p>High-level question</p>

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No. <u>2</u> क्रमांक	Subject <u>Physics</u> विषय
Teaching <u>Questioning Skill</u> अध्यापन	Sub - Unit <u>Motion</u> विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge <u>Distance, Speed</u> पूर्वज्ञान
	Class <u>IX</u> वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य
<div style="border: 1px solid black; display: inline-block; padding: 2px;">T</div> <p>Q. What is vertical motion?</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">S</div> <p>The motion along the Y-axis.</p> <p style="text-align: right;">High-level question</p>
<div style="border: 1px solid black; display: inline-block; padding: 2px;">T</div> <p>Q. What is horizontal motion?</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">S</div> <p>The motion along the X-axis.</p> <p style="text-align: right;">High-level question</p>
<div style="border: 1px solid black; display: inline-block; padding: 2px;">T</div> <p>Q. Give the example of vertical and horizontal motion?</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">S</div> <p>The sewing machine.</p> <p style="text-align: right;">Mid-level question</p>
<div style="border: 1px solid black; display: inline-block; padding: 2px;">T</div> <p>Q. What is uniform motion?</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">S</div> <p>The rate of change of constant velocity with respect to constant time is called uniform motion.</p> <p style="text-align: right;">Mid-level question</p>

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No. 3 Subject Mathematics
 क्रमांक विषय
 Teaching Questioning skill Sub - Unit Quadratic Equation
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge About polynomial
 पुनर्ध्यापन पूर्वज्ञान
 Class X
 वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य	SUB-SK.
TEACHER ACTIVITY	STUDENTS ACTIVITY	SUB-SK.
<p><u>NOTE</u>: Teacher asked questions.</p> <p><u>T</u> Q. What is algebraic expression?</p> <p><u>T</u> Q. What are the types of polynomials?</p> <p><u>T</u> Q. What is linear equation?</p>	<p><u>NOTE</u>: Students answered properly.</p> <p><u>S</u> It is one type of equation in which variables and constants are used.</p> <p><u>S</u> Three types of polynomial</p> <p>a) Linear b) Quadratic c) Cubic</p> <p><u>S</u> The equation in which the degree of the polynomial is 1.</p>	<p>Low-lev question</p> <p>Mid-lev question.</p> <p>Low-lev question</p>

QUESTIONING SKILL

प्रश्न कौशल्य

Sr. No. <u>2</u>	Subject <u>Mathematics</u>
Teaching <u>Questioning Skill</u>	Sub - Unit <u>Quadratic Equation</u>
Re-Teaching	Previous Knowledge <u>About polynomial</u>
पुनर्ध्यापन	पूर्वज्ञान
	Class <u>X</u>
	वर्ग

Questioning Skill प्रश्न कौशल्य	Sub Skill उपकौशल्य
<p>T Q. What is quadratic equation?</p>	<p>S The equation in which the degree of the polynomial is 2. Mid-level - question</p>
<p>T Q. What is cubic equation?</p>	<p>S The equation in which the degree of the polynomial is 3. Mid-level question</p>
<p>T Q. Give the examples of quadratic equation.</p>	<p>S Students writing in their notebooks $x^2 + 2x + 2 = 0$, etc. High-level - question</p>

QUESTIONING SKILL

प्रश्न कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Type of Question प्रश्नाचे प्रकार/प्रश्न के प्रकार								✓		
2) Level of Question प्रश्नाचे स्तर/प्रश्न का स्तर								✓		
3) Objective of Question उद्दिष्टानुसार प्रश्न उद्दिष्ट के अनुसार प्रश्न								✓		
i) Knowledge ज्ञान										
ii) Understanding आकलन							✓			
iii) Application उपयोजन								✓		
iv) Skill कौशल्य										✓

FEEDBACK प्रत्याभरण

Students are able to answer the questions and more curious about the topic.

QUESTIONING SKILL

प्रश्न कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Type of Question प्रश्नाचे प्रकार/प्रश्न के प्रकार								✓		
2) Level of Question प्रश्नाचे स्तर/प्रश्न का स्तर								✓		
3) Objective of Question उद्दिष्टानुसार प्रश्न उद्दिष्ट के अनुसार प्रश्न								✓		
i) Knowledge ज्ञान										
ii) Understanding आकलन										
iii) Application उपयोजन										
iv) Skill कौशल्य										

FEEDBACK प्रत्याभरण

Students are able to tell the examples of quadratic equation. Explain the definition which is previous knowledge

Skalbrde
2/02/2024

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

Sr. No. 3 Subject Physics
 क्रमांक विषय
 Teaching Explanation Skill Sub - Unit Motion
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge Types of motion and physical
 पुनर्ध्यापन पूर्वज्ञान quantities used in motion
 Class IX
 वर्ग

Explanation Skill स्पष्टीकरण कौशल्य	Sub Skill उपकौशल्य	
TEACHERS ACTIVITY	STUDENTS ACTIVITY	SUB-SK
<p>NOTE: Teacher asked</p> <p><u>T</u> Uniform motion is one of the category of motion.</p> <p><u>T</u> Here, uniform motion is defined as the motion of the particle or object from one point to another point with uniform speed.</p> <p><u>T</u> Let us take an example that car is moving with speed 40km/hr. From A to point B. Here speed is constant which means car is covering equal distance in equal interval of time.</p> <p><u>T</u> Students are listening or not and concentrate on board.</p>	<p>NOTE: Students answered</p> <p><u>S</u> Students were listening</p> <p><u>S</u> Students were writing in their notebooks.</p> <p><u>S</u> Students think and then give answered.</p> <p><u>S</u> Students are well attentive.</p>	<p>I</p> <p>Initial state</p> <p>Explana Conjunct</p> <p>Audio Visual</p>

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

Sr. No. <u>3</u>	Subject <u>Physics</u>
क्रमांक	विषय
Teaching <u>Explanation Skill</u>	Sub - Unit <u>Motion</u>
अध्यापन	विषयांश
Re-Teaching	Previous Knowledge <u>Types of motion & physical</u>
पुनर्ध्यापन	पूर्वज्ञान <u>quantities used in motion</u>
	Class <u>IX</u>
	वर्ग

Explanation Skill स्पष्टीकरण कौशल्य	Sub Skill उपकौशल्य
<p>T Imagine a train is moving with uniform speed of 20m/s it means that for every second train is covering a distance of 20m</p> <p>T Hands of clock always moves with uniform speed thus it is an example of uniform motion. That's why we use clock for the purpose of measurement of time.</p> <p>T From the above discussion, what we can conclude is that whenever an object moves with constant speed it perform uniform motion and distance covered in unit time is always same through out the motion.</p>	<p>S Students calculating the time from given data by their previous knowledge. Purposive Recapitulation</p> <p>S Students are able to know the use of clock.</p> <p>S Students are able to understand the topic content. final statement</p>

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

Sr. No <u>3</u> क्रमांक	Subject <u>Mathematics</u> विषय
Teaching <u>Explanation Skill</u> अध्यापन	Sub - Unit <u>Quadratic Equations</u> विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge <u>About polynomial</u> पूर्वज्ञान
	Class <u>X</u> वर्ग

Explanation Skill स्पष्टीकरण कौशल्य	Sub Skill उपकौशल्य
TEACHERS ACTIVITY	STUDENT ACTIVITY
<p>T What is quadratic equation? Equation with the degree of polynomial is 2. Ex. $x^2 + 4x + 4 = 0$</p> <p>T Quadratic equation can be in one variable or two variable. <u>One variable</u>: $x^2 + 4x + 2 = 0$ <u>Two variable</u>: $x^2 + 3xy + 2 = 0$</p> <p>T Now, we have to study quadratic equation in one variable</p>	<p>S Students are listening and very attentive as they were copying from blackboard.</p> <p>S Students are concentrating on blackboard.</p>
	SUB-S Initi state Expla confu Aud visu

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

Sr. No. <u>3</u>	Subject <u>Mathematics</u>
क्रमांक	विषय
Teaching <u>Explanation Skill</u>	Sub - Unit <u>Quadratic Equations</u>
अध्यापन	विषयांश
Re-Teaching	Previous Knowledge <u>About polynomial</u>
पुनर्ध्यापन	पूर्वज्ञान
	Class <u>X</u>
	वर्ग

Explanation Skill स्पष्टीकरण कौशल्य	Sub Skill उपकौशल्य	
<p>T What is the solution of quadratic eqⁿ? The value of variables that satisfy the equation is called solution or roots or zero's.</p>	<p>S Students writing by teachers dictation.</p>	<p>Purposive Recapitulation</p>
<p>T Ex. $x^2 + 4x + 4 = 0$ verify is $x = -2$ is the solution of given equation Put $x = -2$, $\therefore \text{LHS} = x^2 + 4x + 4$ $= (-2)^2 + 4(-2) + 4$ $= 4 - 8 + 4$ $= 0$ $\therefore \text{LHS} = \text{RHS}$ $\therefore x = -2$ is the solution of given equation</p>	<p>S Students looking and concentrating on board.</p>	<p></p>
<p>Thus, by putting various values of variables in given equation.</p>	<p>S Students are able to find the solution of the given equation</p>	<p>Final statement</p>

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Initial Statement प्रथम विधान							✓			
2) Explanation Conjunction स्पष्टीकरण दुवे							✓			
3) Use of audio - visual दृक्श्राव्य साधनाचा वापर							✓			
4) Purposive Recapitulation योजनापुर्वक पुनरावलोकन योजनापुर्वक पुनरावृत्ती							✓			
5) Final Statement अंतिम विधान							✓			

FEEDBACK प्रत्याभरण

Students are able to understand the concept and noted in their notebooks.

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ferment

EXPLANATION SKILL

स्पष्टीकरण कौशल्य

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनि

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Initial Statement प्रथम विधान							✓			
2) Explanation Conjunction स्पष्टीकरण दुवे							✓			
3) Use of audio - visual दृक्श्राव्य साधनाचा वापर							✓			
4) Purposive Recapitulation योजनापुर्वक पुनरावलोकन योजनापुर्वक पुनरावृत्ती							✓			
5) Final Statement अंतिम विधान							✓			

FEEDBACK प्रत्याभरण

Students are ready for
doing such types of questions and
concentrating on the problems.

Kalbarde

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

Sr. No. 4 Subject Physics
 क्रमांक विषय
 Teaching Stimulus Variation Skill Sub - Unit Motion
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge About motion
 पुनर्ध्यापन पूर्वज्ञान
 Class IX
 वर्ग

Stimulus Variation Skill चेतक - बदल कौशल्य	Sub Skill उपकौशल्य	
TEACHERS ACTIVITY	STUDENTS ACTIVITY	SUB-SKILL
<p><u>NOTE</u>: Teachers asked questions.</p> <p>T As we have studied uniform motion is a motion with constant speed. Is earth is performing uniform motion?</p> <p>T Theoretically, we can say that earth rotate with constant speed. Imagine that speed is changed then what will happened?</p>	<p><u>NOTE</u>: Students answered properly.</p> <p>S Yes, because earth completes its one rotation in one year.</p> <p>S Time will change for the completion of one rotation around earth and we will not get 365 days in one year.</p>	<p>Gesture of teacher, Verbal participation of students</p> <p>Active participation of students</p>

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

Sr. No. <u>4</u> क्रमांक	Subject <u>Physics</u> विषय
Teaching <u>Stimulus Variation Skill</u> अध्यापन	Sub - Unit <u>Motion</u> विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge <u>About motion</u> पूर्वज्ञान
	Class <u>IX</u> वर्ग

Stimulus Variation Skill चेतक - बदल कौशल्य	Sub Skill उपकौशल्य
<p>[T] Explanation about non-uniform motion by taking a fractional examples.</p> <p>[T] If speed varies with time then the motion is non-uniform motion.</p> <p>[T] What happens when we drive on road having heavy traffics, our speed varies every second it means that we are not moving with constant speed thus they have to perform non-uniform motion.</p>	<p>[S] Students listening the examples. Movement of teacher</p> <p>[S] Student eagerly waiting for the response of teacher. Change in speech pattern</p>

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

Sr. No. 4 क्रमांक	Subject Mathematics विषय
Teaching Stimulus Variation Skill अध्यापन	Sub - Unit Quadratic Equation विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge About quadratic equation पूर्वज्ञान
	Class X वर्ग

Stimulus Variation Skill चेतक - बदल कौशल्य	Sub Skill उपकौशल्य	
TEACHERS ACTIVITY	STUDENTS ACTIVITY	SUB-SKILL
<p><u>NOTE:</u> Teacher asked questions.</p> <p>[T] We will study methods for finding the roots of given equation.</p> <p>[T] There are three methods for finding the roots.</p> <p>a) Factorization b) Perfect square method c) formula method</p> <p>[T] What is the factor of $x^2 + 4x + 4 = 0$</p> <p>[T] In factorization method, we have to find the factors of middle term.</p>	<p><u>NOTE:</u> Students answered properly.</p> <p>[S] Students are trying to factorize according to their previous knowledge.</p> <p>[S] Students are copying from the board</p> <p>[S] Students answered $(x+2)$ is the the factor of $x^2 + 4x + 4 = 0$</p>	<p>Gesture of teachers</p> <p>Movement of teachers</p> <p>Verbal participation of students</p>

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उदिपन भिन्नता

Sr. No. <u>4</u> क्रमांक Teaching <u>Stimulus Variation Skill</u> अध्यापन Re-Teaching पुनर्ध्यापन	Subject <u>Mathematics</u> विषय Sub - Unit <u>Quadratic Equation</u> विषयांश Previous Knowledge <u>About quadratic equation</u> पूर्वज्ञान Class <u>X</u> वर्ग
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Stimulus Variation Skill चेतक - बदल कौशल्य	Sub Skill उपकौशल्य
<p>[I] Ex. $x^2 + 4x + 4 = 0$ product = $1 \times 4 = +4$ $x^2 + 2x + 2x + 4 = 0$ Sum of middle term = $+4$ $x(x+2) + 2(x+2) = 0$ $(x+2)(x+2) = 0$ $x+2 = 0$ or $x+2 = 0$ $x = -2$ or $x = -2$ Here, $(x+2)$ is a factor and $x = -2$ is the solution.</p> <p>[II] Ex. $x^2 - 4x + 4 = 0$ Product = $1 \times 4 = 4$ $x^2 - 2x - 2x + 4 = 0$ Sum of middle term = -4 $x(x-2) - 2(x-2) = 0$ $(x-2)(x-2) = 0$ $x-2 = 0$ or $x-2 = 0$ $x = 2$ or $x = 2$ Here, $(x-2)$ is the factor and $x = 2$ is the solution.</p>	<p>[S] Students give response about multiplication and addition. Change in speech pattern</p> <p>[S] Students are trying to solve the question. Change in stimulus variation</p>

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Movement of Teacher शिक्षक हालचाल / विघाटे								✓		
2) Gesture of Teacher शिक्षक हावभाव								✓		
3) Change in stimulus variation चेतक बदल/उद्विपन भिन्नता							✓			
4) Change in Speech Pattern भाषा शैलीत परिवर्तन भाषा शैली में परिवर्तन							✓			
5) Verbal participation of students विद्यार्थ्यांचा शाब्दिक सहभाग छात्र का शाब्दिक सहभाग								✓		
6) Active Participation of Students विद्यार्थ्यांचा सक्रिय सहभाग छात्र का सहभाग								✓		

FEEDBACK प्रत्याभरण

Students are listening and able to think by theoretic data. Students taking interest.

STIMULUS VARIATION SKILL

चेतक - बदल कौशल्य/उद्विपन भिन्नता

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Movement of Teacher शिक्षक हालचाल / विद्याए								✓		
2) Gesture of Teacher शिक्षक हावभाव								✓		
3) Change in stimulus variation चेतक बदल/उद्विपन भिन्नता							✓			
4) Change in Speech Pattern भाषा शैलीत परिवर्तन भाषा शैली में परिवर्तन							✓			
5) Verbal participation of students विद्यार्थ्यांचा शाब्दिक सहभाग छात्र का शाब्दिक सहभाग								✓		
6) Active Participation of Students विद्यार्थ्यांचा सक्रिय सहभाग छात्र का सहभाग										✓

FEEDBACK प्रत्याभरण

Students are satisfying with
the questions and want more
questions as a homework.

Feedback

BLACKBOARD WRITING SKILL

फलक लेखन कौशल्य

Sr. No. 5
क्रमांक
Teaching Blackboard writing skill
अध्यापन
Re-Teaching
पुनर्ध्यापन

Subject Physics
विषय
Sub - Unit Motion
विषयांश
Previous Knowledge About types of motion
पूर्वज्ञान
Class IX
वर्ग

Black Board Writing Skill
फलक लेखन कौशल्य

Sub Skill
उपकौशल्य

TEACHERS ACTIVITY

STUDENTS ACTIVITY SUB-SKILL

1
Teaching Points

- 1) Definition of motion
- 2) Types of motion:
 - a) Linear motion
 - b) Angular motion
 - c) Vibrational motion
- 3) Category:
 - a) Uniform motion
 - b) Non-uniform motion
- 4) Examples:

[S]

Students are listening and written all the definitions from blackboard.

BLACKBOARD WRITING WORK

फलक लेखन कार्य

Date:
16.12.23

SKILL: BLACKBOARD WRITING

SUBJECT: PHYSICS

TOPIC: MOTION

Total-58

Present-54

Absent-04

Teaching points:

1) Definition of motion

2) Types of motion:

a) Linear motion

b) Angular motion

c) Vibrational motion

3) Category:

a) Uniform

b) Non-uniform

4) Examples

Diagram/Explanation

(A) → (B)

Motion

Linear

Angular

Vibrational

Uniform

Non-uniform

Speed is
constant

Speed is not
constant

HOMEWORK:

1) Write 3 examples of uniform and non-uniform motion.

2) What is displacement?

BLACKBOARD WRITING SKILL

फलक लेखन कौशल्य

Sr. No. 5
क्रमांक
Teaching Blackboard Writing Skill
अध्यापन
Re-Teaching
पुनर्ध्यापन

Subject Mathematics
विषय
Sub - Unit Quadratic equation
विषयांश
Previous Knowledge About quadratic equation
पूर्वज्ञान
Class X
वर्ग

Black Board Writing Skill
फलक लेखन कौशल्य

Sub Skill
उपकौशल्य

TEACHERS ACTIVITY

STUDENTS ACTIVITY SUB-SKILL

Teaching points:

- 1) Definition of equation
- 2) Types of equation
 - a) Linear equation
 - b) Quadratic equation
 - c) Cubic equation
 - d) Polynomial equation
- 3) Category of equation
 - a) Single variable equation
 - b) Two variable equation

4) Examples:

[S]

Students are concentrating towards the board and copying the questions from the board.

BLACKBOARD WRITING WORK

फलक लेखन कार्य

SKILL: BLACKBOARD WRITING

SUBJECT: MATHEMATICS

TOPIC: QUADRATIC EQUATION

Teaching points:

1) Definition of equation

2) Types of equation:

- Linear equation
- Quadratic equation
- Cubic equation
- Polynomial equation

3) Category of equation

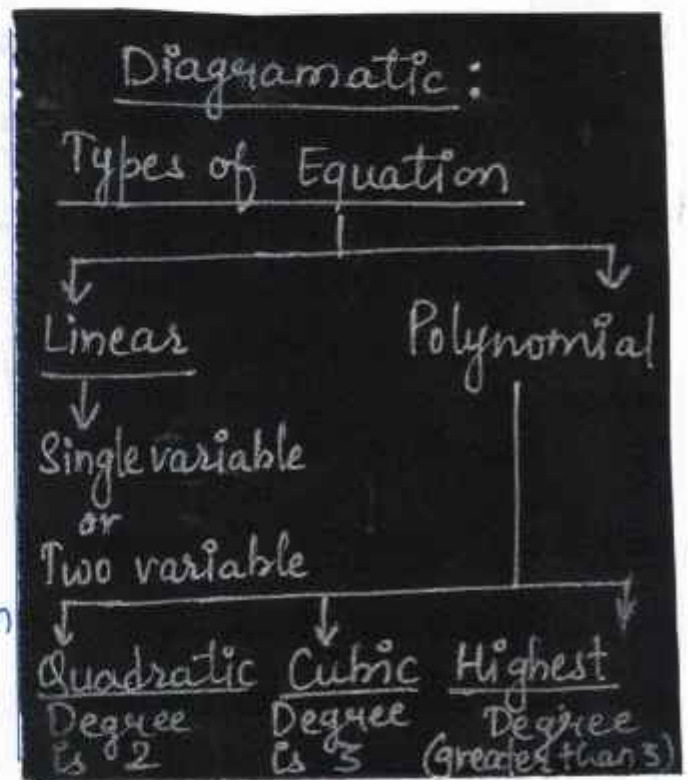
- Single variable equation
- Two variable equation

4) Examples:

- Single variable : $x+y=0$ (Degree one)
OR two variable: $3x=0$, $9y=0$ (Linear)
- Two variables: $x^2+xy+y^2=0$ (Quadratic)

HOMEWORK:

- Write 5 examples of linear equation.
- Write 5 examples of quadratic equation.



INSPECTION

निरीक्षण तक्ता

BLACK BOARD WRITING / कौशल्य - फलक लेखन

अ) सुवाच्य लेखन

क्रम	उपघटक	पदनिश्चयन श्रेणी चढत्या क्रमाने				
		1	2	3	4	5
1	प्रत्येक अक्षर स्पष्ट					✓
2	दोन अक्षरांमधील योग्य अंतर					✓
3	दोन शब्दांमधील योग्य अंतर					✓
4	अक्षरांचे योग्य वळण				✓	
5	अक्षरांचा योग्य आकार					✓

ब) फलक लेखनातील व्यवस्थितपणा

क्रम	उपघटक	1	2	3	4	5
1	सरळ ओळीत लेखन				✓	
2	दोन ओळींमधील योग्य अंतर					✓
3	लेखन शुध्दता					✓
4	योग्य नियोजन					✓

क) योग्य लेखी काम

क्रम	उपघटक	1	2	3	4	5
1	योग्य मुद्यांची योग्य गुंफण				✓	
2	लेखनातील आटोपशीरपणा				✓	
3	अवधान क्लृप्त्यांचा उपयोग					✓
4	सर्व मुख्य मुद्यांचा समावेश					✓

FEEDBACK प्रत्याभरण

Students are trying to understand the blackboard skill of quadratic equations and trying to solve the numericals.

INSPECTION

निरीक्षण तक्ता

BLACK BOARD WRITING / कौशल्य - फलक लेखन

अ) सुवाच्य लेखन

क्रम	उपघटक	पदनिश्चयन श्रेणी चढत्या क्रमाने				
		1	2	3	4	5
1	प्रत्येक अक्षर स्पष्ट					✓
2	दोन अक्षरांमधील योग्य अंतर					✓
3	दोन शब्दांमधील योग्य अंतर				✓	
4	अक्षरांचे योग्य वळण				✓	
5	अक्षरांचा योग्य आकार					✓

ब) फलक लेखनातील व्यवस्थितपणा

क्रम	उपघटक	1	2	3	4	5
1	सरळ ओळीत लेखन				✓	
2	दोन ओळींमधील योग्य अंतर					✓
3	लेखन शुध्दता					✓
4	योग्य नियोजन				✓	

क) योग्य लेखी काम

क्रम	उपघटक	1	2	3	4	5
1	योग्य मुद्यांची योग्य गुंफण				✓	
2	लेखनातील आटोपशीरपणा					✓
3	अवधान क्लृप्त्यांचा उपयोग				✓	
4	सर्व मुख्य मुद्यांचा समावेश					✓

FEEDBACK प्रत्याभरण

Students are trying to understand the blackboard skill on the topic motion and trying to get perfection in writing and understanding.

Subcribe

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Sr. No. <u>7</u> क्रमांक	Subject <u>Physics</u> विषय
Teaching <u>Reinforcement skill</u> अध्यापन	Sub - Unit <u>Motion</u> विषयांश
Re-Teaching पुनर्ध्यापन	Previous Knowledge <u>Types of motion</u> पूर्वज्ञान
	Class <u>IX</u> वर्ग

Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य
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TEACHERS ACTIVITY

STUDENTS ACTIVITY] SUB-SKILL

NOTE: TEACHER asked question.
 I] What is momentum?

NOTE: Student answered.
 S] Momentum is rate of change of displacement with respect to time and the multiplication of mass with it.

Acceptance

I] Very Good.

II] Very good, you have given a perfect answer (Smile on face)

I] (Some hint given) i.e. System at rest or in motion.

S] The system that is in motion have momentum.

Verbal motivation, Motivation through expression.

Motivate to create thinking power.

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Sr. No. <u>7</u> क्रमांक Teaching <u>Reinforcement Skill</u> अध्यापन Re-Teaching पुनर्ध्यापन	Subject <u>Physics</u> विषय Sub - Unit <u>Motion</u> विषयांश Previous Knowledge <u>Types of motion</u> पूर्वज्ञान Class <u>IX</u> वर्ग
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Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य
<p>T (Student name) Can you tell me the difference between the body at rest (system) and system in motion?</p>	<p>S The system which is in motion, it has velocity and its mass gives the momentum and the velocity of the system at rest will be zero.</p>
<p>T Very good, how many types of motion are there?</p>	<p>S There are three main types of motion:</p> <ol style="list-style-type: none"> a) Translational motion b) Angular motion c) Vibrational motion

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Sr. No. 7 Subject Mathematics
 क्रमांक विषय
 Teaching Reinforcement Skill Sub - Unit Quadratic equation
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge Types of equation
 पुनर्ध्यापन पूर्वज्ञान
 Class X
 वर्ग

Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य
<p>TEACHERS ACTIVITY</p> <p>TE: Teacher asked questions. That is equation?</p> <p>[Very good, I'm impressed!</p> <p>What is quadratic equation?</p>	<p>STUDENTS ACTIVITY</p> <p>NOTE: Students answered</p> <p>[S] Two or more quantities can be expressed in terms of mathematical notation i.e. +, -, x or ÷ called as equation. These quantities are equal to zero or some constant.</p> <p>[S] Equation which has power 2 i.e. degree is 2. Ex. (a) $x^2 + xy + y^2 = 0$ (b) $3x^2 + xy + 2 = 0$</p>
	<p>SUB-SKILL</p> <p>Acceptance</p> <p>Verbal motivation</p> <p>Motivation through expression</p> <p>Create the thinking power among the students.</p>

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल्य

Sr. No. <u>7</u> क्रमांक Teaching <u>Reinforcement Skill</u> अध्यापन Re-Teaching पुनर्ध्यापन	Subject <u>Mathematics</u> विषय Sub - Unit <u>Quadratic equation</u> विषयांश Previous Knowledge <u>Types of equation</u> पूर्वज्ञान Class <u>X</u> वर्ग
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Reinforcement Skill प्रबलन कौशल्य/पुनर्बलन कौशल्य	Sub Skill उपकौशल्य
<p>[T] Do you know about cubic equation?</p>	<p>[S] The equation which has power 3, i.e. degree is 3. Ex. $x^3 + xy^2 + 3y^2 = 0$ $3xy^2 + 4x^2y + 8^5 = 5$</p> <p>Increase and create the curiosity power.</p>
<p>[T] Very good. Can you tell me about higher degree equation?</p>	<p>[S] When an equation has two or more than two power (or degree) it is called as polynomial equation.</p> <p>Motivate the student to increase the thinking power.</p>

REINFORCEMENT SKILL

प्रबलन कौशल्य/पुनर्बलन कौशल
OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ७ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Acceptance स्वीकृती									✓	
2) Verbal Motivation शाब्दिक प्रशंसा										✓
3) Motivate through expression अशाब्दिक प्रशंसा										✓
4) Motivate students by announcing their name व्यक्तिवाचक उल्लेख									✓	
5) Motivate students for participation सहभागी होण्यास इतर विद्यार्थ्यांना प्रोत्साहन										✓

FEEDBACK प्रत्याभरण

Students are trying to understand and get motivated through the reinforcement skill. Also trying to get perfection in writing examples and telling orally as well as understanding about motion topic of physics.

REINFORCEMENT SKILL
प्रबलन कौशल्य/पुनर्बलन कौशल
OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ७ मिनिट

Sub Skills उपकौशल्य	1	2	3	4	5	6	7	8	9	10
1) Acceptance स्वीकृती									✓	
2) Verbal Motivation शाब्दिक प्रशंसा										✓
3) Motivate through expression अशाब्दिक प्रशंसा										✓
4) Motivate students by announcing their name व्यक्तिवाचक उल्लेख									✓	
5) Motivate students for participation सहभागी होण्यास इतर विद्यार्थ्यांना प्रोत्साहन										✓

FEEDBACK प्रत्याभरण

Students are trying to understand the reinforcement skill of mathematics on the topic quadratic equation and also trying to get perfection in their skills and writing examples.

Feedback

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. <u>8</u>	Subject <u>Physics</u>
क्रमांक	विषय
Teaching <u>Illustrating with examples</u>	Sub - Unit <u>Motion</u>
अध्यापन	विषयांश
Re-Teaching	Previous Knowledge <u>Types of motion</u>
पुनर्ध्यापन	पूर्वज्ञान
	Class <u>IX</u>
	वर्ग

Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य
<p>TEACHERS ACTIVITY</p> <p><u>NOTE:</u> Teacher asked question.</p> <p>[T] What is motion?</p>	<p>STUDENT ACTIVITY SUB-SKILL</p> <p><u>NOTE:</u> Students answered properly.</p> <p>[S] (Another student) Interesting motion is mathematically described as per age. in terms of displacement, distance velocity, acceleration time and speed.</p> <p>[S] Motion is change in position of an object with time. Example related with content.</p> <p>[S] An objects motion cannot change unless it is acted upon by a force, as described. Gave actual phenomenon</p>

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. 8 Subject Physics
 क्रमांक विषय
 Teaching Illustrating with examples Sub - Unit Motion
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge Types of motion
 पुनर्ध्यापन पूर्वज्ञान
 Class IX
 वर्ग

Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य
<p>[T] Tell me some examples of motion?</p>	<p>[S] When body is in motion or steady state, then this object remains in its state unless external force act on it. Good explanation of example.</p>
<p>[T] How will measure the motion?</p>	<p>[S] Acceleration is a measure of how much velocity of object changes in a certain time. Various types of discussion being done with examples.</p>
<p>[T] Can you tell me laws of motion?</p>	<p>[S] There are three laws of motion a) Newton's first law of motion Involvement of student b) Newton's second law of motion Motive achieved c) Newton's third law of motion</p>

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. 8 Subject Mathematics
 क्रमांक विषय
 Teaching Illustrating with examples Sub - Unit Quadratic equation
 अध्यापन विषयांश
 Re-Teaching Previous Knowledge Cubic equation
 पुनर्ध्यापन पूर्वज्ञान
 Class X
 वर्ग

Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य	
TEACHERS ACTIVITY	STUDENTS ACTIVITY	SUB-SKILL
<p><u>NOTE</u>: Teacher asked question.</p> <p>T What is quadratic equation?</p> <p>T Can you tell me some examples?</p>	<p><u>NOTE</u>: Students answered properly.</p> <p>S Equation has only degree two is called quadratic equation</p> <p>S There are following examples:</p> <p>(a) $x^2 + xy + y^2 + 5z^2 = 0$</p> <p>(b) $p^2 + 9pq + q^2 = 9$</p> <p>where, x, y, z, p and q are variables in equation.</p> <p>S (Another student) Ex. $t^2 + 5qt + 9q^2 = 0$</p> <p>S Is this, equation quadratic?</p>	<p>Example related with content</p> <p>Example as per age</p> <p>Various types of examples.</p>

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित

Sr. No. <u>8</u> क्रमांक Teaching <u>Illustrating with examples</u> अध्यापन Re-Teaching पुनर्ध्यापन	Subject <u>Mathematics</u> विषय Sub - Unit <u>Quadratic equation</u> विषयांश Previous Knowledge <u>Cubic equation</u> पूर्वज्ञान Class <u>X</u> वर्ग
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Illustrating with examples उदाहरण व दाखल्यांचा वापर/दृष्टान्तीकरण उदाहरणासहित	Sub Skill उपकौशल्य
<p>T If 'q' is variable then this is quadratic equation and if 'q' is constant then it is not a quadratic equation.</p> <p>T In quadratic equation, there must be a power or addition of power should be equal to two (2). i.e. $x^1y^1 \Rightarrow 1+1=2$ or $x^2 \rightarrow$ power = 2</p> <p>T Can you tell me some quadratic equation terms with examples?</p>	<p>S x^2y is not quadratic equation term. It is a cubic equation term.</p> <p>S $6xq, 3xy, 3y^2, 4t^2$, etc. where, x, q, y, s, t are all variables.</p> <p>Various types of examples Involvement of students Motive achieved</p>

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर / दृष्टान्तीकरण उदाहरणसहित

OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	Rating Scale पदनिश्चयन श्रेणी				
	Lower निम्न	Medium मध्यम	Satisfactory सुयोग्य	Good उत्कृष्ट	Excellent अत्युत्कृष्ट
1) Examples related with content पाठ्यवस्तूस पोषक उदाहरणे					✓
2) Examples as per age वयानुरूप योग्य उदाहरणे				✓	
3) Interesting examples मनोवेदक उदाहरणे					✓
4) Various types of examples विविध प्रकारची उदाहरणे				✓	
5) Number of examples उदाहरणांची संख्या					✓
6) Involvement of students विद्यार्थी सहभाग					✓
7) Motive achieved उद्दिष्ट पूर्ती					✓

FEEDBACK प्रत्याभरण

Students are trying to understand illustrating with examples on the topic motion taken from physics. Students also get perfection in their skills and as well as understanding.

ILLUSTRATING WITH EXAMPLES

उदाहरण व दाखल्यांचा वापर / दृष्टान्तीकरण उदाहरणसहित
OBSERVATION CHART निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

Sub Skills उपकौशल्य	Rating Scale पदनिश्चयन श्रेणी				
	Lower निम्न	Medium मध्यम	Satisfactory सुयोग्य	Good उत्कृष्ट	Excellent अत्युत्कृष्ट
1) Examples related with content पाठ्यवस्तूस पोषक उदाहरणे					✓
2) Examples as per age वयानुरूप योग्य उदाहरणे				✓	
3) Interesting examples मनोवेदक उदाहरणे				✓	
4) Various types of examples विविध प्रकारची उदाहरणे					✓
5) Number of examples उदाहरणांची संख्या				✓	
6) Involvement of students विद्यार्थी सहभाग				✓	
7) Motive achieved उद्दिष्ट पूर्ती					✓

FEEDBACK प्रत्याभरण

Students are trying to understand the topic quadratic equation taken from mathematics by illustrating with examples. Students also get perfection in writing examples and understanding the topic.

Skalbrak

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Sr. No. <u>9</u>	Subject <u>Physics</u>
Teaching <u>Closure Skill</u>	Sub - Unit <u>Motion (Revision)</u>
Re-Teaching	Previous Knowledge <u>Laws of motion</u>
पुनर्ध्यापन	पूर्वज्ञान <u>IX</u>
	Class <u>IX</u>
	वर्ग

Closure Skill समारोप कौशल्य/समाप्ति कौशल	Sub Skill उपकौशल्य
<p style="text-align: center;">TEACHERS ACTIVITY</p> <p><u>NOTE</u>: Teacher asked questions.</p> <p><input type="checkbox"/> We learnt about motion and its types.</p> <p><input type="checkbox"/> Can anyone tell me, what are the types of motion?</p> <p><input type="checkbox"/> What are these types?</p>	<p style="text-align: center;">STUDENTS ACTIVITY</p> <p><u>NOTE</u>: Students answered properly.</p> <p><input type="checkbox"/> There are mainly three types of motion</p> <p><input type="checkbox"/> a) Translational motion b) Rotational motion c) Vibrational motion</p>
	<p style="text-align: center;">SUB-SKILL</p> <p>Recalling of topic & recollecting of content.</p> <p>Recapitulation</p>

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Sr. No. 9 Subject Physics
क्रमांक विषय
Teaching Closure skill Sub - Unit Motion (Revision)
अध्यापन विषयांश
Re-Teaching Previous Knowledge Laws of motion
पुनर्ध्यापन पूर्वज्ञान IX
Class IX
वर्ग

Closure Skill समारोप कौशल्य/समाप्ति कौशल	Sub Skill उपकौशल्य
<p>[T] What is translational motion?</p>	<p>[S] Motion of body along a linear path is called translational motion.</p>
<p>[T] What is rotational motion?</p>	<p>[S] Motion of body along a circular path is called rotational motion.</p>
<p>[T] What is vibrational motion?</p>	<p>[S] Motion of body along a to-and-fro and up-down is called vibrational motion.</p>
<p>[T] We will further study about laws of motion.</p>	<p>Connect gained knowledge with future.</p>

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Sr. No. <u>9</u> क्रमांक Teaching <u>Closure Skill</u> अध्यापन Re-Teaching पुनर्ध्यापन	Subject <u>Mathematics</u> विषय Sub - Unit <u>Quadratic Equation (Revision)</u> विषयांश Previous Knowledge <u>Quadratic equation (example)</u> पूर्वज्ञान Class <u>X</u> वर्ग
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Closure Skill समारोप कौशल्य/समाप्ति कौशल	STUDENTS ACTIVITY	Sub Skill उपकौशल्य SUB-SKILL
<p style="text-align: center;">TEACHERS ACTIVITY</p> <p><u>NOTE</u>: Teacher asked questions.</p> <p>[T] We learnt about quadratic equation.</p> <p>[T] What is meant by a quadratic equation?</p> <p>[T] Can you tell me some example of it?</p>	<p><u>NOTE</u>: Students answered properly.</p> <p>[S] Equation in which power or addition of power of variable is equal to two then it is called quadratic equation.</p> <p>[S]</p> <p>① $x^2 + xy + y^2 = \text{constant}$</p> <p>② $t^2 + 9tq + q^2 = 0$</p> <p>③ $3^2 + 7q^2 + 4pq = 5$</p>	<p>Recollection of topic</p> <p>Recapitulation</p>

CLOSURE SKILL

समारोप कौशल्य / समाप्ति कौशल

Sr. No. <u>9</u> क्रमांक	Subject <u>Mathematics</u> विषय
Teaching <u>Closure Skill</u> अध्यापन	Sub - Unit <u>Quadratic equation</u> विषयांश <u>(Revision)</u>
Re-Teaching पुनर्ध्यापन	Previous Knowledge <u>Quadratic equation</u> पूर्वज्ञान <u>(Examples)</u>
	Class <u>X</u> वर्ग

Closure Skill समारोप कौशल्य/समाप्ति कौशल	Sub Skill उपकौशल्य
<p>I] Identify the following quadratic terms/ equations:</p> <p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p> <p>II] Ex. xy, Is it quadratic term?</p> <p>III] We will further study about other types of quadratic equation.</p>	<p>S] Equation (a) is not quadratic and (b), (c), (d) are quadratic equation.</p> <p>S] xy is quadratic term if x and y are both variable</p> <p>Connect gained knowledge with future</p>

CLOSURE SKILL
समारोप कौशल्य / समाप्ति कौशल
OBSERVATION CHART
निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ५ मिनिट

उपघटक	पदनिश्चयन श्रेणी (चढत्या क्रमांक)				
	1	2	3	4	5
1) Recollection of the content मुद्द्यांचे एकत्रीकरण मुद्दों का एकत्रीकरण				✓	
2) Recapitulation पुनरावलोकन करणे पुनरावलोकन करना					✓
3) Evaluation of the content अध्यापन केलेल्या पाठ्यांशाचे मूल्यमापन अध्यापन किए पाठों का मूल्यमापन					✓
4) Connect gained knowledge with future. प्राप्त ज्ञानाचा भावी अध्ययनाशी संबंध जोडणे. प्राप्त ज्ञान का भावी अध्ययन से संबंध स्थापित करना।					✓

FEEDBACK प्रत्याभरण

Students learnt about the previous content, try to recapitulate and recollect the previous content and also gained knowledge with future of the topic from physics.

CLOSURE SKILL
समारोप कौशल्य / समाप्ति कौशल
OBSERVATION CHART
निरीक्षण तक्ता

Time Duration : 5 Minutes

वेळ - ७ मिनिट

उपघटक	पदनिश्चयन श्रेणी (चढत्या क्रमांक)				
	1	2	3	4	5
1) Recollection of the content मुद्द्यांचे एकत्रीकरण मुद्दों का एकत्रीकरण				✓	
2) Recapitulation पुनरावलोकन करणे पुनरावलोकन करना					✓
3) Evaluation of the content अध्यापन केलेल्या पाठ्यांशाचे मूल्यमापन अध्यापन किए पाठों का मूल्यमापन					✓
4) Connect gained knowledge with future. प्राप्त ज्ञानाचा भावी अध्ययनाशी संबंध जोडणे. प्राप्त ज्ञान का भावी अध्ययन से संबंध स्थापित करना।					✓

FEEDBACK प्रत्याभरण

Students felt the topic is very easy after recollecting and recapitulating the previous content learnt in the class. Also got future ideas related to the topic by connect gained knowledge with future.

skulbrake

Name Of Practical

NAME :- NAMRATA RAMESH NANDEKAR

CLASS :- B.ED (IIIrd sem)

SUBJECT :- PROJECT REPORT ON STUDY TOUR

PRACTICAL :- E.P.C. - I

COLLEGE :- SHEELADEVI COLLEGE OF EDUCATION,
WADI, NAGPUR.

Name Of Practical

Index

SR. No.	Topic	Pg. No.
1.	Introduction	03
2.	Aims & objectives of Study tour	04 to 06
3.	Importance of study tour	07 to 09
4.	Purpose of study tour	10 to 12
5.	About Nagaland	13 to 15
6.	Report Writing	16 to 18
7.	Conclusion	19
8.	Reference	20

Teachers Signature.....

Name Of Practical

Introduction

A study tour offers students a unique opportunity to enhance their academic experience by combining classroom learning with real-world exposure. These tours typically involve visits to educational institutions, industries, and cultural sites, providing students with practical insights, hands-on experiences, and a broader perspective on their subjects of study. It fosters experiential learning, cultural exchange, and personal growth, enriching students' education beyond the traditional classroom setting.

Nagalwadi is a quaint village located near Nagpur, known for its rich cultural heritage and close-knit community. Our study tour aims to explore the socio-economic aspects, traditional practices, and daily life of the villagers, from agriculture to local crafts. This immersive experience provides a unique opportunity to understand the challenges and resilience of rural communities.

Name Of Practical

Aims & Objectives of Study Tour

The primary aim of a study tour in a village is to provide students with a first-hand understanding of rural life, culture, and socio-economic dynamics. It aims to bridge the gap between theoretical knowledge gained in classrooms and the practical facilities of rural communities.

1. Cultural Immersion :-

- Understand and appreciate the cultural nuances, traditions and lifestyle of the rural community.
- Experience the customs, rituals and daily life of villagers to promote cultural sensitivity.

2. Socio-Economic Awareness :-

- Gain insights into the economic activities and livelihood prevalent in rural areas.
- Understand the challenges and opportunities associated with rural economics.

Name Of Practical

3. Community Interaction :-

- Interact with villagers to grasp their perspectives on local issues, community dynamics and aspirations.
- Foster community engagement and established community connection between students and villagers.

4. Environmental Understanding :-

- Explore the local environment and ecosystem, understanding the relationship between villagers and their surroundings.
- Raise awareness about sustainable surroundings.

5. Educational Outreach :-

- Collaborate with local educational institutions to understand the educational landscape in several areas.
- Explore opportunities for knowledge exchange and potential support for educational initiatives.

6. Health and social services :-

- Assess the availability and accessibility of healthcare and social services in several settings.

Name Of Practical

Importance of Study Tour

Enhances Knowledge And Understanding):

Educational trips involves group provided student with a chance of to learn about a particulare place or subject in a more interactive and immensive way for instance, visiting a historical site or a museum helps student better understand the history and culture of a place.

Promotes teamwork and social skills :-

Educational trips involve group activities and require student to work together, which help team develop teamwork skills and social skills this is crucial for younger pupils because it fosters their confidence and self-worth.

Teachers Signature

Name Of Practical

Encourages Independent learning :-

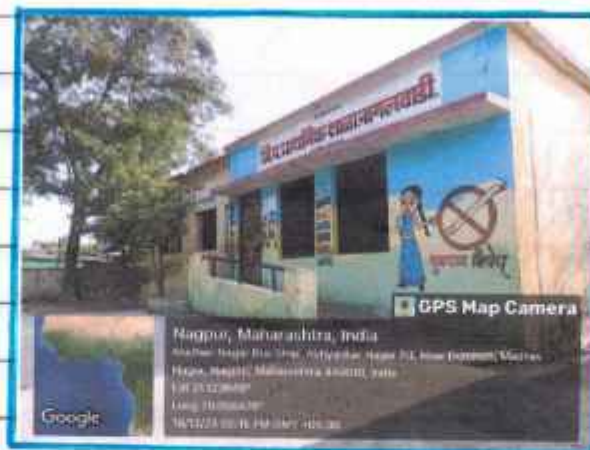
Educational trips required students to be more self-directed and take ownership of their learning. This helps students develop problem-solving skills and become a more independent learner.

Promotes Creativity and Critical Thinking :-

Educational trips provide students with a chance to think creatively and critically. They see and experience. In this way, students develop their critical and thinking skills and become more motivated learners.

*

Name Of Practical



Teacher's Signature

Name Of Practical

Purpose of study Tour :-

The purpose of study tour is multifaceted it aims to compliment academic learning by providing student with practical experiences and exposure to real worked experiment related to their field of study key purpose include :-

1. Experiential Learning :-

Students gain hand-on-learning applying theoretical knowledge in real world settings. This practical exposure enhances understanding and retention of academic concepts.

2. Cultural Exposure :-

Study tour often include visits to diverse cultural and historical sites, fostering a broader understanding of different communities and perspectives.

Name Of Practical

3. Industry Insights :-

Tours to Relevant Industries or businesses often students insight into professional practices, allowing them to connect theoretical knowledge with industrial application in their future careers.

4. Networking Opportunities :-

student can interact with professionals and experts in their field by establishing valuable connections that may benefit their academic and professional pursuits.

5. Motivation :-

Experiencing real-world application of their studies can inspire students, motivating them to excel in their academic pursuits and future careers.

*

Name Of Practical

About Nagalwadi :-

Nagalwadi is a village located near Nagpur in the state of Maharashtra India.

1. Location :-

situated in Nagpur district of Maharashtra Pin code - 440023

2. Geography :-

Typically surrounded by agricultural lands it may have diverse flora and fauna depending on its own exact location

3. Community :-

often inhabited by a mix of various social and cultural groups.

4. Traditions Customs :-

May have unique customs festivals and tradition specific to the local community

Teachers Signature.....

Name Of Practical

5. Agriculture :-

Primarily an agrarian community with farming being a significant occupation.

6. Livelihood :-

Small scale business like - dairy, crafts and other several livelihood.

7. Healthcare :-

Availability of health and health care services and community health motivates is basic.

The Village Code of Nagalundi village is 536127. This village is located in Hingna taluk Nagpur dist in Maharashtra, India. Hingana is nearest town to Nagalundi village for all major activities of economic.

The population of Nagalundi is approximately 2500 out of the total population around 1500 women 700 men Rest one children.

*

Name Of Practical



Name Of Practicant

Report Writing

Venue :- Village study tour (Nagalwadi)

Address :- Nagalwadi wachhamra Road,
Nagpur, Maharashtra - 440023

Date :- 16/12/2023 (Saturday)

Around 50 B.ed second year student and our lecturer arrange a study tour to Nagalwadi. A day schedule is 16/12/2023 in afternoon all of colleagues meet at Nagalwadi village.

He started a survey in the village for the study. The student interacted with the local administrative functionaries in the Nagalwadi Grampanchayat. The village is around 18.7 Km from Nagpur.

The "study" tour was conducted to familiarised the student with the practical aspect of rural society.

Teachers Signature

Name Of Practical

Mrs Rekha dhagnesuxan Lapkale is the sarpanch of Nagelwadi, grampanchayat. We all students discussed about situation of village with sarpanch. Then the students interaction with the people of village at introductory level. Then the students were given the topic of their interaction in the village to conduct the fieldwork and field findings along with the policy suggestion the student studied the issue of public distribution system, poverty alleviation health, education, community, essential sanitation, hygiene, land development, rural electricity, women and child development, family welfare, impact of the liquor on the family system, transportation and communication system of the village.

*

Name Of Practical

Conclusion

The village study enables me in studying the various aspects of the village life. We come to know various things knowing which perhaps when not possible without staying in the village among the general population.

My visit helps me to understand the lives of the village ~~town~~ their need and various dynamics relating to it. The first hand experience is how they sustain their livelihood and which kind of difficulties they face for livelihood and other expenses of household. And we also saw the various development plan seening in the village and impact of it helped me to my understanding of these plans and ground realities associated with them.

The facts ~~like~~ equality between different caste female position in the house unity among villagers etc are among some of the positive aspects of the village related to the providing of livelihood opportunity to the villagers.

*

Teachers Signature

Name Of Practical

Reference

1. www.villagestudytour.com
2. www.heralded.com
3. <https://www.bhaskar.com>
4. <https://www.sspad.edu.in>
5. <https://www.bewaniNagalwadi.nic.in>

*

THANK YOU

*

Pratibha

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

B.Ed. -1st YEAR

(SEMESTER-II)

2023-2024

EPC -1

Personality Development

[GUEST LECTURE]

Submitted By:- PALLAVI YELE

Topic :

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Personality development :-

Introduction :-

personality development refers to the process of enhancing and evolving one's personality through various practices, experiences and education. It involves improving personal traits, behaviours, attitudes and overall character to achieve a more well-rounded and effective self. Here some of the key aspects and steps involved in personality development.

Self awareness

- Introspection :- Regularly reflect on your thoughts, emotions and behaviours to understand your strengths and weaknesses.
- Feedback :- Seek constructive feedback from others to gain different perspectives on your personality and behaviour.

Goal setting :-

- Identify objectives :- Set clear achievable goals for personal growth.

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Develop a step by step plan to reach these goals, including specific actions and timelines.

Skill development :-

- Communication skills :- Improve verbal and non-verbal communication, including listening, speaking and body language.
- Social skills :- Enhance your ability to interact positively and effectively with others.
- Emotional intelligence :- Develop the ability to understand and manage your emotions, and empathize with others.

positive thinking

- Cultive a positive and growth-oriented mindset.
- Use positive affirmations to build confidence and resilience.

Learning and adaptation :-

- Engage in lifelong learning through reading, courses and new experiences.

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- Importance of personality development :-
- Enhanced relationships :- Better interpersonal skills lead to more meaningful and fulfilling personal and professional relationship.
- Career advancement :- Improved communication, confidence and adaptability are key traits that employers value, potentially leading to career growth.
- personal growth :- Continuous self-improvement fosters a sense of accomplishment and self-satisfaction.
- stress management :- Increased emotional intelligence and resilience help in managing stress and overcoming obstacles more effectively.
- Overall well-being :- A well developed personality contributes to overall mental, and social well being.

personality development encompasses the dynamic construction and deconstruction of integrative characteristics that distinguish an individual in terms of interpersonal behavioural traits.

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Topic:

personality development is ever changing and subject to contextual factors and life-altering experiences. personality development is also dimensional in description and subjective in nature. That is personality development can be seen as a continuum varying in degrees of intensity and change. It is conceptualization is rooted in social norms of expected behaviour self expression and personal growth.

personality development refers to the process by which the organized thought and behavior patterns that make up a person's unique personality emerge over time. Many factors influence personality, including genetics and environment, how were parented and variables.

• Basic qualities of personality development :-

- Self awareness.
- Empathy
- Social skills.
- Openness to feedback.
- Collaboration skills.
- Resilience to change
- Emotional intelligence.

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Topic :

- Humility and Humor.
- Optimism and positivity
- Self control.

• There are four types of personality development.

1. passive personality :-

This type of personality development is when someone has low - confidence and doesn't believe in one's abilities.

2. Aggressive personality :-

This type of personality development is when someone has high self - confidence and confidence in one's abilities.

3. Conforming personality :-

This type of personality development is when someone has low - self confidence and is unsure about what one should be doing with one's life.

4. Impulsive personality :-

This type of personality development is when someone has a high level of self - confidence and knows exactly what one wants out of life - no matter what !

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personality is the one that people perceive. The whole journey of life is from being somebody to becoming a nobody, and from being a nobody to being a part of everybody. If someone is stuck with the idea of personality, there is less scope for them to grow. Everything is changing. people change, their ideas are changes. let us acknowledge this basic fact. So, if you have judged, then even your judgement can change.

"When your mind is not complaining and is responsible, courageous and confident; you become inexplicable beautiful."

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Conclusion :-

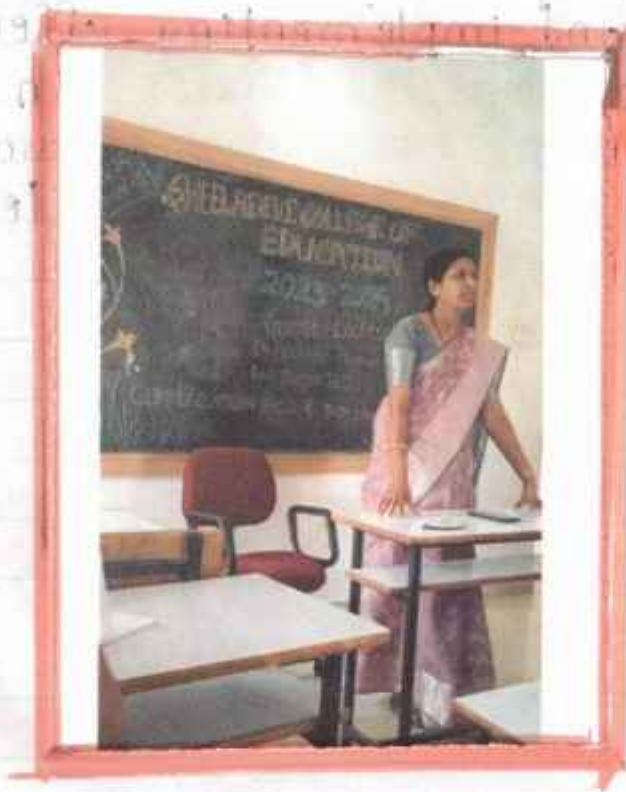
personality development is an ongoing process called that requires self-reflection, dedication and a willingness to evolve.

By understanding the factors influencing personality and implementing effective strategies for growth, individuals can embark on a transformative journey towards realizing their full potential and leading fulfilling lives.

Sign:

Personality development is an ongoing process which requires self-reflection, dedication and a willingness to evolve.

By understanding the factors influencing personality and its development, we can embark on a path towards self-fulfilling.



Topic :

Page :

Date :

Report Writing (Guest Lecture)

Our college has organized a workshop on "Guest-Lecture" on the topic "Personality Development", on dated 30th March 2024. The workshop was attended by 50 students of our class.

The Guest reached the college punctually. Prof. Durga Pali Ma'am was our chief guest on that day. She was welcomed with proper Manner and respect.

Later she introduced herself to us and started our class on the topic "Personality Development". She teaches us the importance of Personality, how to develop our personality, factors affecting our personality, while teaching she interact with every student of the class. She asked us about our queries and problems.

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The students were giving a positive response to her teaching and listen very carefully to the entire lecture till the last.

At last the lecture was ended with a vote of thanks. she was very humbled and thankful to our college for giving her an opportunity to teach us and calling her as a Guest in our college.

Our Principal madam also devoted a vote of thanks to our Chief Guest and ended the work-shop. We were glad to be part of this amazing and valuable workshop held in our college.

Thank You.

Sign:

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

B.Ed. -1st YEAR

(SEMESTER-II)

2023-2024

EPC -1

Communication Skill

[Guest Lecture]

Submitted By :- PALLAVI YELE



Guest lecture On...

Communication Skill

The sheeladevi college of education, wadi was arranged guest lecture for B.Ed 1st year second sem on the topic Communication Skill.

The guest lecture was taken by, Rajeshwari Sangalkar mam on the topic Communication skill. She told us how to do communication with the people. She also told us importance of communication skill.

Introduction :-

Communication is a process by which information is exchanged between individuals. It requires a shared understanding of symbol system such as language and mathematics. The teacher should understand the subject matter before trying to communicate it to the student.

The teacher should understand the nature of their student to make the



Communication it to the student.

The teacher should understand the nature of their student to make the communication successful and productive. One must choose the presentation style, fit to the subject matter and the audience develop.

The ability to communicate effectively is essential whatever sector you work in good communication improves teams, inspire high performance.

Communication skills are the abilities to you use when giving and receiving different kinds of information. Some examples include communicating new ideas, feelings or even an update on your project. Communication skills involve listening, speaking, observing and empathising. It is also helpful to understand the differences in how to communicate through face-to-face interactions, phone conversations and digital communications like email and social media.



The English word 'communication' is derived from the Latin Communis, which means common sense. The word communication means sharing the same ideas. In other words the transmission and interaction of facts, ideas, opinions, feelings or attitudes.

Communication is a two-way process which involves transferring of information for one person to another.

There are two types of communication.

- Verbal communication :- It occurs through verbal or written communication that conveys or conveys a message to others is called oral communication.

- Non-verbal communication :- It occurs with sign, symbols, colors, touches, body or facial features. Insignificant communication is using body language, and facial expressions to convey information to others.



• Examples of communication skills :-

There are different types of communication skills you can learn and practice to help you become an effective communicator. Many of these skills work together making it important to practice communication skills in different context whenever possible.

1. Active listening :-

Active listening means paying close attention to the person who is speaking to you. People who are active listeners are well regarded by their co-workers because of the attention and respect they offer others. While it seems simple, this is a skill that can be hard to develop and improve. You can be an active listener by focusing on the speaker, avoiding distractions like cell phones, laptops or other projects and by preparing questions, comments or ideas to thoughtfully respond.



2. Friendliness :-

In friendship, characteristics such as honesty and kindness often foster trust and understanding. The same characteristics are important in workplace relationships. When you are working with others approach your interactions with a positive attitude, keep an open mind and asks questions to help you understand where they are coming from.

3. Respect :-

A key aspect of respect is knowing when to initiate communication and respond. In a team or group setting, allowing others to speak without interruption is seen as necessary communication skills. Respectfully communicating also means using your time with someone else wisely staying on topic, asking clear questions and responding fully to any questions you have been asked.

• How to improve your Communication Skills ?

With experience and practice, you can learn and improve Communication skills. Start by identifying your strengths and then practice and develop those areas.

- practice improving communication habits.
- Attend communication skills workshop or classes.
- Seek opportunities to communicate.
- Be clear and concise.
- practice empathy.
- Assert yourself.
- Be calm and consistent.
- Use and read body language.

Some of the barriers in Communication Skills :-

- Lack of proper style, feedback.
- Content is not related to requirements.
- Failure to maintain dual communication.
- Lack of leadership.
- Lack of enthusiasm.



Today Communication skills are very important both in the business world and in private life. Successful communication helps us better understand people and situations. It helps us to overcome diversities, build trust and respect; and create conditions for sharing creative ideas and solving problems.

Effective communication can help to resolve or avoid problems and or conflicts. It helps to connect with others and share ideas. Effective communication skills clarifies information, reducing wasted time. Helps builds relationships, teamwork and trust.

Thus communication brings together people of the world and develops tolerance towards each other.



• Importance of communication skills :-

Communication skills are fundamental to both personal and professional success. Their importance can be summarized in several key areas :-

1. Building relationship.
2. Career advancement.
3. problem solving.
4. Decision making.
5. Enhancing clarity and understanding.
6. Boosting confidence.
7. promoting inclusivity.
8. Conflict resolution.

In summary, communication skills are integral to success in nearly every aspect of life, enabling effective interaction, collaboration and understanding among individuals and groups.

Importance of communication skills
 Communication skills are fundamental
 to both personal and professional success.
 Their importance can be summarized in
 several key areas:



In summary, communication skills
 are essential to success in nearly every
 aspect of life. Investing in these skills
 through education and understanding of
 various individuals and groups.



Report Writing

Last week our college had organized a workshop on topic "Communication skill", on date 16/03/2024. The workshop was attended by all students of our class.

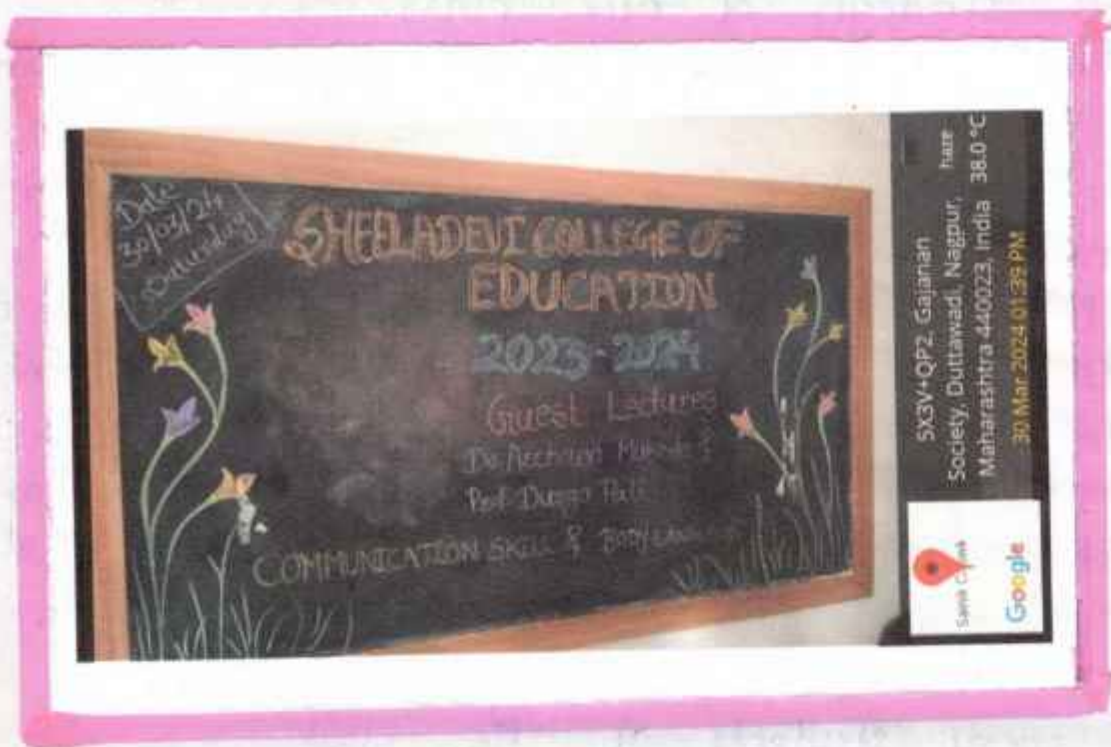
The chief guest reached on time 12:00 pm Prof. Rajeshwari Sangalkar Madam was our chief guest, she was welcomed with proper manner and respect.

Later she introduced herself to us and started the lecture on the topic "Communication skill".

She teaches us the importance of communication skill, types of communication, uses, Benefits, How good communication skill helps us and so on. While teaching she interact with every students of the class.

At the last lecture was ended with vote of thanks. our principal Madam also devoted vote of thank to our chief guest. and ended the workshop.

Thank You!!



Date
30/03/24
Saturday

SHEELADEVI COLLEGE OF EDUCATION

2023-2024

Guest Lectures

Dr. Neelam Mishra

Prof. Deepa Thakur

COMMUNICATION SKILL & BODY LANGUAGE

5X3V+QP2, Gajanan
Society, Duttawadi, Nagpur,
Maharashtra 440023, India 38.0 °C

30 Mar 2024 01:39 PM



SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

B.Ed. -1st YEAR

(SEMESTER-II)

2023-2024

EPC -1

Body Language

[Guest Lecture]

Submitted By:- PALLAVI YELE

SHEBLADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

B.ED - 1st YEAR





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Guest lecture on

Importance of Body Language.

Sheela devi college of education arranged guest lecture on the topic importance of body language. The guest lecture was taken by prof. Durga pali. She told us that why the body language is important specially for teachers. It is the language without spoken words. It is called as non-verbal communication. It is all about gesture movements and expressions made by people to deliver a specific message to other people. When we connect with a person, body language is very important thing, it shows our personality. By body language people recognize each other. there is reflect more impression by body language. In first meeting people see each other. They notice their behaviour, style of person, way of talking it all are the part of body language.



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Introduction :-

Body language is a type of a non-verbal communication in which physical behaviour as opposed to words are used to express or convey the expression information such behaviour includes facial expression, body posture, gesture, eye movement, touch and the use of space.

Body language is an important part of communication. It is one of the example of non-verbal communication, refers to any form of communication other than writing or speaking. Sometimes the information you convey with so, your body has to speak for you often it says, more than words you speak.

Body language can not only influence our physical body and posture but it can also influence how we are feeling having good posture has positive effects on depression and helps us maintain higher level of self esteem and positively when we are faced with stress.

• Definition :-

Body language is a type of non-verbal communication that receive on body movements such as gesture, posture to convey message.



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The term body language refers to the gesture a persons face or body giads as an aid to communicate these clues can be intentional or unintentional and positive or negative.

• Types of Body Language :-

1. posture :- The term posture refers to how we use hold or bodies as well as over as physical form of an individual. posture can be used to determine a participants degree of attention or involvement and emotional. Two forms of posture has been identified 'open' and 'closed' which may reflect an individual's degree of confidence status or receptivity to another person. An open posture can be used to communicate openness or interest in someone and readines to listen whearas the closed, posture might imply discomfort or disintested.

2. Gesture :- Gesture is an expressive movement of a part body especially head or hands. It has vital effect(oral communication) indicate numerical amount are all way common and easy to understand gesture.



Diamond





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Gestures

Meaning

Clap

Accept / encourage

Raise hand

Seek attention

Rub face

Angry

Rub stomach

Hungry

Shake hands.

Greetings / friendship.

3. Facial expression :- Our facial expression may reveal our true feeling about a particular situation. Facial expressions are among the most universal forms of body language. The expressions used to convey fear, anger, sadness and happiness are similar throughout the world. Emotions that can be expressed through facial expression which includes happiness, sadness, anger, surprise, fear, confusion, excitement, desire, contentment etc.

4. Eye contact :- The eyes are frequently referred to as the 'windows to the soul'. Your eyes when having conversation, it indicates that they are interested and paying attention. People often blink more rapidly when they are feeling distressed or uncomfortable.

The use of eye contact is seeking information, displaying attention and interest, inviting and controlling.



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attention seeking to influence dominate or others etc.

5. Tactile communication :- Communication through touch is called as tactile communication, touch can indicate dependence, affiliation, aggregation etc.

6. personal space :- This is the physical space one place between himself and others. This invisible boundary became appast only when someone bumps or this to control your space.

There are four levels of social distance that occur in different situation.

- Intimate distance :- 6 to 18 inches.
- personal distance :- 1.5 to 4 feet.
- social distance :- 4 to 12 feet.
- public distance :- 12 to 25 feet.

7. The arms and legs :- The arms and legs can also be useful, in conveying non-verbal information gossing the arms, can indicate defensiveness gossing legs, away from another person may indicate dislike or discomfort.



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8. The mouth :- Mouth expression and movement can also be essential in reading body for exchewing on the bottom lip may indicate that the person is experiencing feeling of worry, fear or insecurity. A smile may be genuine or it may be used to express false happiness etc.

9. Appearance :- By appearance, we mean clothing hairstyle, ornaments such as jewellery and cosmetics appearances of a person speaks him/her a lot.

10. Voice tone :- Voice is a most effective components of a body language. It is a most flexible, communication tool we own. One should learn to use it to influence the audience in positive way with voice, we not only transmit information but also the mood atmosphere and emotions when sentence, said in strong tone of enthusiasm. sentence said in hesitant tone of voice might convey disapproval and lack of interest.



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Examples of body language :-

positive body language :- positive body language is when our movement and gestures and engaged interest open etc.

1. Head tilted to one side
2. Rubbing hands together briskly
3. palm open and facing upward.
4. Standing straight with shoulders back.
5. stroking your chin
6. leaning in
7. Direct eye contact.
8. Head Nodding.

Negative body language :- Negative body language also known as defensive body language. This is when your movements and gesture show you are inscale closed - off - disinterested.

1. Arms Crossed over the chest.
2. Nail biting
3. Hand placed on clock.
4. Lapping or drumming figure.

could make strong impacts on your behaviours which could helps you achieve better results.



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The ability to understand the body language helps in our connection to others and enables us to make the communication more effective.

• Things to improve the body language :-

1. practise self awareness :-

One of the 1st steps, you should take to improve your body language is to gain a deeper sense of self-awareness. When you are talking to people or discussing certain topics, take note of your behaviours and the nonverbal messages you could be sending. By practising self-awareness, you will know which behaviours to watch for and which you need to focus on practicing the most.

2. Relax your shoulders :-

Another steps you can take to improve your body language is to relax your shoulders, allowing them to drop to a comfortable heights. Shoulders that are too high can make you take nervous, while slumped shoulders can give the impression that you are sad.



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3. Straighten your back.

To assure the person you are communicating with that you are interested in what they are saying and listening, it is important to sit tall and maintain a straight spine. A good way to ensure your neck is in the proper position is to remind yourself to keep your chin up.

4. Use proper posture :-

It is important to maintain proper posture to convey the appearance of confidence. Anytime you are engaged in conversation with another person, make sure you are sitting or standing up straight and using proper posture.

5. Lean in slightly

One way you can show the other party that you are interested in the conversation is to lean in slightly when they are talking. However, it is important to be cognizant of how far you are leaning in, since leaning in too far can make other party uncomfortable or give the



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or give the wrong impression, likewise, leaning too far away can make you appear distant.

6. Uncross your arms

In order to signal to the person you are speaking with that you are confident and at ease, it's important to uncross your arms. Depending on whether you are sitting or standing, you may want to keep them folded in your lap or down at your sides. You could also hold your hands clasped, which can convey confidence.

7. Smile :-

Smile when you are first introduced to someone and throughout the conversation, when appropriate. Be aware of your facial expressions throughout the course of the conversation, as a neutral face can often appear as a frown. Simply, turning up the corners of your mouth slightly can give you a calm and pleasant expression.



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8. Use matching handshake.

If you are meeting someone new, always use a firm handshake or match the handshake of the person you are meeting. This helps you present yourself in a professional manner and puts the person you are meeting more at ease.

9. Maintain a proper distance :

Take note of the body language of the person you are talking to. For example, they may be leaning in to hear or moving away from you. Use these cues to get a better understanding of what an appropriate distance is.



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Report writing :-

Introduction :-

Body language also known as non-verbal communication, plays a crucial role in human interaction. It encompasses facial expressions, gestures, postures and other physical cues that convey messages without the use of words. Understanding body language is essential for effective communication and interpersonal relationships.

• Body language in Communication :-


1. Facial expressions :-

- The face is one of the most expressive parts of the body, with numerous muscles capable of conveying a wide range of emotions.
- Common facial expressions include happiness, sadness, anger, fear, surprise and disgust.



Diamond





2. Gestures :-

- Gestures are hand movements, nods, or other body movements used to emphasize or clarify speech.
- Different cultures may interpret gestures differently. So, it is essential to consider cultural context when interpreting them.

3. Postures :-

- Postures refers to the way a person holds their body while standing, sitting or moving.
- Open and relaxed posture, such as standing with shoulders back and arms uncrossed, often indicates confidence and openness.
- Closed or slouched posture, such as crossing arms or can signal defensiveness or discomfort.





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• open the shoulders posture, and as
standing with shoulders back and arms
extended, often indicates confidence
and openness

• closed or slumped posture
such as crossed arms or
for signal discomfort or
disrespect

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4. Eye contact :-

Eye contact is a powerful form of non-verbal communication that can come interest, attention and trust.

Conclusion :-

Body language is a universal forum of communication that complements verbal communication and provide valuable insights into people's thoughts, feelings and intentions. By understanding and interpreting body language cues, individuals can exchange their communication skills, build stronger relationships and navigate social interactions more effectively.



Diamond



Eye Contact :

Eye contact is a powerful form of non-verbal communication that can convey interest, attention and trust.



Formal verbal and non-verbal communication is essential for effective teaching and learning. Eye contact is a key component of this communication, as it helps to establish a connection with the students and to monitor their understanding of the material.

Conclusion :-
Body language is a form of communication that can be used to convey a wide range of messages. By paying attention to body language, we can better understand the intentions of others and build more effective relationships and connections.





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Report Writing

Last week our college has organized a workshop on 'Guest Lecture' on the topic "Body Language". on dated 30 March 2024. The workshop was attended by all students.

The Guest reached the college on time. Dr. Archana Makode was our chief guest on that day. she was welcomed with proper respect.

Later she introduced herself to us and started our class on the given topic 'Body Language'.

She teaches us the importance of Body Language. How Body language helps us to build our personality. Types and Benefits of Body Language. Its application and significance. while teaching she interact with every students.

At last the lecture ended with vote of thanks. Our Principal Madam also devoted a vote of thanks to our Chief guest and ended the workshop.

Thank You!!



Diamond



SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

2023-2024

B.Ed.- 1st Year

SEMESTER- I

EPC – 3

DRAMA AND ART IN EDUCATION

(OFF STAGE PROGRAM)

Submitted By:- PALLAVI YELE



5X3V+QP2, Gajanan
Society, Duttawadi, Nagpur,
Maharashtra 440023, India
24 Nov 2023 12:09 pm



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- ★ Creation of Rangoli
- ★ Colours & Designs
- ★ A few things used in Rangoli
- ★ Religion
- ★ Rangoli in Different states
- ★ Unity in Diversity in India is strength
- ★ significance of Rangoli
- ★ Report Writing

Introduction

Rangoli is an art form that originates that from the Indian subcontinents, in which patterns are created on the floor or a top tabletop using materials such as powdered lime stone, red ochre, dry rice flour, coloured sand, quartz powder, flower petals and coloured rocks.

It is an everyday practised in many hindu houses and households, however making it is mostly reserved for festivals and other important celebrations as it is time-consuming.

Rangolis are usually made during Diwali or Tibar, Onam, Pongal and other hindu celebrations and festivals in the Indian subcontinent and are the most often made during Diwali.

Designs are passed from one generation to the next, keeping both the art form and the tradition alive.

Rangoli hold a significant place in the lives of Hindu. The purpose of Rangoli is more than decorations.

The purpose of Rangoli is more than decoration - its way to connect with the divine. Rangoli design can be simple geometric, flower and petal shapes according to given celebrations. They are often beautiful and symbolic and can be used to celebrate any occasion.

They can also be made with intricate design crafted by many people. The geometric designs may also be religious symbols that are powerful.

Rangoli creation is also found in Hindu Mythology. There are also references to Rangoli in legends such as Ramayana.

There is a modern and traditional Rangoli design.

The designs are also usually inspired by the nature, but they can also be in the form of abstract art or decorative wall hangings.

They are often beautiful and unique and they have the ability to inspire feelings of joy and peace. We often make rangoli designs for Diwali, Onam, Pongal etc.



The pattern is more than just a decorative element. It is a form of communication, a way to convey ideas, feelings, and information. It is a visual language that transcends words and is understood by people from different cultures and backgrounds.

20-03-20

They can also be made with intricate design crafted by many people. The geometric designs may also be religious symbols that are powerful.

is also found in many places. There are many different types of geometric patterns. Some are used in architecture, some in art, and some in everyday life. They are also used in many different cultures and religions. They are a form of communication that is both beautiful and meaningful.



They are often used in many different ways. They are used in art, in architecture, in fashion, and in many other areas. They are a form of communication that is both beautiful and meaningful. They are a way to express ideas, feelings, and information in a visual language that is understood by people from different cultures and backgrounds.

Rangoli have different names based on the state and culture. Rangoli hold a significant role in the everyday life of a Hindu household especially historically when the flooring of houses were untitled.

They are usually made outside the threshold of the main entrance in the early mornings after cleaning the area.

Traditionally, the postures needed to make a rangoli are a kind of exercises for women to strengthen their spines.

The rangoli represents the happiness, positivity and liveliness of a household, and is intended to welcome Lakshmi, the goddess of wealth and good luck.

It is believed that a Hindu household without a clean entrance and rangoli is an abode of daridra (bad luck).

The purpose of Rangoli is beyond decoration. Traditionally, either powdered calcite and limestone or cereals powdered are used for the basic design.

Traditionally either powdered calcite and limestone or cereal powders are used for the basic design. The limestone is capable of preventing insects from entering the household, and the cereal powders attract insects and keep them from entering the household.

Using cereal house powdered for Rangoli is also believed as panch Mahaboota seva because insects and other dust microbes are fed.

Design depictions may vary as they reflect traditions, folklore and practices that are unique to each area.

Rangoli are traditionally made by girls and women, although men and boys create them as well.

In Hindu households, basic rangoli is an everyday practice. The usage of colours and vibrant designs are showcased during occasions such as festivals, auspicious observances, marriage celebrations and other similar milestone and gatherings.

Rangoli designs can be simple geometric shapes, depictions of deities or flower and petal shapes appropriate to the given celebrations. They can also be made with elaborate designs crafted by numerous people.

The geometrical shape designs are may also represent powerful religious symbols, place in and around household yagna shrines. Historically, basic designs were drawn around the cooking areas for the purpose of discouraging insects and pathogens.

Synthetic colours are a modern variation. Other material include red bricks powder and even flowers and petals, as in the case of flower rangoli.

Overtime, imagination and innovation ideas in rangoli art have also been incorporated.

Rangoli have been commercially developed in places such as five star hotels. In traditional charm, artistry and importance continue today.

Origines of Rangoli

Origines of Rangoli Lopmudra was the wife a sage called Augustya Rishi, she also wrote 2 portions of Rigveda (famous holy books).

She and her husband lived in a remote placed, away from others. People would describe them as hermits. Lopmudra wanted help her husband in worshipped the gods, so she started to make Rangoli, a Lopmudra decoration for the Yagyakunda. Yagyakunda is what we call a place of worship.

Lopmudra asked The Panchatatva (The five elements - sky, wind, water, earth, fire) to give her colours to please her husband.

She was able to collect blue from sky, green from water, black from soil, red from fire and white from wind.

She then added these colours to the rangoli (made from ground rice, lentils, flowers and spices) which is why they look so beautiful today.

Etymology :-

from Sankrit word "रङ्ग" which means colour.

Rangoli is derived from Sankrit word 'Rangavalli'

The various names for this artform and similar practices includes:

Name	State
Rangoli रंगोली	Maharashtra
Muggu मुग्गु	Telangana & A.P.
Rangole रंगोली	Karnataka
Kolam कोलम	Tamil Nadu
Mandana मंडना	Rajasthan
Alpana/Alpona अल्पोना	West Bengal
Haripan हरिपना	Bihar
Muryja/Jhota/Chita	Odisha
Chowkpurana चौकपुराणा	Chhattisgarh
Chowkpujan चौकपूजन	Uttar Pradesh
Chowk Anarana	Punjab

Creation of Rangoli

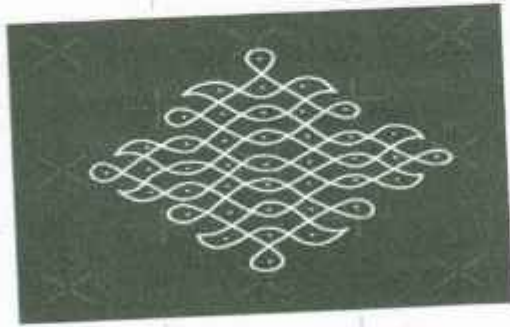
There are two primary ways to make a rangoli, dry and wet, referring to the materials used to create the outline, and (if desired) fill that outline with colour.

Using a white material like chalk, sand, paint or flour, the artist makes marks a centre point on the ground and cardinal points around it, usually in a square, hexagon or circle depending on religion and personal preference.

Ramifying that initially simple pattern creates what is often an intricate and beautiful design. Motifs from nature (leaves, petals, feathers) and geometric patterns are common.

Less common but by no means rare are representational forms (like a peacock) icon or landscape) Readymade Rangoli patterns often as stencils or stickers are becoming common, making it easier to create detailed or practiced designs.

Creation of Rangoli



There are
to make a rangoli
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create the outline
fill that outline
with a white
sand, paint or flour. The artist
marks a centre point on
the ground and cardinal points
usually in a square,
hexagon or circle depending on
the pattern.

Initially simple
what is often
beautiful designs
are (leaves petals
geometric patterns
by no means
traditional forms
for a landscape)
Rangoli patterns often
are stickers or
common, making it easier
to create detailed or
elaborate designs.



by no means
traditional forms
for a landscape)
Rangoli patterns often
are stickers or
common, making it easier
to create detailed or
elaborate designs.

Once the outline is complete, the artist may choose to illuminate it with colour, again using either wet or dry ingredients like paints, coloured rice-water, gypsum powdered, coloured sand by or dry pigments.

The artist might also choose unprocessed materials like seeds, grains, spices, leaves or flowers petals to achieve likewise hues. Modern material like crayons, dyes or dyed fabrics, acrylic paints and artificial colouring agents are also becoming common, allowing for brilliant and vibrant colour choices.

A newer but less artificial method involves using cement coloured with marble powder.

This rather precise method requires training but beautiful portraits can be drawn in this medium.

Colours & Designs

Rangoli's most important element being colourful.

These are auspicious symbols that have a central role in the design.

The designs are passed down from one generation to next as they are made and is required to make these symbols.

Traditionally, each new generation learns the art and thus a family keeps the traditional intact.

Some major symbols used in rangoli are the lotus flower and its leaves, mango, the vase, fish, different kinds of birds like parrots, swans and peacocks, human figures and foliage.

Oftentime rangoli is made on special occasions like Diwali.

Some special patterns for Diwali rangoli are the diya also deep Ganesha, Lakshmi flowers or birds of India.

The patterns includes the face of Hindu deities, geometrical shapes peacock motifs and round.

Many of These motifs are traditional and are handed down by the previous generation. This makes rangoli a representation of India's rich heritage and the fact that it is a land of festivals and colour. People celebrate rangoli with diwali pattern.

Rangoli Colours

- Blue represents the sky and green represents the sea. Both colours bring calm and help with using our imagination. These are good colours for story-telling.
- Black brings strength and stability. Red, the colour of fire or danger, represents the code of conduct the artist must follow.
- White represents peace and positivity and embodies all colours.

All of these colours in Rangoli bring in elements that we wish for in the new year when celebrating Diwali.

Rangoli Colours and powders.



A few things used in Rangoli

- Colourful flower petals
- Rangoli Powder
- Chalk powder
- Coloured Rice (Raw)
- Raw Beans
- Raw Lentils
- Raw colourful pasta
- Rice Powder
- Salt or Epsom salt
- Rangoli Tools (optional)

Feelboba
1/02/2024

Things used in preparation of Rangoli



How to make Rangoli

1) Choose the design you want to make - either geometrical, a floral design, or get creative and follow wherever your inspiration leads you!

2) Decide where to draw your Rangoli. You can draw on the floor or outside of your house.

3) Give dimensions to your outline with white textured material like rice flour, Rangoli powder or chalked powder.

Rice flour / Rangoli powder is usually applied free hand by letting it run from the gap formed by pinching the thumb and forefinger.

4) Choose the materials you will use to fill in the design.

Use natural materials easily found in your house or garden.

You can use flower petals, leaves, coloured rice, chalk or Rangoli powdered and beans etc.

Religion

In Sri Vaishnavism, it is said that Andal, one among the twelve Alwars, worshipped the deity Krishna, and was married to him in the month of Margali. During these months, several unmarried women get up before dawn, and draw a rangoli to welcome the deity.

Mentions of the Rangoli creation are also found in Hindu literature.

There are also references of Rangoli in legends such as Ramayana - at Sita's wedding pavillion where there is a discussion about Rangoli.

The cultural development of rangoli in the south originated in the era of the Cholas rulers.

Religion

In Sri Vaishnavism, it is said that Andal, one among the devotees, worshipped the



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Rangoli

similar where there is a distinction
on about Rangoli. Development of
be cultural. Development of
Rangoli in the south originated
The end of the 19th century.

Kolam Rangoli



Rangoli in Different states

Rangoli art is known by different names in different parts of the country. In the northern part of India, Rangoli designs are made with traditional wet colours.

In southern part of India, Rangoli patterns drawn with the help of powder colours are more common.

Kolam in Tamilnadu

Kolam was traditionally drawn using rice flour or chalk powder. With modern times, use of synthetic coloured powdered is also used.

Native to Tamilnadu, Karnataka, Telangana, Andhra Pradesh, Kerala and some part of Goa.

Traditionally, the main purpose of Kolam was not decoration. Earlier, Kolams were drawn in coarse rice flour so that the ants would not have to walk too far for a meal.

Along with ants, Kolam encouraged harmonious existence by setting an invitation to birds and other small creature for a meal.

Mandana in Rajasthan

The named after. The popular art of Mandana paintings, this kind of Rangoli is native to The areas of Rajasthan. Mandana is drawn to protect health, welcome gods and mark the celebrations of festivals.

Mandana is basically drawn using chalk powdered. Women draw this beautiful piece of art form with the help of a piece of cotton.

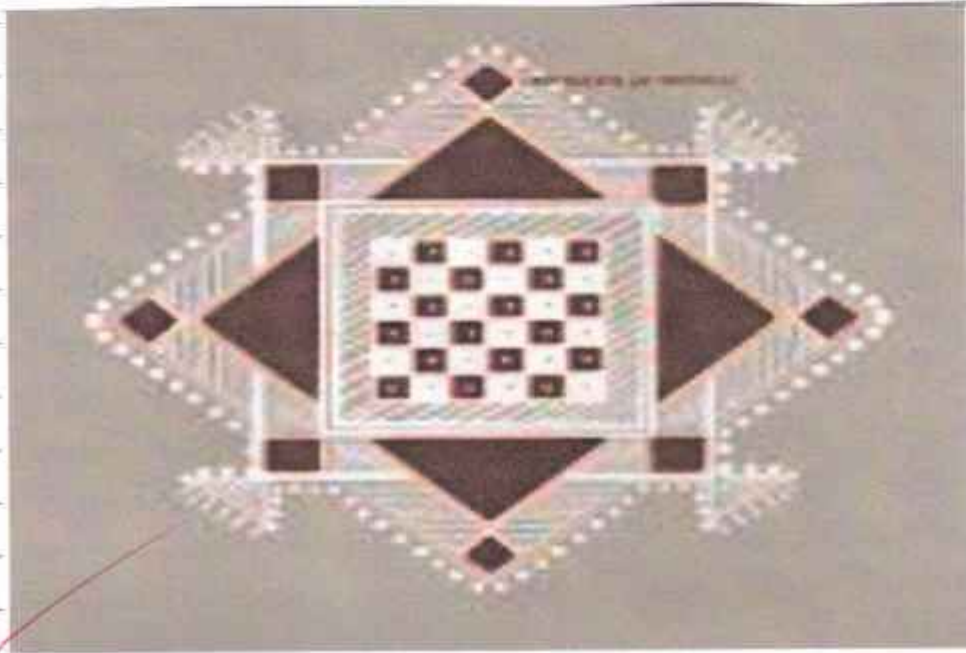
Chowkpurana in Chhattisgarh

Popular for its kaleidoscopic designs, Chowkpurana is drawn using dried rice flour or other forms of white dust powder. Although there are numerous traditional Chook pattern, designs have evolved over the years depending on the creativity of younger generations. Considered auspicious, chook also signifies showering of good luck and prosperity in the family.

Alpana in West Bengal

The word Alpana is derived from the Sanskrit word 'Alimpana'. Alimpana means 'to plaster' or 'to coat with'

Mandana Rangoli



Chowk purana Rangoli



Traditionally, women of the house made alpana before the sunset. Strictly drawn in white colour, to draw an alpana that stays for longer duration, fabric colours along with a portion of glue can be used.

Jhoti in Odisha

This traditional art is known as Jhoti or chita in Odisha. Unlike in other areas, jhoti can also be drawn on walls of as well as and is traditional a line art drawing.

The white colour as obtained from a semi-liquid paste of rice flour to draw this traditional line art. Apart from several designs and patterns used in jhoti, small foot marks of goddess Lakshmi, are a must.

Aripana in Bihar

Aripana patterns are integral to almost every celebration in a Bihar household. Drawn in the courtyard or the entrance, any ritual or celebration is considered incomplete without aripana.



Jhoti Rangoli



Alpana Rangoli



Alpana Rangoli

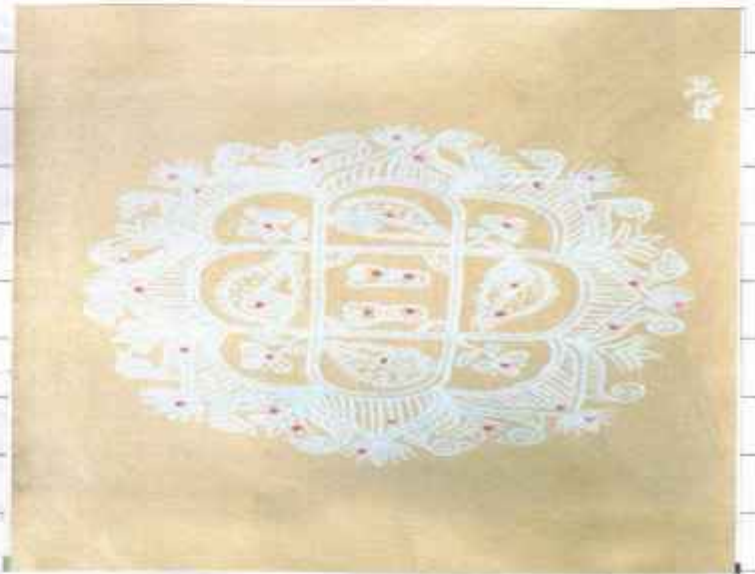
Traditionally, aripans were drawn to make the cultivated land fertile and fruitful by magical performances. Made with fingers, the delicate designs are made with the help of rice paste or pitha.

Muggu in Andhra Pradesh

Known as Muggupindi, these rangoli patterns are drawn with the mixture of calcium or chalk powdered. During festivals, the mixture is made of rice flour as an offering to ants, insects and sparrows. This gorgeous traditional art is transferred over the generations.

Keelbrack

Aripan Rangoli



Muggu Rangoli

Significance of Rangoli

The creation of Rangoli patterns in ritualistic and domestic settings is layered with meanings rooted deeply in culture. Its significance is much wider than its aesthetic and decorative purpose.

Besides being a symbol of auspiciousness, it is often described as magic diagrams for rituals to avoid ward off evil, invoke the deity, create a sacred space within the confines of home and many more. These are to be drawn every morning or in the evening and at ceremonies.

Conclusion

The art of Rangoli is a storehouse of symbols. Beginning with the auspicious dot, the symbols go to expand to form a line, and the basic geometrical shapes like the circle, triangle, square and so on, each having its own significance. The symbolic value represents the basic energies of the universe.

Report Writing

Sheeladevi College of Education (B.Ed) organised under The Enhancing capacity professional Capacity es -3 offstage program were solo included essay writing, Mehandi designing and Rangoli Making events.

The offstage program was held on 24th November 2023. I had participated in the activity Art and drama in which I had made the Rangoli.

Rangoli is an art form that originates from the Indian subcontinents in which various types of patterns are created on the floor or tabletop using various materials. Rangoli are usually made during Diwali Tyohar, Onam, Pongal, and other festivals in Indian culture, but mostly or oftenly made during Diwali.



I had participated in the activity of Art and Drama in which I had made a Rangoli. and my Rangoli topic was "Unity in Diversity".

Unity in Diversity in India is Strength

As we know, India is a secular country. We in India, are diverse in language, religion, culture etc. Despite all these differences, there exists a remarkable sense of unity among us, which is why India is presented before the world as a nation that exists and exhibits unity in diversity.

In India, there are nearly 1.38 billion people, and all of them share different thoughts and ideologies. The freedom struggle for Indian independence is enough to highlight the unity in diversity of our nation. People belonging to different religions and cultural beliefs unitedly fought in the movements for the liberation of our nation.

India is one of the world's largest countries and has people believing in various religions, and each of these religions has got its religious festivals. The people of India speak numerous languages like Hindi, English, Marathi, Bengali, Punjabi, Bhojpuri, Kannada, Tamil, Telugu, Odia and so on.

In spite of all these diversities, everyone lives in India with a strong love for it. It is this love that brings people together.

It is never an easy thing to bring unity among these people. Nationalism and Patriotism play vital importance in uniting the people of India.

Unity in diversity increases the harmony and peace of a nation, and it shows the strength of a nation.

The phrase "Unity in Diversity" implies unity among dissimilar people. It is an ancient phrase that was first used by some societies in North America and China, sometimes around 500 B.C.

The most obvious example providing credence to the phrase is that of a democratic nation.

A democratic nation has people having different religions, cultures, beliefs, sects, languages and other demarcation but they all live together and harmony following a uniform law.

India is a nation is best example of "Unity in Diversity" within different people of religion, sect and languages.

Rangoli hold a significant role in the lives of Indian peoples. The purpose of Rangoli is much more than the decoration. Its a way to connect with devibe.

In this Rangoli event, I had made Rangoli on Unity in Diversity in India. I want to describe an importance of unity in a big country like India, which is much necessary to maintain it & p also maintain a piece in India. It signifies the major role of unity with diverse culture in India.

As we know that, India is a secular country, which are diverse in culture, having different languages and religions.

In spite of all these activities and different diversity, everyone lives in India with a strong love between each other and having love among them.

In this activities, other students also participated in events like Rangoli, Drawing, essay writing, Mehandi competition etc. The program was held nicely.

At last moment of the event, Dr. Leena Maam was given the motivation and knowledgable speech to all the students. She also talks about our involvement in such activities and also appreciate us. Sujata Maam and Sulekha Maam also present there to encourage us.

I am grateful to the college for holding such activities. I want to thank and express my gratitude to everyone who has been a part of this journey.

Everydrop in the ocean counts, and I will never forget this day, which makes the memorable part of my life.


Thank you!

Sulekha
11/02/2024
Teacher's Signature

STIMULUS

LESSON

PLAN




Name :- PRERNA SANJAY MESHAM

Subject :- Stimulus lesson plan

std :- B.Ed - 1st yr

SEMESTER - II

College :- Sheeladarsi college of
Education.



PAGE NO.:

Method - 1

Subject :- Maths

Topic :- Quadrilateral

Class :- 8th

Specific objectives :-

- 1) Knowledge :- The students will be able to recall the properties of parallel lines.
- 2) Understanding :- The students will be able to illustrate the different properties of quadrilateral.
- 3) Application :- The students will be able to solve the questions related to quadrilateral.
- 4) Skill :- The students will be able to analyse the properties of quadrilateral Triangle.

INTRODUCTION SKILL

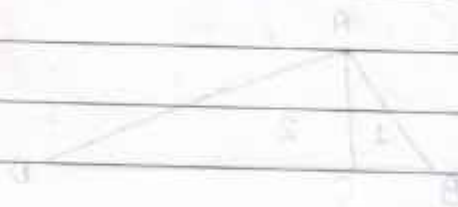
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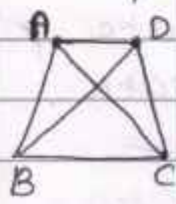
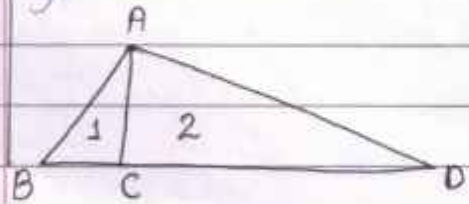
Sr. No	Teacher Activity	Student Activity	Sub skills
	Note :- Teacher ask questions related to topic	Note :- student answer the questions	
1)	How we distinguish the objects ?	Ans \Rightarrow We distinguish the object by shape and size.	Motivation
2)	What is the shape of box ?	Ans \Rightarrow shape of box is square.	Revision of previous knowledge.
3)	How many sides are there in square and rectangle ?	Ans \Rightarrow There are four side in square and rectangle.	Link between previous knowledge and New
4)	What is the difference between square and rectangles ?	Ans \Rightarrow All sides of square are same, where as in rectangle two opposite sides are same.	-

5) What is quadrilateral? \Rightarrow Students are unable to answer the question.

Statement of Aim :- Today we are going to learn about 'quadrilateral'.



EXPLANATION SKILL

Sr. NO	Teacher Activity	Student Activity	Subskills
	<p>Note :- Teacher explain the topic student.</p>	<p>Note :- Student listen carefully.</p>	
1)	<p>A quadrilateral is simple closed fig formed by four line segment.</p> 	<p>⇒ Student listen carefully.</p>	<p>Initial Statement</p>
2)	<p>A quadrilateral is a four sided polygon. Sum of the interior angle of a quadrilateral is $[360]$</p> $L^1 + L^2 + L^3 + L^4 = [360]$	<p>⇒ students understand what teacher is explaining to them, nicely.</p>	<p>explanatory conjunction</p>
3)	<p>There are Two triangles in quadrilateral</p> 	<p>⇒ Student look at the fig drawn on the blackboard.</p>	<p>use of visual conjunction</p>

4) There are 6

Types of
quadrilateral

- 1) parallelogram
- 2) Rectangle
- 3) Rhombus
- 4) Square
- 5) Kite
- 6) Trapezoid

⇒ Students

listen carefully

Parallelogram

Rectangle

Rhombus

Square

Trapezoid

Kite

⇒ Teacher explain about quadrilateral
to the students.

Questioning Skill

Sr. No	Teacher's Activity	Student Activity	Subskills
Note :-	Teacher ask questions to students related to the topic.	Note :- students answer the question properly.	
1)	What is the sum of interior angle of quadrilateral?	Ans \Rightarrow The sum of interior angle of quadrilateral is 360.	Low level questions
2)	How many No. of triangles in quadrilateral?	Ans \Rightarrow Student answered that there are two triangles.	Medium level questions
3)	How many angles are there in quadrilateral?	Ans \Rightarrow There are four angle in quadrilateral.	Medium level question
4)	What do you mean by quadrilateral Define it?	Ans \Rightarrow A simple closed fig. formed by four line segment is	High level question

		called quadrilat -ral.	
5)	What do we learn about Today?	Ans \rightarrow Student answer that we learn about quadrilateral.	final statement.

HOMEWORK :-

- 1) What is the sum of interior angle of quadrilateral?
- 2) How Many No. of triangles in quadrilateral?
- 3) How Many angles are there in quadrilateral?
- 4) What do you Mean by quadrilateral Define it?

Method - 2.

subject :- physics

Topic :- Reflection of light

class :- 8th

specific objectives :-

- 1) Knowledge :- The students will be able to recall the properties of Reflection of light.
- 2) Understanding :- The students will be able to understand the phenomena of light reflection.
- 3) Application :- The students will be able to use the specific knowledge about reflection of light and source of light.
- 4) Skill :- The students are able to analyse the properties of light. What does reflection of light exactly mean.

INTRODUCTION SKILL

PAGE NO.:



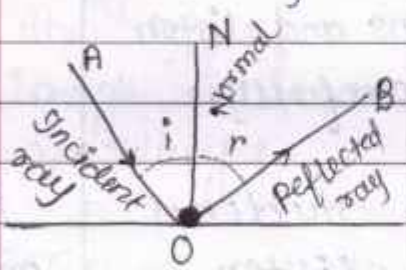
Sr. NO	Teacher Activity	Student Activity	Subskill
	Note :- Teacher ask questions to the Students.	Note :- Students answer properly.	
1)	How can we see the image?	Ans \Rightarrow We are able to see the object because of light falls on them.	Motivation
2)	What is mean by image?	Ans \Rightarrow An image is a visual representation of some thing.	
3)	When light is used?	Ans \Rightarrow To see the object we use the light in the darkness.	Revision of previous knowledge.
4)	can you give an eg. of source of light.	Ans \Rightarrow sun, light bulb, candle etc.	



Sl. NO	Teacher activity	Student Activity	sub-skills
5)	Do you know the type of image and what are they?	Ans \Rightarrow yes real image and virtual image	link between previous knowledge to new one
6)	Tell me what is mean by reflection of light?	Ans \Rightarrow students unable to give answer.	
	Statement of Aim :-	Today we are going to learn about Reflection of light.	final Statement

Explanation Skill

Sr. No	Teacher Activity	Student Activity	Subskills
	Note :- Teacher explain the topic to student.	Note :- Student ans and listen carefully.	
1)	Reflection of light means the phenomenon of bouncing of light rays from a surface into the same medium.	→ Students listen carefully	Explanation conjunction.
2)	The amount of light that is reflected depends on the material and the nature of the surface on which light falls.	→ students listen carefully.	use of studio-visual
3)	The following things shows the reflection :-		

Sr. No	Teacher Activity	Student Activity	Sub skills	Sr. No
	<p>Incident Ray</p>  <p>$\angle AON = \text{Incident angle} = i$</p> <p>$\angle BON = \text{Reflected angle} = r$</p> <p>point of incidence $\Rightarrow \underline{O}$ Reflected Ray $\Rightarrow \underline{BO}$ Normal :- ON Show the Normal.</p>	<p>Students listen carefully.</p>	<p>fire planation conjunction.</p>	<p>1)</p> <p>2)</p> <p>3)</p>

\Rightarrow Teacher explain about the Topic given to them to students.

Questioning Skill

skills	Sr. No	Teacher Activity	Student Activity	Subskills
		Note :- Teacher ask questions to students.	Note :- Students answer properly	
	1)	What is reflection?	Ans \Rightarrow when a ray of light falls on a mirror or polished surface it bounces off the surface.	Low level question.
Explanation	2)	What is Mean by Incident Ray?	Ans \Rightarrow Incident ray is a ray of light that strikes a surface.	Medium level question.
pic	3)	Give the example of reflection of light?	Ans \Rightarrow see color of diff. objects due to reflection of light.	High level question.

HOMEWORK :-

- 1) What do you mean by incident angle?
- 2) What is reflected ray?
- 3) What is Reflection of light?

Kulbade
03/06/2024

SHEELADEVI
COLLEGE OF EDUCATION
WADI NAGPUR
B.ED 1st YEAR.

EPC - 2
2023 - 2024

SEMESTER - II

PSYCHOLOGY TEST

Submitted By :- PRERNA
MESHARAM.



PSYCHOLOGY TEST

1. TRANSFER OF LEARNING

2. RORSCHACH INKBLOT

TEST

3. EDUCATIONAL INTEREST

TEST

4. LEARNING CURVE TEST

5. SPAN OF ATTENTION



Experiment NO :-

1

Date :- 5/02/2024

Topic :- Transfer of Learning

Experimenter :- Preetna Meshram

Aids :-

1) stop watch

2) pencil Eraser

3) Graph paper

4) practical pages.

1

Experiment No :-

Date :- 2/02/2024

Edward Lee Thorndike

- Born August 31, 1874
- Died August 9, 1949
- Born in Williamsburg, Massachusetts
- Studied animal behaviour and the learning process
- led to the theory of connectionism
- Laying the foundation for modern educational psychology.



Theoretical Background of the Experiment:-

The main purpose of any learning or education is that a person who acquires some knowledge or skill in a formal or structured situation like a classroom, or a training situation will be able to transfer such knowledge and skill to real-life situations and adapt himself more effectively.

The purpose of any teaching-learning interaction is to bring about a generalization and application of what has been learned in specific situations to real-life situations and acquire a general capacity to adapt.

This theory has been developed by E. L. Thorndike. According to him most of the transfer occurs from one situation to another in which there are most similar or identical elements

This theory explains that carrying over from one situation to another is roughly proportional to the degree of resemblance in a situation, in other words - more the similarity, more the transfer.

The degree of transfer increases as the similarity of elements increases. For example, learning to ride a Moped is easy after learning to ride a bicycle. Here the transfer is very fast because of identical elements in both vehicles.

There are three types of transfer of learning :

- 1) positive transfer
- 2) Negative transfer
- 3) Neutral transfer

Aim of the Experiment

Transfer of learning bridges the gap between theory and practice, fostering skill development, critical thinking, and knowledge-building.

Knowledge transfer is crucial in the workplace, as it identifies the skills, learning abilities and areas of improvement of workers.

Overall, learning transfer is not the end of progress or development but is a stepping stone towards proficiency and growth. The purpose is to self-attribute the successes experienced.

Today, transfer of learning is usually described as the process and the effective extent to which past experience affect learning and performance in a new situation.

Transfer of learning stands for the carry over from one act of learning to another transfer of learning.

Precautions :-

- 1) proper seating arrangement in an adequate environment should be made for the subject.
- 2) all the Necessary Material should be checked and kept ready.
- 3) The scoring should be done accurately
- 4) It should be made sure that the subject traces on the star pattern.
- 5) sheets while looking in the mirror and not by directly looking at the star.
- 6) It should also be made sure that the subject is physically and Mentally prepared for the experiments.
- 7) proper support was established with the subject telling her about the experiment etc.

Procedure of Experiment :-

- 1) When the apparatus and the subject both were ready for the experiments, the part (A) - pre test condition of the experiment was started by the giving the pen / pencil in the subject's left hand and making her trace the star pattern in the clockwise direction for 5 trials.
- 2) Then the pencil was put at the starting point and start signal was given by saying 'START' and the stopwatch started simultaneously.
- 3) When the pencil reached the goal bracket (END) point the subject was asked to stop by saying 'stop' and the stopwatch was stopped simultaneously.
- 4) Time taken and the number of errors were recorded in the observation table, and the stopwatch was reset and error counter was set to zero, ready for the next trial in a similar manner. The second, third, fourth and fifth trials with left hand were done.

5) Next the Second (Leavening / practice) condition of the experiments was done.

In this part, the subject traced the star pattern with her right hand in the anticlockwise direction.

6) Her pen was put at the starting point and she traced the pattern in the anticlockwise direction.

7) The Trials were started and stopped in the manner stated above and the time taken and the number of errors in each trial were recorded in the observation table.

8) This part of the experiments was continued for as many trials till the subject could trace the pattern without errors in ten consecutive trials.

9) After the experiment was over the subject was thanked and asked to leave.

Observation Table :-

Sr.No	Trial Hand	Time	Error
1	Right Hand	46.76	0
2	Right Hand	39.62	0
3	Right Hand	35.42	0
4	Right Hand	32.77	0
5	Right Hand	31.63	0
6	Left Hand	48.20	7
7	Left Hand	43.13	5
8	Left Hand	38.91	3
9	Left Hand	37.92	1
10	Left Hand	35.62	1

Observation Table :-

Serial No. Trial Hand Time Error

The Limitations of Trial and Error



2 10-22 hand trial

1 08-18 hand trial

1 08-18 hand trial

Intraspective Report :-

Concerned faculty explained to us about trial and error learning. The subject was seated comfortably and instruction was given. At first the subject was bit nervous and was also excited to do the experiment. Good rapport was build with the subject.

During the first trial the subject was so confused, she made so many errors and was also very nervous whenever the "beep" sound was heard. On the first trial she took 46.76 seconds to complete the task. As the trial went on the time and errors decreased. And I was thoroughly enjoyed doing the experiment.

On 10th trial she firstly got a 0 and she was amazed and happy, on the next 2 consequent trials she again got 0's. After doing the experiment I conveyed thanks.

Educational Applications :-

- 1) To give the student the opportunity to make the efforts to learn and try this attempt.
- 2) Linking, learning the positions of the positions similar to the students daily life.
- 3) Focus on performance and practice and not on the dumping.
- 3) Interest in the gradual process of learning from easy to difficult from simple units to complex units.
- 5) To achieve speed and efficiency in learning and maintaining at motivation.
- 6) Efforts should be made to seek positive transfer value of the learned.
- 7) Education should encourage students to explore and discover new information and ideas, rather than just memorizing.

Conclusion :-

1) On the basis of the experiment following conclusions can be drawn :-

The sensory skill acquired by the right hand helps in the learning the skill with the left hand.

2) The subject learn a new type of eye hand co-ordination in mirror training drawing tasks.

3) In order to reach the goal, the individual makes a number of responses to the situation, i.e. he makes a number of trials.

4) The final response by which the goal is reached has a strengthening effect.

5) It is characterised by repeated, varied attempts which are continued until, success or until the agents stops trying.

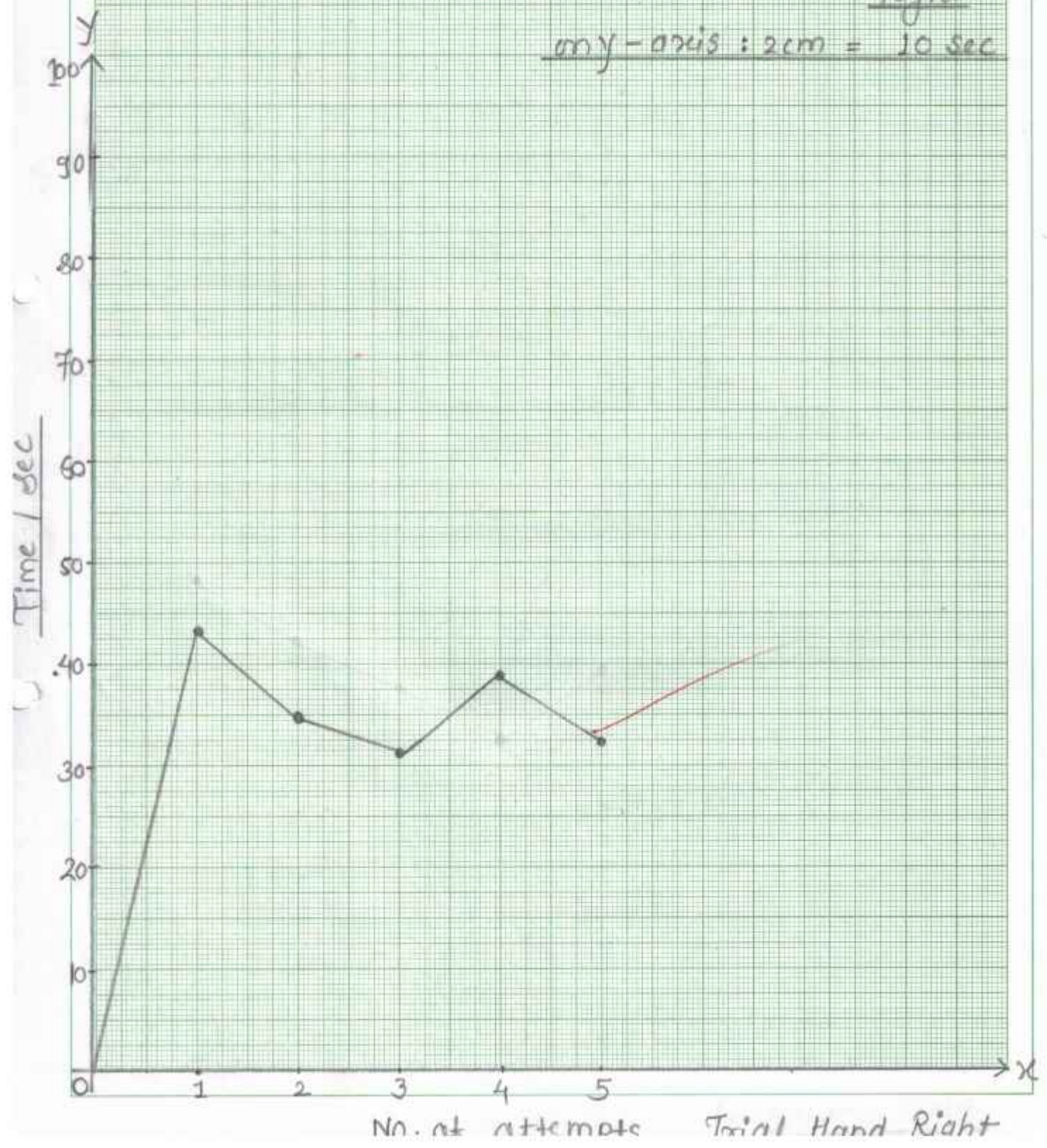
Right Hand Chart (Time Based)

Scale :-

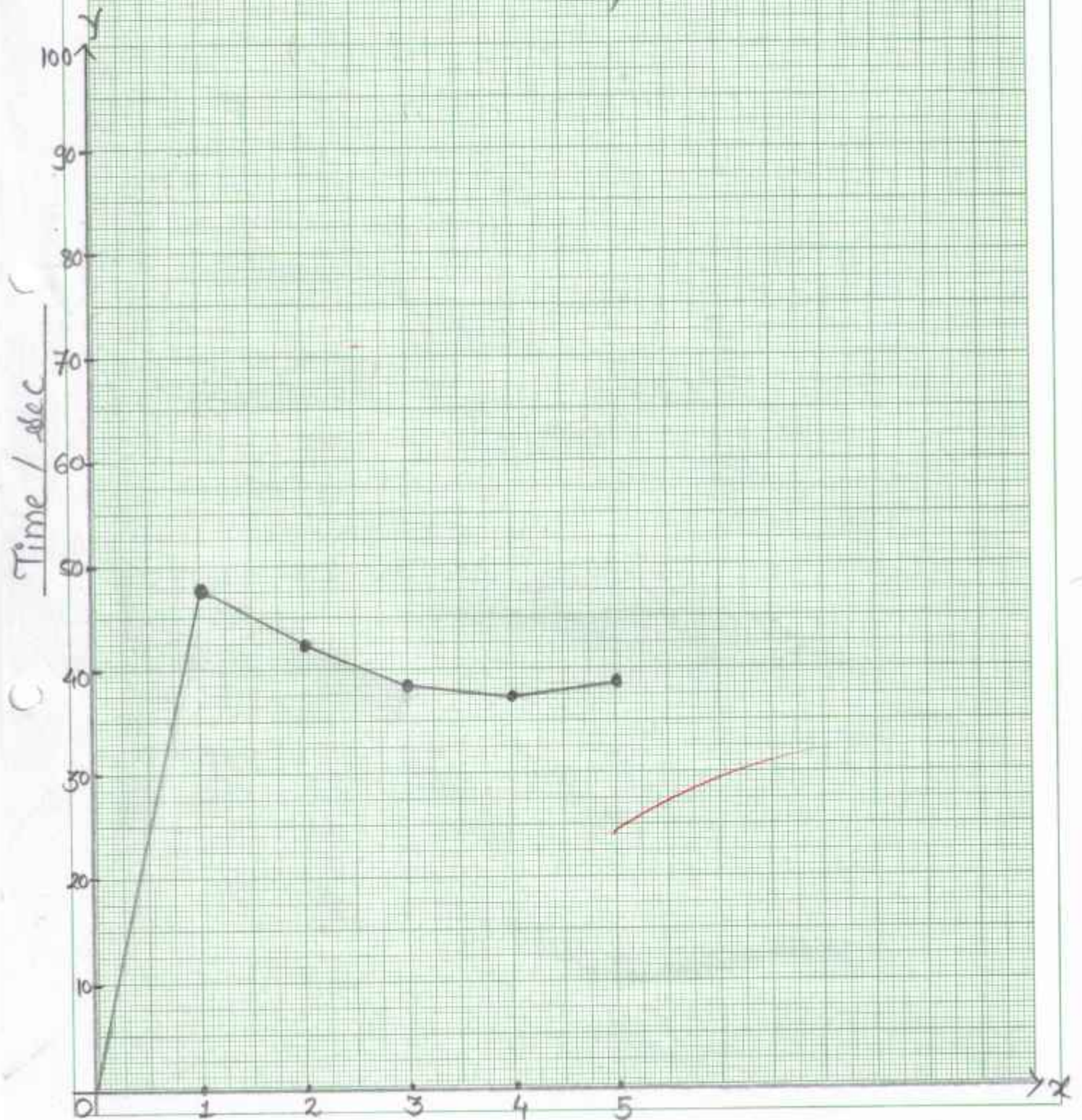
on x-axis : 2cm = 1 Hand

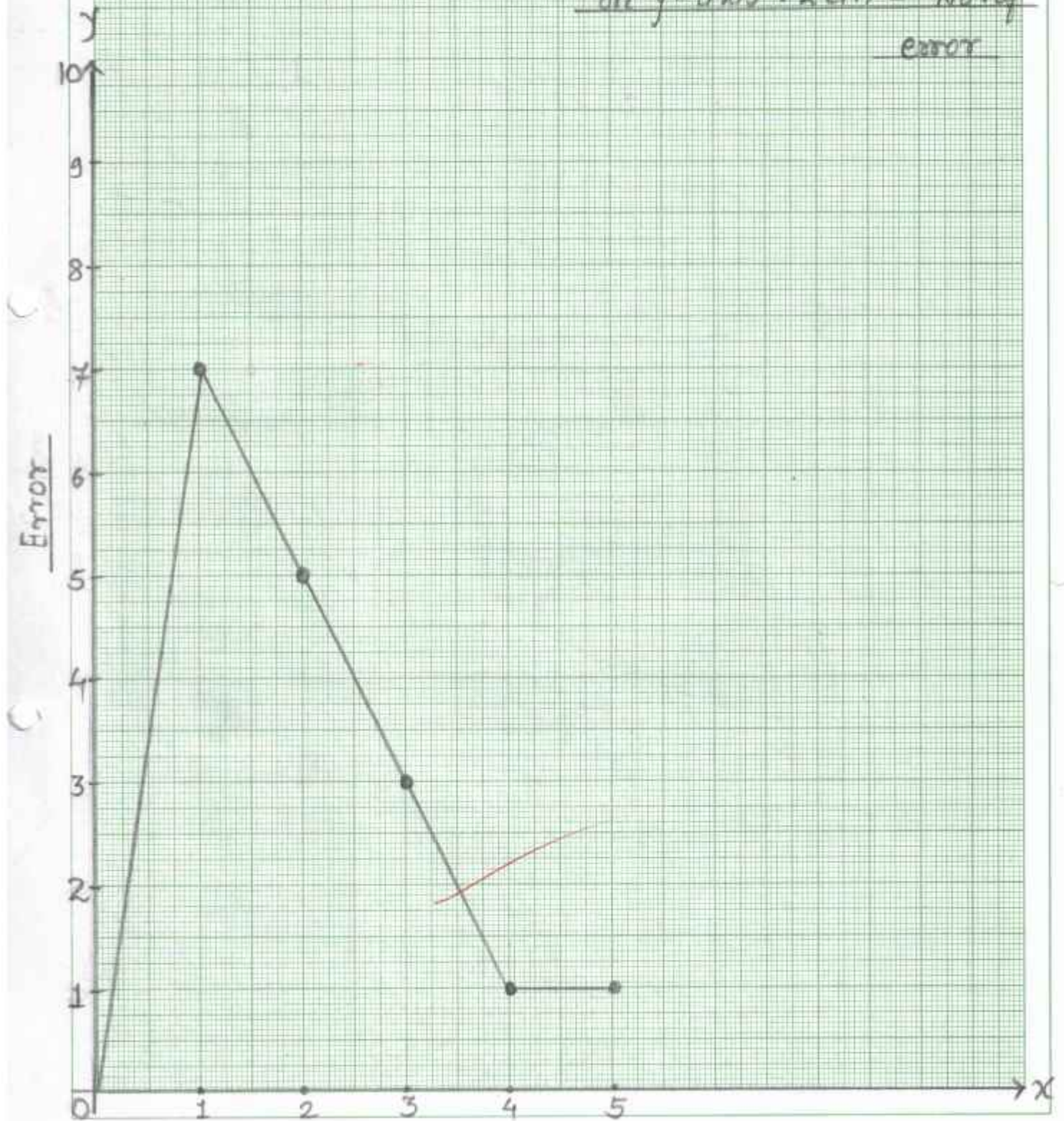
Right

on y-axis : 2cm = 10 Sec



No. of attempts Trial Hand Right

Left Hand chart (Time Based)Scale :-on x-axis : 2cm = 1 HandLefton y-axis : 2cm = 10 Sec

Left Hand chart (Error Based)Scale :-on x-axis : 2 cm = 1 Hand
lefton y-axis : 2 cm = No. of
error

Experiment NO :- 2

Topic :- The Rorschach Test

Experimentor :- Preetna Meshram

Materials :- 1) 10 cards

2) Ink Bottle

3) Colours

4) A4 size plain paper

Date :- 5/02/2024

2

Expériment No 1

THE RORSCHACH TEST



Hermann Rorschach

Theoretical Background of the experiment :-

- 1) The Rorschach Inkblot Test was developed in 1921 by a Swiss psychologist named Herman Rorschach.
- 2) History states that one of Hermann's favorite games when he was a child, was called kleecksography, which involved creating inkblots and creating stories, or poem about them.
- 3) Hermann's strong interest in inkblots continued into adulthood. Rorschach used his artistic skill to refine and enhance his final inkblots so that each contained carefully placed contours to suggest objects or specific images to most people.
- 4) He began working in a psychiatric hospital and experimented with forty or more inkblots for his patients between 1917 and 1920.

5) Herman noticed that individuals with schizophrenia responded to the blots differently from patients with other diagnoses or disorders.

6) This made him ponder if the inkblats could be used to create profiles for different mental disorders.

7) Therefore, perhaps inspired by his favorite childhood game and his studies of Sigmund Freud's dream symbolism, Herman Rorschach developed a systematic approach to using inkblats as an assessment tool to evaluate cognition and personality and to diagnose certain psychological conditions, including schizophrenia.

8) This test is specifically used to assess the personality and emotional functioning.

9) In his published paper he represented the artwork of mental patients and also suggested that these artwork could be used to learn about their personalities.

Aim of The Experiment :-

The Rorschach test is a projective psychological test in which subjects' perceptions of inkblots are recorded and then analyzed using psychological interpretation, complex algorithms, or both.

Some psychologists use this test to examine a person's personality characteristics and emotional functioning. This test is designed to systematically elicit information about a person's motivations, preferences, interest, emotional make-up and style of interacting with people and situations.

The idea was that these tasks forced people to project and put forward distinctive and interesting aspects of their personality when completing an activity that does not include much external guidance.

Procedure of Experiment :-

- 1) There are 10 official inkblots, each printed on separate white cards.
- 2) Five inkblots are black, two are black and red, and three are multicolored.
- 3) The examiner will give you one card at a time and ask you, what might this be?
- 4) You are free to interpret the ambiguous image however you want. You can take however long you like to interpret each card and can give us many responses as you want. You can also hold the card in any position, whether it is upside down or sideways.
- 5) Your examiner record everything you say. They will note the time taken for each response, the position of the card is being held, your expression during the test.

- 5) once you go through all the inkblats your examiner will take you through each inkblat a second time.
- 6) The goal of this is not to get more information, but to help your examiner see what you see.
- 7) They will ask you to identify where you see what you originally saw and what features makes it look like that.
- 8) content refers to the responses are like Human, Animals, Nature etc.
- 9) Some responses are quite common, while other may be much more unique.
- 10) Highly atypical responses are notable since they might indicate disturbance in thought patterns.

Observation Table :-

Sr. NO	Card NO.	Observation 1	observation 2	observation 3	diff beth two card	Special observation
1	card 1	Bat	Butterfly	Bat		Butterfly
2	card 2	part of flower	stigma	ovary		Flower parts
3	card 3	Human face	Human face	Human face	similar	
4	card 4	Dome of Temple	Dome of Temple	Dome of Temple	similar	NO - difference
5	card 5	flying Bird	flying Bird	flying Bird	similar	NO - difference
6	card 6	Butterfly	Butterfly	Butterfly	similar	Insects
7	card 7	face of man	face of man	face of man	similar	Human face
8	card 8	Butterfly	Butterfly	Butterfly	similar	Insect
9	card 9	Two Butterfly	Two Butterfly	Two Butterfly	similar	Insect
10	Card 10	cockroach	cockroach	flying Bird		

Sr. No	card NO.	observation 1	observation 2	observation 3	diff. betn two card	Special observation
1	card 1	Bat	Butterfly	Bat	different	Butterfly
2	card 2	part of flower	stigma	ovary	diff.	Flower part
3	card 3	Human face	Human face	Human face	Similar	
4	card 4	door of Temple	door of temple	door of Temple	similar	No. diff
5	card 5	flying Bird	flying Bird	flying Bird	similar	No. diff
6	card 6	Butterfly	Butterfly	Butterfly	similar	Insect
7	card 7	face of man	face of Man	face of Man	similar	Human face
8	card 8	Butterfly	Butterfly	Butterfly	similar	Insect
9	card 9	Two Butterfly	Two Butterfly	Two Butterfly	similar	Insect
10	card 10	cockroach	cockroach	flying Bird	diff.	

Sr No.	Card No.	observation 1	observation 2	observation 3	diff. betn two cards	Special observation
1	card 1	Bat	Butterfly	Bat	diff.	Butterfly
2	card 2	part of flower	stigma	ovary	diff.	flower part
3	card 3	Human face	Human face	Human face	similar	
4	card 4	name of temple	name of temple	name of temple	similar	No. diff
5	card 5	flying Bird	flying Bird	flying Bird	similar	No. diff
6	card 6	Butterfly	Butterfly	Butterfly	similar	Insect
7	card 7	face of Man	face of Man	face of Man	similar	Human face
8	card 8	Butterfly	Butterfly	Butterfly	similar	Insect
9	card 9	Two Butterfly	Two Butterfly	Two Butterfly	similar	Insect
10	card 10	cockroach	cockroach	flying Bird	diff.	

Introspection Report :-

Interpreting a Rorschach record is a complex process. It requires a wealth of knowledge concerning personality dynamics generally as well as considerable experience with the Rorschach method specifically.

In addition to formal scores, Rorschach interpretation is also based on behaviors expressed during the testing patterns of scores, across responses, unique or consistent theme in the responses, and unique or idiosyncratic perceptions.

However, although the inkblat test may be a perfect tool, it continues to be used widely particularly for diagnosing schizophrenia - which was Rorschach's original intent for the test.

Conclusion :-

Since inkblat tests involve abstract stimuli, the responses to them can be viewed as a measure of divergent thinking ability, which has been regarded as a good estimate of creativity.

They hypothesized that the number of responses given by a subject is influenced by the examinee's expectations.

It is an empirically sound project testing measure backed by years decades of modern and past research.

The Rorschach inkblat test is very much still used in various settings, including hospitals, schools and courtrooms. And it still leads to better insights into the underlying motivations of the persons current behaviours and issues.

Educational Applications :-

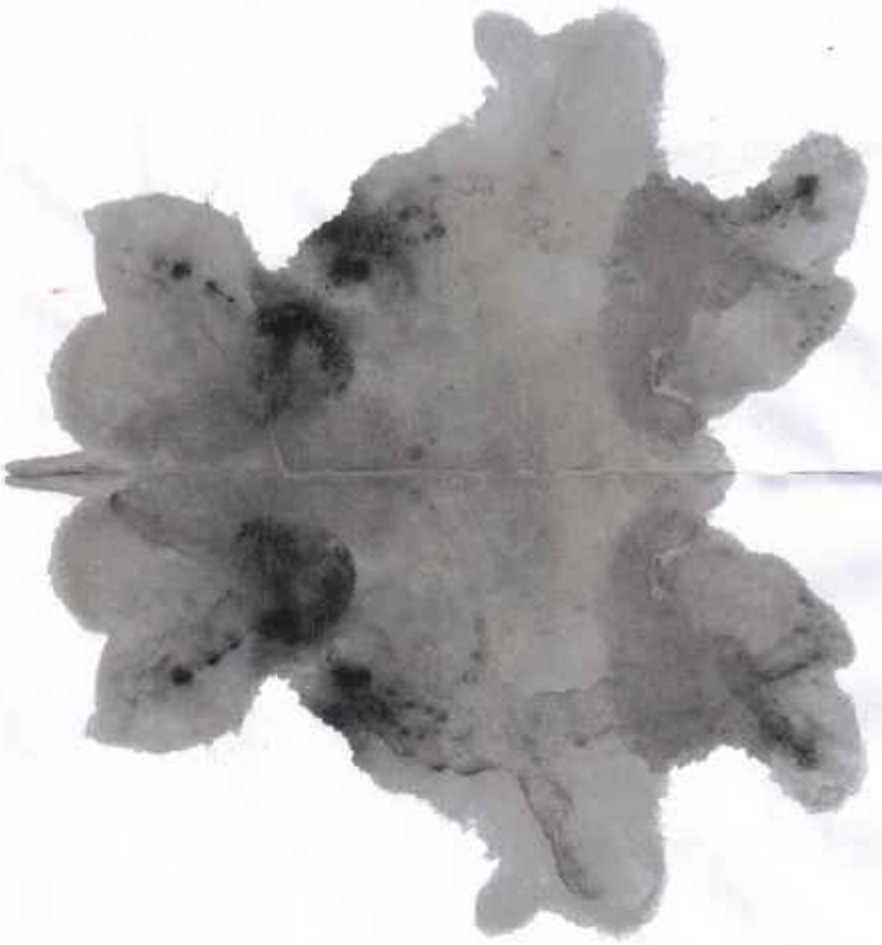
- 1) In schools and clinical settings the Rorschach test can be used to assess children's emotional and psychological well-being.
- 2) The psychological test can help doctors analyze your personality and was used to diagnose mental illness.
- 3) Many psychologists use Rorschach inkblats to gauge personality and measure emotional stability.
- 4) Child psychologists or counselors may administer the test to gain insight into a child's inner thoughts, emotions, and any underlying psychological issues.



Rorschach Test

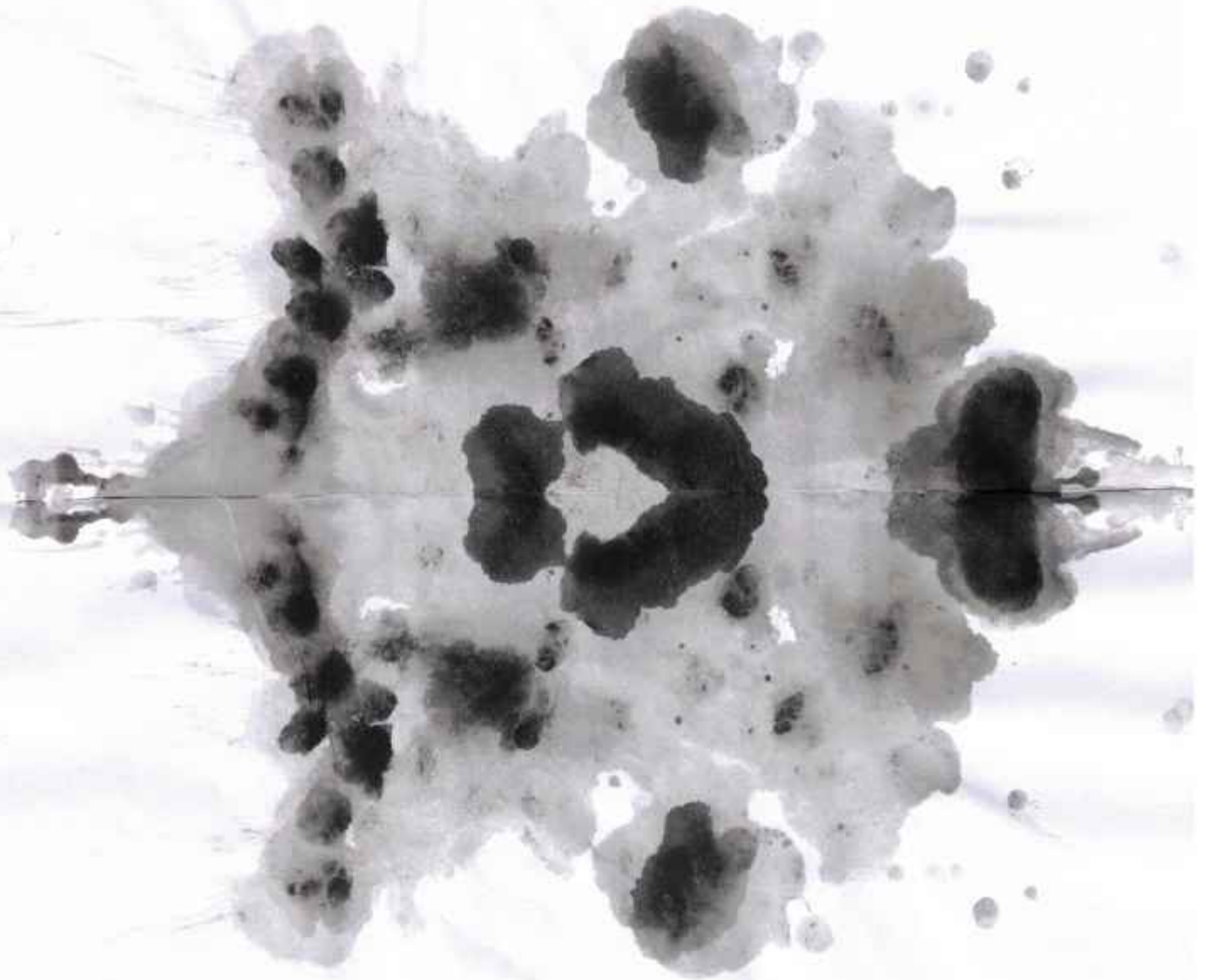
1. 2. 3. 4. 5. 6. 7. 8. 9. 10

Cord. No. 1

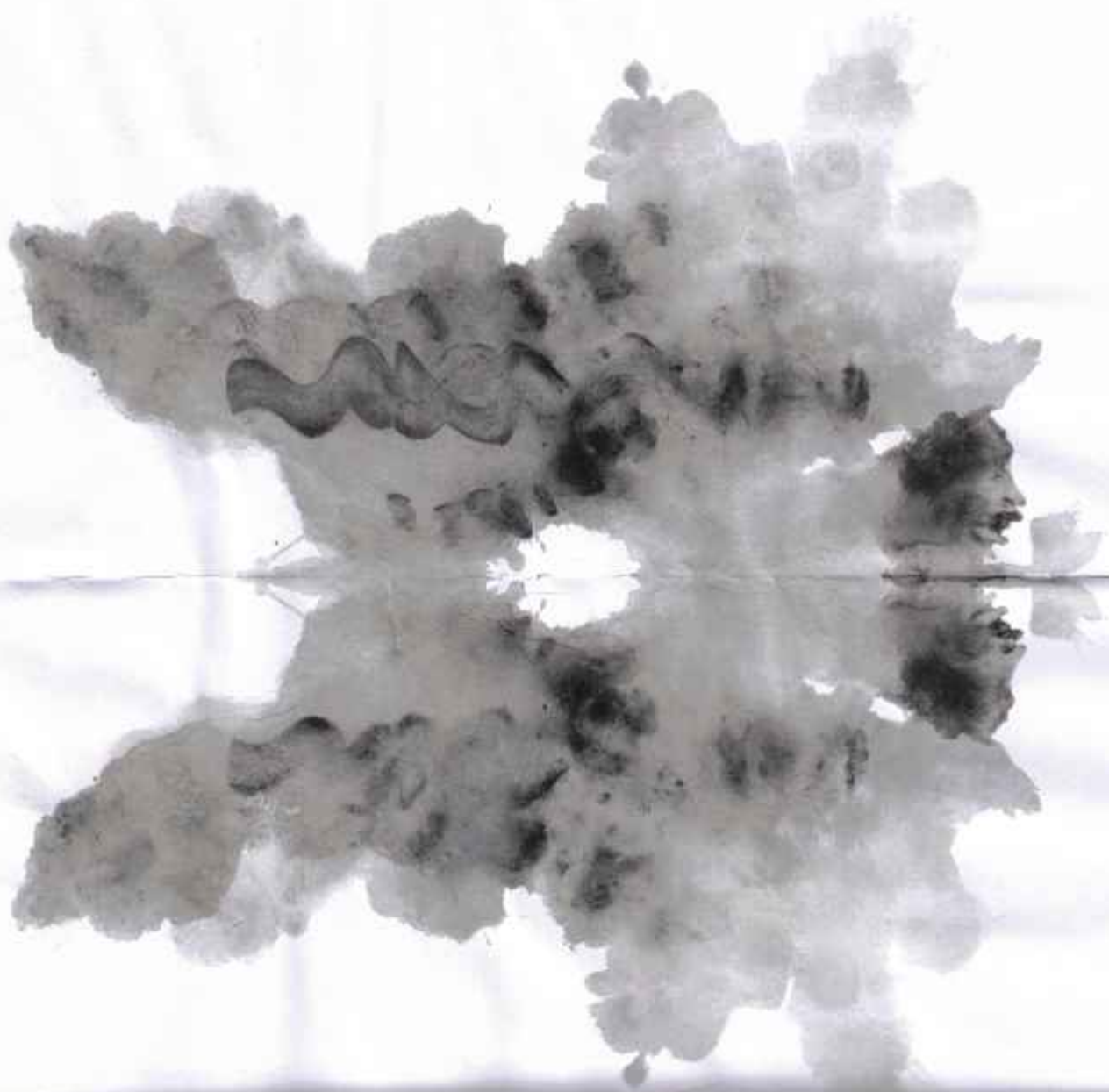


1777

Card. No. 2



Card. No. 3

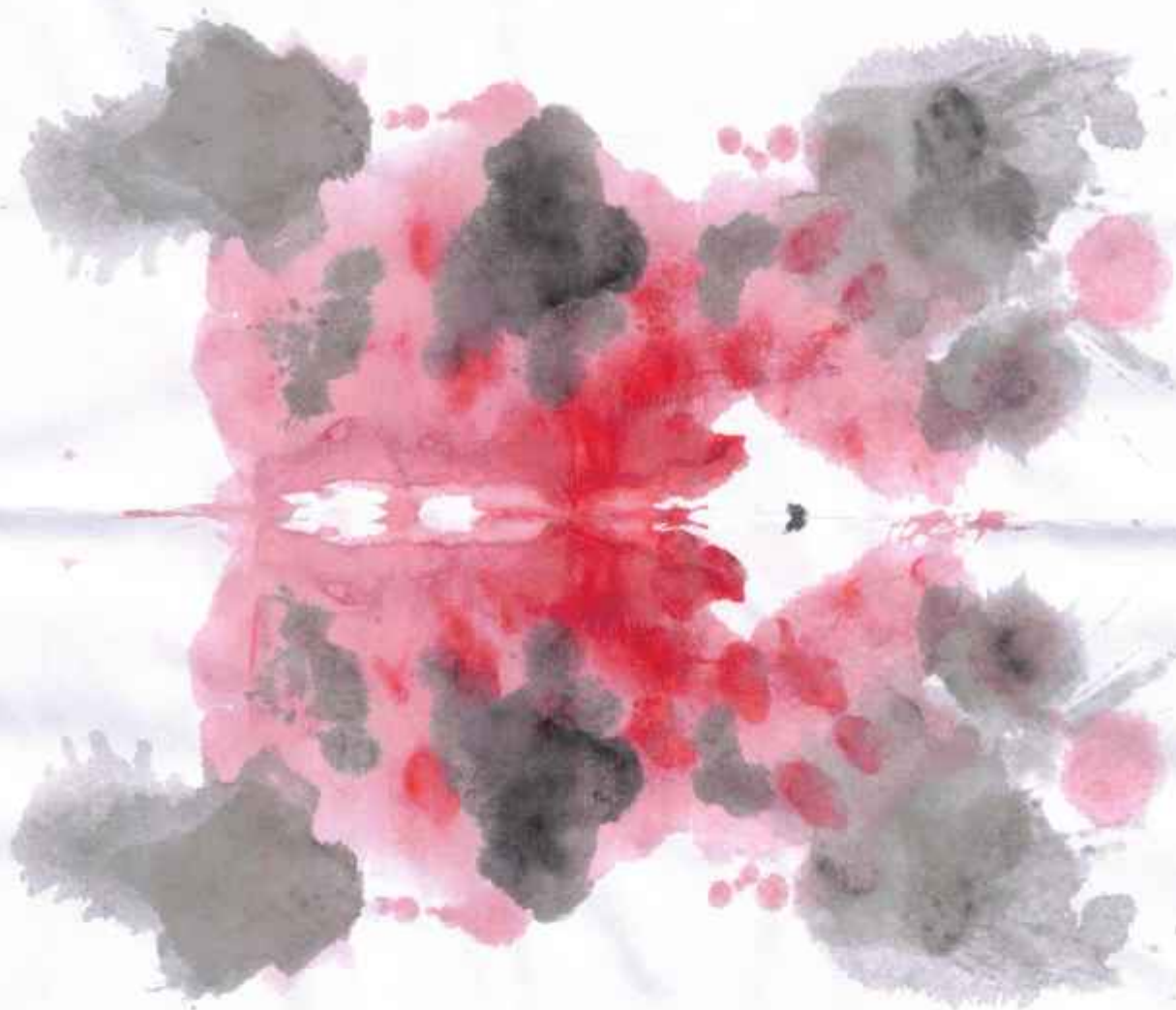


Card. No. 4

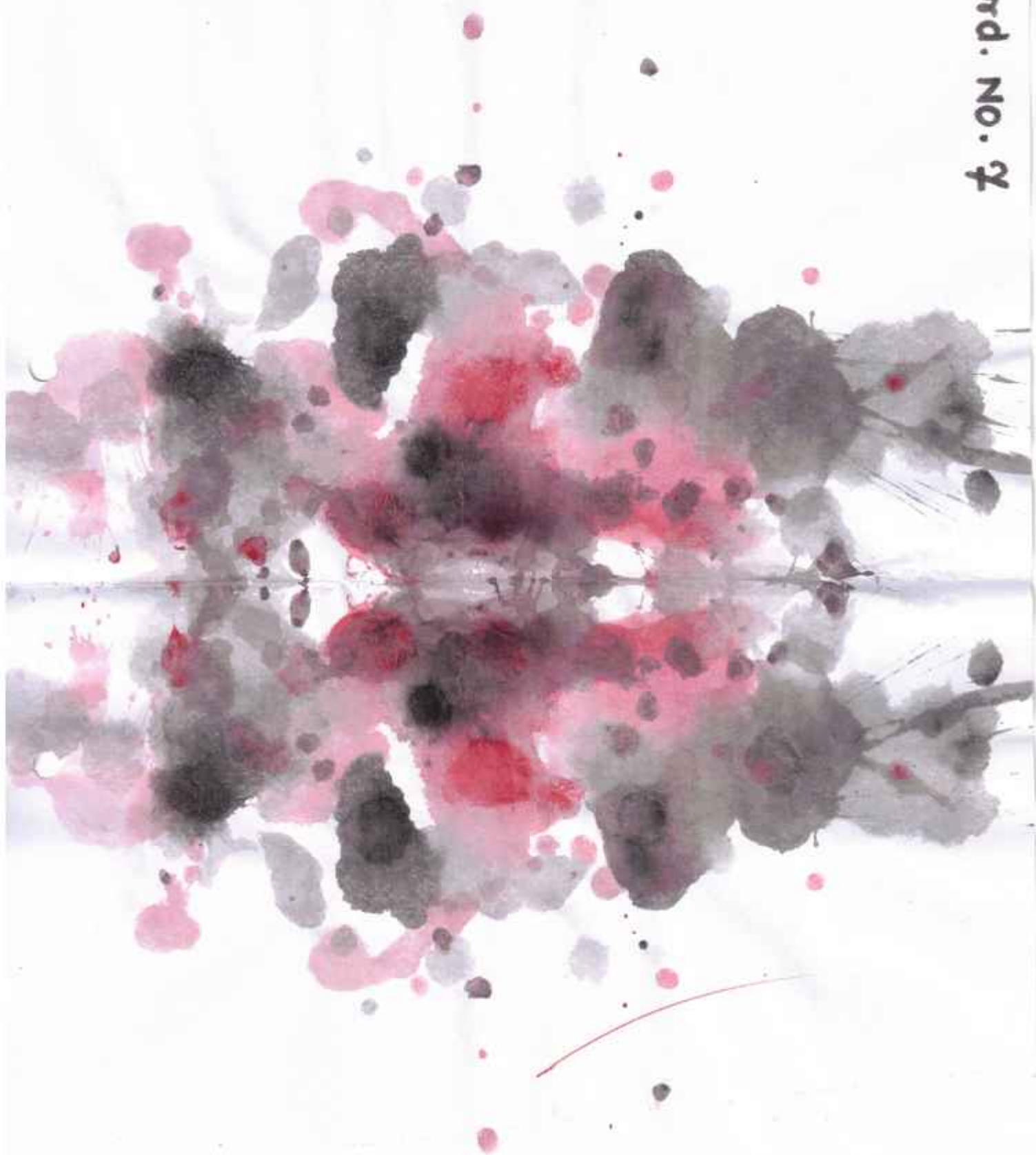




card. No. 6



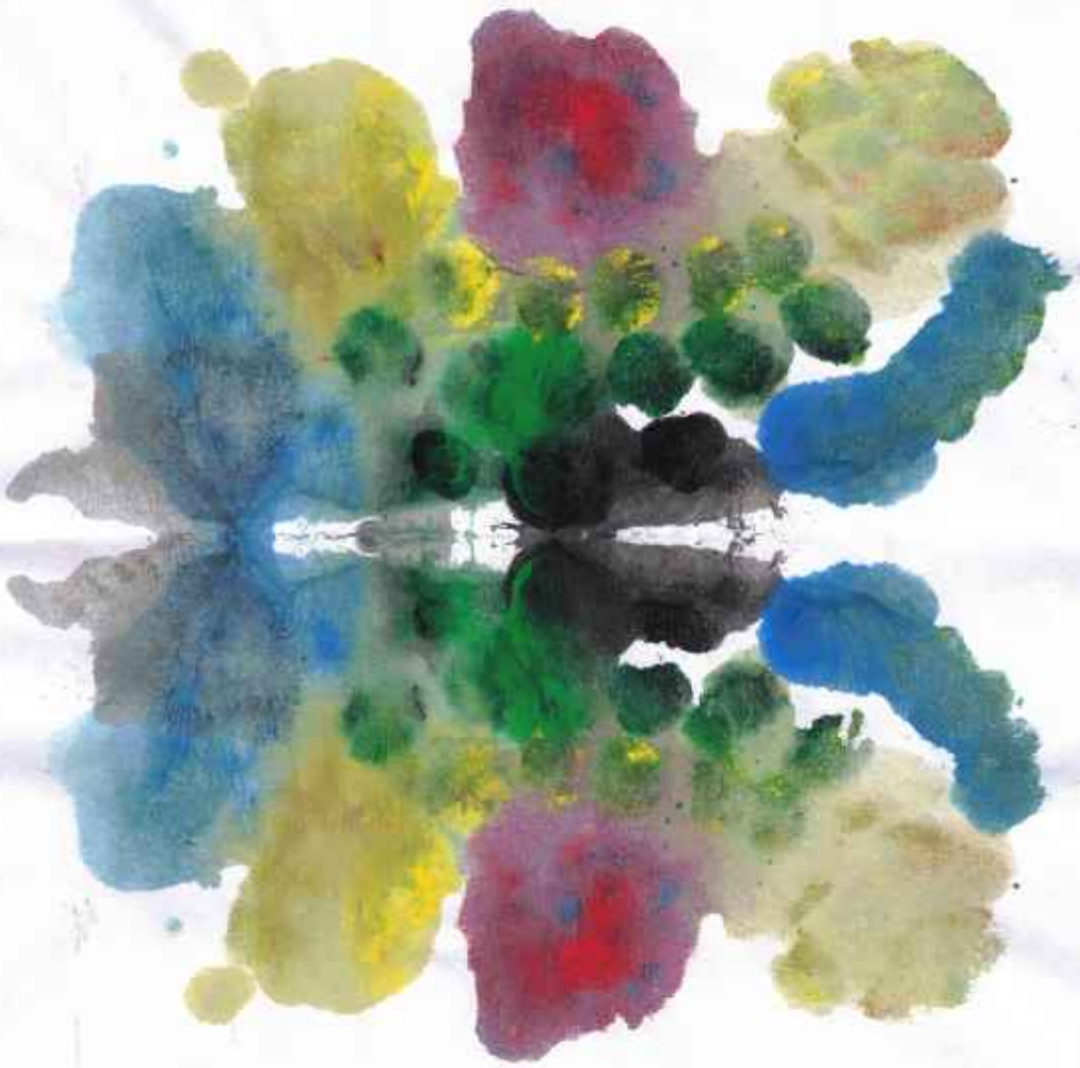
card. No. 7



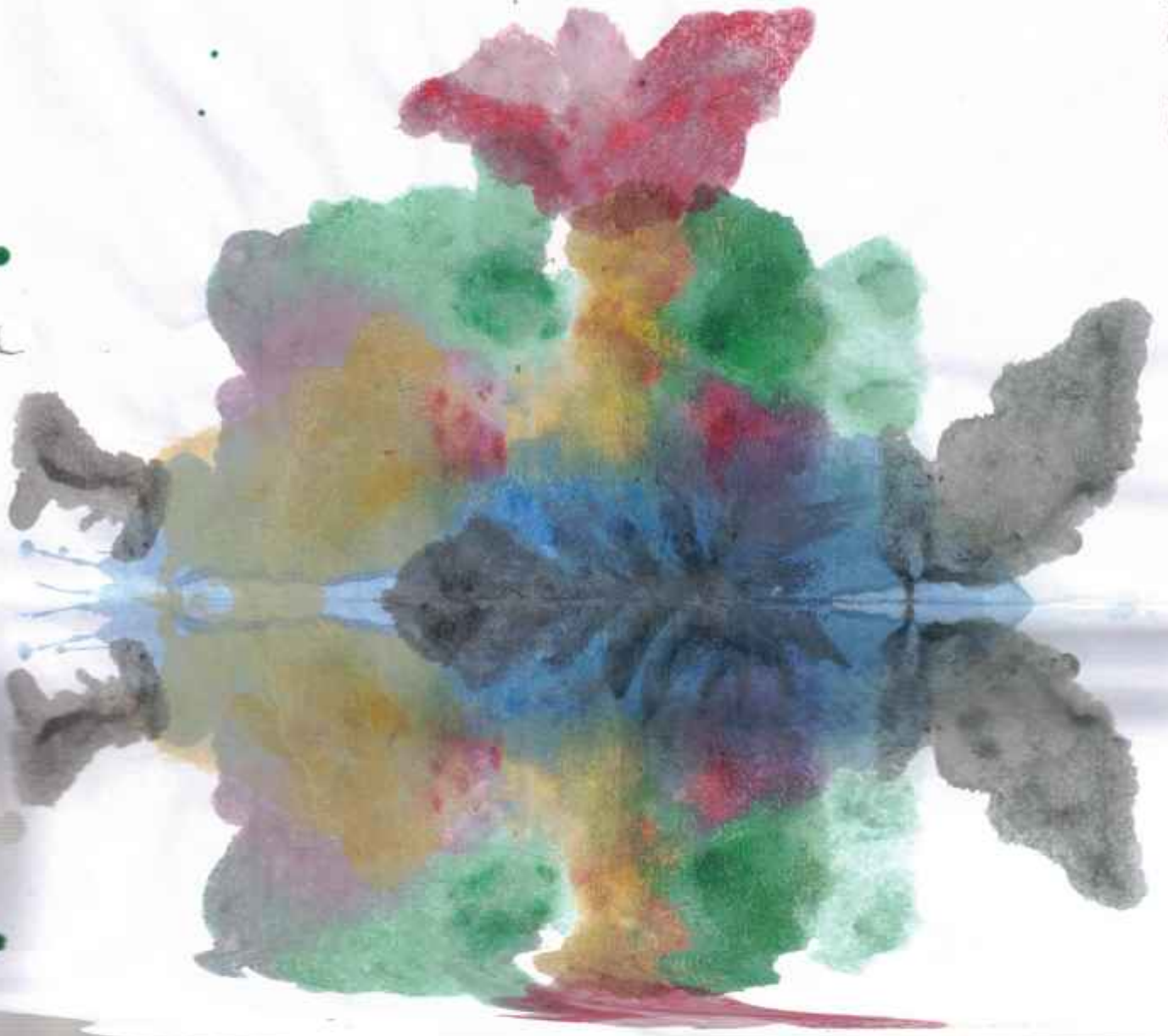
Card. No. 8

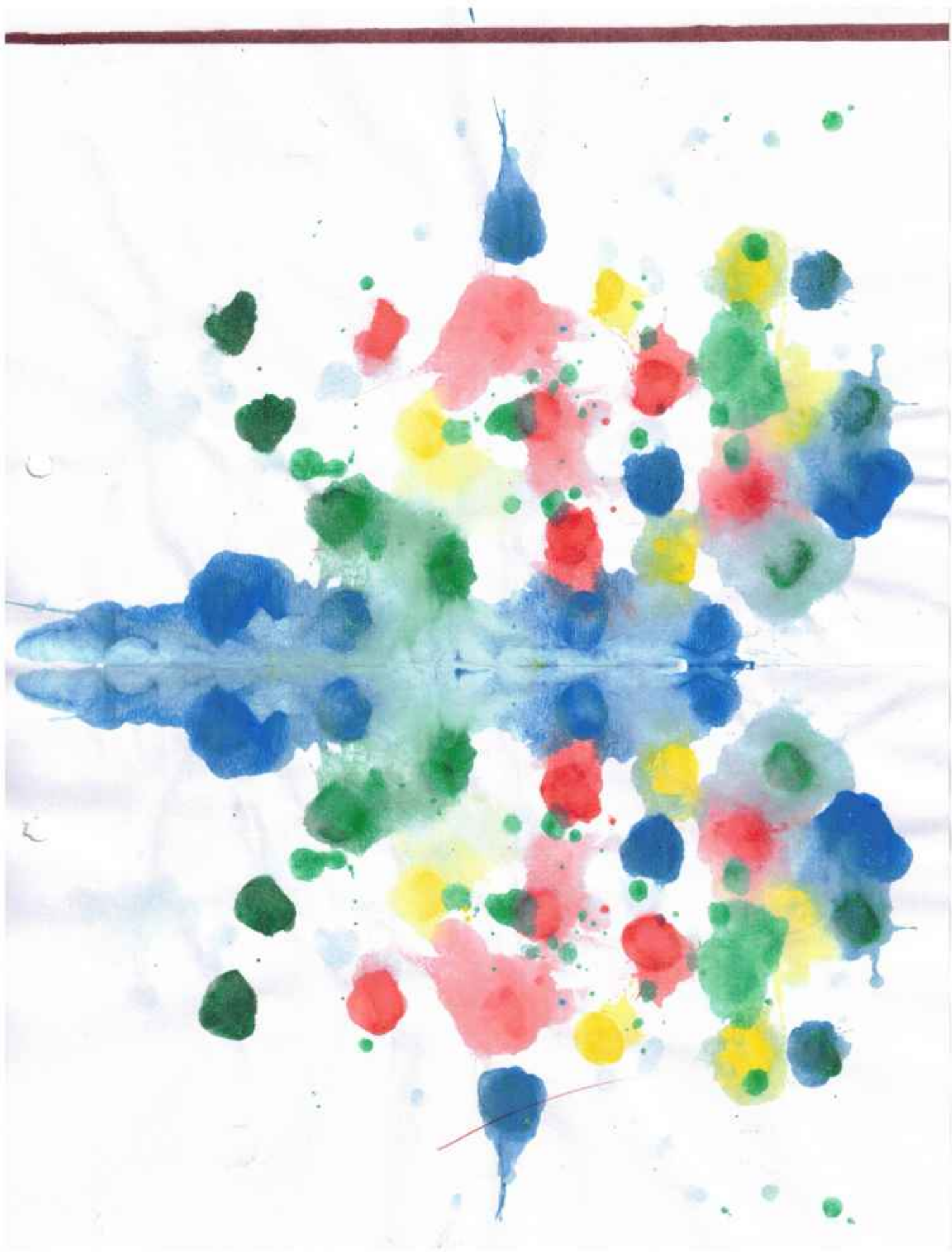


card. No. 9



Card. No. 10





Experiment No :-

3

Topic :- Educational Interest Test

Experimenter :- Preksha Meshram

Tools :-

1) stop watch

2) pencil

3) Eraser

4) Education Record sheet.

Date :- 6 / 2 / 2024

Theoretical Background of the Experiment :-

A Psychological test is an objective and standardized test measure of a sample of behaviour. Educational interest can tell you more on who you are and what suits you. They provide information necessary for making the right career choice.

Obviously your interest indicate what you like and what occupations interest you. If the profession you chose connects with these interests you will find a lot more pleasure in your work. Interest test help you define your interest and determine what you like most. This could help you when making a career choice. Educational interest test that determines a person's preferences for specific fields or activities.

This psychological test was based on the educational interest area. It was prepared by Dr. S. P. Kulshrestha. It includes different educational subject

like Agriculture, Home science, Fine arts, Technology and science etc.

Formerly, it was believed that interest reflect inborn abilities, but the recent trend is to emphasise the fact that interest are the product of individuals environment. It means teachers, educational administrators and guidance workers should have a close watch on the students interest from the very beginning of the life of the individual.

Therefore, educational guidance should be provided to the child from the very early stage when the child enters school and continues even after a stable choice has been made.

It is intimately related with child's acquisition of knowledge, understanding and skill which actually form the basis of for his educational choices. The educational interest play very significant role in educational guidance.

Aim of the Experiments :-

Educational interest are defined as one's own pattern of preferences, likes and dislikes preferred in any manner, wisely or unwisely by self or by any other source for a given educational area or subject. Therefore the purpose of present record is to aid students to adjust themselves to their education by making wise choices of the subjects of study.

Only by making a right choice will each child be able to utilize his educational potentialities to the maximum possible extent.

This record has been successfully used for more than a decade and found suitable at delta and higher secondary level. Many research workers, later found it also very important and useful for college students and young adults out of schools and colleges.

Procedure of Experiments :-

i) The present record contains 98 educational subject / activities belonging to seven different educational interest areas,

- i) Agriculture (AG)
- ii) Commerce (CO)
- iii) Fine Arts (FA)
- iv) Home Science (HS)
- v) Humanities (HU)
- vi) Science (SC)
- vii) Technology (TA)

It is a self administering record and may be administered individually as well as in group. Thus each of these educational areas has fourteen subjects on the record, seven on horizontal and seven on vertical.

The tester should patiently read the above instructions along with the examples aloud and the testee should be asked to read them silently. The practice items should be emphasized. Although there is no fixed time limit in

completing the responses on the record, but usually pupils take 7 to 10 minutes in responding to the record. If necessary the tester may be asked to total up their sources under each different area.

For example, to know the interest in agriculture (AG) area, sum the total for AG1 and AG2. For AG1 sum up all right marked (\checkmark) responses vertically for first figure in first column and for AG2 and all the right marked (\checkmark) responses horizontally for second figure in first (horizontal) column.

Thus both the sums for AG1 (vertically) and AG2 (horizontally) provide a total score for AG which indicates the interest in the agriculture field.

In the same manner, raw scores for other educational areas may be counted.

Observation :-

- 1) I selected class for test. This class includes 30 students. I distributed the test sheet to all students and asked them to put a tick mark on the space where they are interested.
- 2) And finally I calculated the total and identified their interest area.
- 3) Most of the students were interested in fine arts. The teaching of fine arts help for mainly the emotional development of an individual.
- 4) Drawing, painting music, art etc are taught for developing emotional control, balance, stability adjustment and a sense of appreciation of beauty in life.
- 5) A balanced personality is a pre-requisite for a successful social living. Most of the students dislike humanities and home science.

Introspection Report :-

Scores can be interpreted in two ways quantitatively and qualitatively.

The interest scores can be presented in hierarchical order through the profile. and these main educational interest area, second interest area, third interest area, and least interest area, may be understood by counting the frequencies of each educational interest area.

percentage for each interest area can also be calculated. This is a qualitative interpretation of the scores.

The order quantitative method of interpretation is on basis of classification based on :-

classifications	Scores
1) High interest	
2) Above average Interest	
3) Average Interest	
4) Below average Interest	
5) Low interest	

Conclusion

Education interest test help to find out the interest area of the students. It will help the teacher to give correct information or knowledge to the students according to their interest.

It also helps students to identify courses that suit their skills and preferences. This test is designed to help students find and study the right courses to achieve their educational and career goals.

The following suggestions are made :-

- 1) A study can also be done on topic as a comparative study between government managed and private managed schools.
- 2) The study also can be conducted to consider the criteria as socio-economic status too.

Abstract :-

Objectives :- To know the educational interest trend among young children and effects of gender differences and environment on interest trend.

Sample :- It was tested on class 5th students among which there are total 30 students in class.

Result :- Thus after scoring the analysis the data obtained, could be said that gender and environment affect interest. And current educational trend among children is highest interest in technology than commerce, fine arts, science, humanities, home-science and least interest in agriculture.

Educational Applications :-

1) Educational interest are demarcated as one's own pattern of preferences, likes and dislikes.

2) Interest and attention are very closely related, they play an important role in development of the behaviour and personality and are very important to understand the individual and to guide his future plans and activities.

3) The identification and measurement of interest is very essential for the educational and vocational guidance.

4) It also aid students to adjust themselves to their education and by making wise choices of the subjects of study.

5) only by making a right choice will each child be able to utilize the his educational potentialities to the maximum possible extent.



Dr. S. P. Kulshrestha (Dehradun)

Consumable Booklet
of
E I R
(English Version)

Please fill in the following informations :—

Name.....

Age..... Sex..... Class.....

Name of the School.....

Occupation of Father..... Monthly Income.....

Rural / Urban Date.....

INSTRUCTIONS

1. The main objective of this is to know your educational interest so that we can guide you for education.

2. In every box of this booklet two educational subjects are written. You can put your idea of your educational interest from the two given educational subjects keeping in view the salary, prestige and future of the subject. You have to mark your choice in the following way—

(a) if you choose the first educational subject of the box, then put a tick (✓) against No. 1. e.g.,

Chemistry 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Hindi
--------------------------------------	---

(b) if you choose the second educational subject of the box, then put a tick (✓) against No. 2. e.g.

Art 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Agriculture
---	--

(c) if you choose both the subjects of the box, then put a tick mark (✓) against both the Nos. e.g.

Music 2 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 1 Home Science
---	--

(d) if you dislike both the subjects of the box, then put a cross (x) mark against both the Nos. e.g.

Economics 2 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 1 Geography
---	---

In this way you have to indicate your like/dislike of the subject given in the boxes leaving no box unmarked. If you have any doubt in this matter, please ask.

3. Though there is no time limit to complete this record even then answer quickly. Mostly 7 to 10 minutes are required to complete this record

4. Return this record sheet after marking your choice of the educational subject in each of the box.

Now open the record and start your work.

Estd. 1971

☎:(0562) 2464926

NATIONAL PSYCHOLOGICAL CORPORATION

4/230, KACHERI GHAT, AGRA - 282 004 (INDIA)

APPENDIX-I

EDUCATIONAL INTEREST RECORD

	AG 1 ↓	CO 1 ↓	FA 1 ↓	HS 1 ↓	HU 1 ↓	SC 1 ↓	TE 1 ↓	
AG 2 →	<input type="checkbox"/> 1 Animal Husbandry <input type="checkbox"/> Pest Science 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Elements of Commerce <input type="checkbox"/> Farming 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Arts <input type="checkbox"/> Manure & Fertiliser Science 2 <input type="checkbox"/>	<input type="checkbox"/> 1 General Home-Science <input type="checkbox"/> Agriculture Economics 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Hindi <input type="checkbox"/> Dairy Chemistry and Animal Nutrition 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Geology <input type="checkbox"/> Agriculture Extension 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Electrical Engineering <input type="checkbox"/> Horticulture 2 <input type="checkbox"/>	Total AG 2 = 2
CO 2 →	<input type="checkbox"/> 1 Crop Science and Crop Planning <input type="checkbox"/> Accountancy 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Principles of Transportation <input type="checkbox"/> Banking 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Painting <input type="checkbox"/> Foreign Trade 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Preparation of Home Budget <input type="checkbox"/> Sale-Purchase Business 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Logic <input type="checkbox"/> Shop Management 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Chemistry <input type="checkbox"/> Modern Transport 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Fiber Work (Fating Work) <input type="checkbox"/> Insurance 2 <input checked="" type="checkbox"/>	Total CO 2 = 4
FA 2 →	<input checked="" type="checkbox"/> 1 Agriculture Engineering <input type="checkbox"/> Handicraft 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Typing <input type="checkbox"/> Music 2 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 1 Art of Decoration <input type="checkbox"/> Singing 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Science of Health <input type="checkbox"/> Sculpture 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 History <input type="checkbox"/> Clay Toy Making 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Zoology <input type="checkbox"/> Wood Craft 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Welding <input type="checkbox"/> Bookcraft 2 <input checked="" type="checkbox"/>	Total FA 2 = 5
HS 2 →	<input type="checkbox"/> 1 Veterinary Science <input type="checkbox"/> Embroidery 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Commemorial Mathematics <input type="checkbox"/> Toy Making 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Textile Designing <input type="checkbox"/> Knitting 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Cooking <input type="checkbox"/> Child Care 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Geography <input type="checkbox"/> Sewing 2 <input type="checkbox"/>	<input type="checkbox"/> Child Development 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Engineering-Drawing <input type="checkbox"/> Kitchen Garden 2 <input type="checkbox"/>	Total HS 2 = 2
HU 2 →	<input checked="" type="checkbox"/> 1 Agricultural Botany <input type="checkbox"/> Philosophy 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Business Correspondence <input type="checkbox"/> Sanskrit 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Architecture <input type="checkbox"/> Sociology 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Home Management <input type="checkbox"/> Psychology 2 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 1 Economic <input type="checkbox"/> Education 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Meteorology <input type="checkbox"/> Provincial Language 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Radio Engineering <input type="checkbox"/> Civics 2 <input type="checkbox"/>	Total HU 2 = 3
SC 2 →	<input type="checkbox"/> 1 Rural Sociology <input type="checkbox"/> Disease & Bacteriology 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Shorthand <input type="checkbox"/> Surgery 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Painting <input type="checkbox"/> Science of Health 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Family Relation <input type="checkbox"/> Anthropology 2 <input type="checkbox"/>	<input type="checkbox"/> General Science 2 <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 1 Science of Atoms <input type="checkbox"/> Physics 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Applied Mathematics <input type="checkbox"/> Veterinary Science 2 <input type="checkbox"/>	Total SC 2 = 3
TE 2 →	<input checked="" type="checkbox"/> 1 Agricultural Irrigation Science <input type="checkbox"/> Civil Engineering 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Principles of Commerce <input type="checkbox"/> Mechanical Engineering 2 <input type="checkbox"/>	<input type="checkbox"/> 1 Modern Art <input type="checkbox"/> Science of Metals 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Home Decoration <input type="checkbox"/> Physics 2 <input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Human Science <input type="checkbox"/> General Technology 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Mathematics <input type="checkbox"/> Engineering Trade 2 <input type="checkbox"/>	<input checked="" type="checkbox"/> 1 Main Elements of Indian Technology <input type="checkbox"/> Radio/TV Engineering 2 <input type="checkbox"/>	Total TE 2 = 2
TOTAL →	AG 1 = 3	CO 1 = 3	FA 1 = 3	HS 1 = 2	HU 1 = 3	SC 1 = 3	TE 1 = 1	

Raw Scores of Educational Areas of Interest

Educational Areas	AG	CO	FA	HS	HU	SC	TE
	AG ₁ + AG ₂	CO ₁ + CO ₂	FA ₁ + FA ₂	HS ₁ + HS ₂	HU ₁ + HU ₂	SC ₁ + SC ₂	TE ₁ + TE ₂
Raw Scores	3 + 2	3 + 4	3 + 5	2 + 2	3 + 3	3 + 3	1 + 2

5 7 8 **Profile** 4 6 6 3

Stanine	Interest Area →	Raw Score	AG	CO	FA	HS	HU	SC	TE
	Interest group ↓								
IX VIII VII	High Interest	14	•	•	•	•	•	•	•
		13	•	•	•	•	•	•	•
		12	•	•	•	•	•	•	•
		11	•	•	•	•	•	•	•
VI	Above Average Interest	10	•	•	•	•	•	•	•
		9	•	•	•	•	•	•	•
		8	•	•	•	•	•	•	•
		7	•	•	•	•	•	•	•
V IV	Average Interest	6	•	•	•	•	•	•	•
		5	•	•	•	•	•	•	•
		4	•	•	•	•	•	•	•
		3	•	•	•	•	•	•	•
III II	Below Average Interest	2	•	•	•	•	•	•	•
		1	•	•	•	•	•	•	•
I	Low Interest	0	•	•	•	•	•	•	•

[A] General Report

1. Main interest-area.....
2. Second interest-area.....
3. Third interest-area.....
4. Least interest-area.....

[B] Special Report

1. High interest..... FA
2. Above average interest..... CO
3. Average interest..... HS
4. Below average interest..... TE
5. Low interest.....

Experiment No :-

4

Topic :- Learning Curve Test

Experimenter :- Preetna Meshram

Materials :- 1) stop watch

2) pencil

3) Eraser

4) practical pages.

Date :- 24/02/2024

Theoretical Background of the Experiment :-

Learning is a life long process and the understanding gained depends on the extent of practice and efforts from the learner. Learning process involves the cognitive ability to grasp and process the information in order to utilize the knowledge effectively.

Learning is a process by which the learning capacity continuously evolves with time. Learning can happen outside of typical learning environments such as in school or institutes of higher education.

The term "learning curve" came into use in the early 20th century. Dr. Hermann Ebbinghaus described this theory in 1885.

Later, Arthur Bills described the learning curve in his paper "General experimental psychology". He says the learning curve is a graphical device

of picturing the rate of improvement in terms of a given criterion of efficiency as a result of practice.

Learning curve is defined as the correlation between a learner's performance on a task or activity and the number of attempts or time required to complete the activity.

Learning curve is a mathematical concept that graphically depicts how a process is improved over time due to learning and increased proficiency.

There will be specific periods for each activity where a small amount of practice will yield massive improvement in output and others where even minor improvements will require many hours of hard work.

This variance in the relationship between practice and proficiency over time is called 'learning curve test'.

Aim of the Experiments :-

The learning curve is a key concept in understanding the learning process of an individual. It graphically represents the evaluation of a learner's performance over time, based on practice and experience.

The learning curve theory is a way to understand the improved performance of an employee or investment over time. The idea is that the more an employee does something, the better they will get at it, which translates to lower cost and higher output in the long term.

The first person to describe the learning curve was Herman Ebbinghaus in 1885, in the field of the psychology of learning.

The learning curve helps track training progress, improve productivity, and predict learners performance and improvement over time.

Procedure of Experiment :-

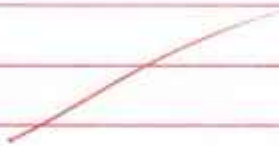
- 1) First of all, make the child sit comfortably and explain the rules of observing the learning curve test.
- 2) asked to test further by looking at the no given in front of the letters.
- 3) start the timer for 1 minute and test.
- 4) stop the timer in 1 minute. see how many letters are followed by the correct number according to chart in 1 minute.
- 5) put a slash (i) in front of the letter, and see how many correct values are written and how many wrong ones.
- 6) Note correct and wrong values in observation table.
- 7) Try this process again in 2nd trials for 1 min. stop the timer and put 2 slash (ii) see how many wrong marks and how many correct marks.

8) Note these in the observation table.

9) Try it for 15 minutes and make 15 slash at 15th trials and note down in the observation table.

10) Look at the values of correct answer and wrong answer the observation table and draw a Bar-graph.

11) plot the graph in x and y axis for correct and wrong answers and plot the points and see what this learning curve is saying about children learning.



Observation Table

सूची :- क म न श ट क्ष र प ह च ग
 4 7 11 5 3 1 6 10 8 2 9

च	ह	च	(//////)	प	ह	(//////)
कु	न	11(//)	न	च	न	
क्ष	ट	प	10(//)	श	म	(//////)
प	(//////)	ग	श	कु	3(//)	ट
न	ग	र	6(//)	ट	श	(//////)
र	(//////)	क्ष	1(////)	न	क्ष	(//////)
श	ट	कु	4(////)	प	ह	
च	(//////)	कु	ग	न	11(////)	प

प्रश्नसंख्या	अवधान	संख्या	कुल
1	2	2	4
2	2	3	5
3	2	3	5
4	2	2	4
5	2	1	3
6	4	2	6
7	3	2	5
8	4	2	6
9	8	3	11
10	10	3	13
11	6	1	7
12	7	0	7
13	11	1	12
14	11	0	11
15	25	0	25

A	C	R	S	T	E	N	P	B	D	M	G
1	5	3	8	9	6	11	14	2	4	15	10

S		A		C	(//)	T		G	
T		T	(/)	D		M	(//)	R	
B	(//)	M		S	(//)	T		P	(/)
C		R	(//)	A		P	(//)	D	
G		N	(/)	R		S		A	(//)
C	(//)	R		A		T	(/)	R	
T		E		M	(//)	G		S	(//)
B	(//)	D		P		T		C	

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Trial	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Correct Numbers	3	4	4	5	5	3	6	6	5	8	12	8	8	7	20
Incorrect Numbers	4	4	3	2	2	2	2	2	2	1	2	0	0	1	0

INTROSPECTION Report

In this experiment the aim of the experiment is to study the nature of score distribution and progress in efficiency of learning. Practice makes perfect. A thing can always be done better not only the second time but each succeeding time by trying.

A learning curve measures the rate at which a person learns a new skill. A learning curve is measured and calculated by determining the amount of time it will take to perform a task.

Then, a learning curve assigns an improvement value to identify the rate of efficiency the task performer will incur as they learn and becomes more proficient at the task.

CONCLUSION

- 1) Learning is modification of behaviour.
- 2) Learning is related with circumstances.
- 3) Learning depends upon experiences.
- 4) Learning may be temporary or permanent.
- 5) Change in behaviour due to fear, fatigue or illness is not learning.

Educational Applications

- 1) Learning curve indicates that Individual difference can be taken care of in educating the children.
- 2) Learning curve focuses the essentially of improvement in teaching methods.
- 3) Learning curve helps the individual in self appraisal.
- 4) It helps in the selection of learning materials.
- 5) The learning curve helps training progress, improve productivity, and predict learner's performance and improvement over time.
- 6) It helps the learners develop sense of self efficacy and communicate positive achievements to learners.

Experiment No :-

5

Topic :- span of Attention

Experimenter :- Priyanka Meekam

aid :-

1) Tachistoscope

2) Meaningful Words
chits

3) Meaningless Words
chits

Date :-

8/04/2024

Theoretical Background of the Experiments

An advance was made on Hamilton's method by Jevons the logician. However, real scientific experimental work on the problem was started by J. M. Cattell, who used the tachistoscope for this experiment.

Tachistoscope is an apparatus designed to expose objects for a brief space of time and to observe the span of visual apprehension. After Cattell, a number of experiments have studied the span of attention under different conditions.

Later experimenters have distinguished between attention and span of apprehension and also found that span of apprehensions is greater than span of attention.

Tachistoscope

1) An apparatus for the brief exposure of visual stimuli that is used in the study of learning, attention, and perception.

2) A tachistoscope is a device that displays an image for a specific amount of time. It can be used to increase recognition speed, to show something too fast to be consciously recognized, or to test which elements of an image are memorable.

3) Projection tachistoscopes used as slide of transparency projector equipped with the mechanical shutter system typical of a camera.

4) The slide is loaded, the shutter locked open, and focusing and alignment are adjusted then the shutter is closed when ready for the test a shutter speed is selected and the shutter is tripped normally.

Aim of the Experiment

Span of Attention is the amount of concentrated time one can spend on a task without becoming distracted. Having a long attention span is important for individuals focus, learn how new information and skills, and organize such information in the brain.

Attention is defined as the process which compels the individuals to select some particular stimulus according to his interest and attitude out of the multiplicity of stimuli present in the environment.

Thus this is a short selective activity of consciousness as a process of getting an object of thought clearly before the mind.

Types of attention

1) Analytical attention :-

When our attention is directed towards some of the analysis of problem and to find out the perspective for that occurring presently.

2) Habitual attention :-

This type of attention is determined by habits.

3) Ideational attention :-

When the attention is directed towards some image or status or structure selected to object.

4) Involuntary attention :-

Here the attention is directed suddenly toward the stimulus, it hinders the process of goal seeking sometimes but not always
Ex - attention is attracted to a song while studying.

5) Involuntary attention :-

When the attention is diverted unwillingly to an object.

Factors Affecting Attention

External factors :-

1) Movement \Rightarrow A moving object draws our attention more easily than a stationary object.

2) Intensity \Rightarrow More intense light, sound or smell draws our attention more easily than less intense one.

3) Size \Rightarrow A bigger or a smaller objects draw the attention of people very easily than average level size of any object.

Internal Factors :-

- 1) Interest \Rightarrow objects of our interest draw our attention immediately.
- 2) Motives \Rightarrow Motives are powerful forces which makes us to divert our attention.
- 3) Mental set \Rightarrow our set or readiness of mind is very important in attending to any stimulus.
- 4) Emotional state \Rightarrow attention is disturbed during emotional state. It also affects to any perception.

Aim :- To determine the span of attention for the following visual stimuli

i) Meaningful words

ii) Non Meaningful words

Method :-

1) Participant details :-

a) Name ⇒ Renu Sarda

b) Age ⇒ 27

c) Gender ⇒ Female

d) Education ⇒ B.ed appearing

2) Experimenter details :-

a) Name ⇒ Preetna Meshram

b) Age ⇒ 30

c) sex → Female

d) Education → B.Ed Appearing

plan :- use tachistoscope to present the stimulus for a fraction of second to find out the span of attention for visual stimuli.

ADMINISTRATION

INSTRUCTIONS :-

- 1) Get prepared when ready signal is given.
- 2) As soon as say 'yes' focus your attention on screen on which you will see some meaningless and non-meaningful words.
- 3) Whatever you see report it immediately.

PRECAUTIONS :-

- 1) Room temperature should be maintained.
- 2) Proper lighting should be there.
- 3) There should be a pin drop silence.

Procedure

1) The experiment was conducted in a secluded room to ensure absence of distractions.

2) There was proper amount of light and temperature and the subject was greeted warmly.

3) once settled, the subject was given a introduction of what the experiment is like, how it would proceed and what was expected to them.

4) Demonstration of one slide was exhibited so they may have an expectancy of speed.

5) Space for doubts was provided. with a clear understanding.

6) The experiment was initiated and carried forward smoothly from beginning to end with ease.

7) Good support was found with the subject and he was made to sit comfortably.

8) The subject is seated in front of the tachistoscope such that he has a good view of the window.

9) The experimenter sits on the other side of the apparatus.

10) After connecting with the screen a card of two words first shown.

11) The subject response was noted in the result table. Similarly all the cards were shown.

1) Meaningful Words :-

Sr. No	No. of letters	Meaningful words	Answered by students	Correct Incorrect
1	2	By	By	✓
2		At	At	✓
3		As	As	✓
4	3	fly	kly	x
5		Gas	Gas	✓
6		Bat	Bat	✓
7	4	Bank	Bank	✓
8		Base	Base	✓
9		CROWN	crow	✓
10	5	Alone	alone	✓
11		Below	Below	✓
12		Adult	gdult	x
13	6	Advice	Advice	✓
14		Decide	Decide	✓
15		closed	closed	✓
16	7	Century	Century	✓
17		chapter	helicopter	x
18		Central	Central	✓
19	8	computer	computer	✓
20		Baseball	chase ball	x
21		Accuracy	Accuracy	✓

Calculation :-

$$\underline{\text{Total word} = 21}$$

$$\underline{\text{Correct word} = 17}$$

$$\underline{\text{Incorrect word} = 4}$$

% of correct words

$$\Rightarrow \frac{17}{21} \times 100$$

$$\Rightarrow \underline{80.95\%}$$

% of incorrect words

$$\Rightarrow \frac{4}{21} \times 100$$

$$\Rightarrow \underline{19.04\%}$$

2) Meaningless Words :-

Sl. No	No. of letters	Meaningless Words	Corrected by students	Correct/Incorrect
1	2	ki	gi	x
2		ue	ee	x
3		ip	ip	✓
4	3	cep	cep	✓
5		bis	gis	x
6		bel	gel	x
7	4	Zany	cany	x
8		daft	craft	x
9		Flam	Glam	x
10	5	Joony	Joony	✓
11		Wacky	Jacky	x
12		nutt4	nutt4	✓
13	6	Futile	Futile	✓
14		Babble	Babble	✓
15		Hollow	follow	x
16	7	asinine	basine	x
17		Fatuous	disatous	x
18		lanatic	lanatic	✓
19	8	claptrap	Japtop	x
20		mindless	mindless	✓
21		buncombe	Honycomb	x

Calculation :-

$$\underline{\text{Total words} = 21}$$

$$\underline{\text{Correct words} = 13}$$

$$\underline{\text{Incorrect words} = 8}$$

% of correct words

$$\Rightarrow \frac{13}{21} \times 100$$

$$\Rightarrow \underline{61.90 \%}$$

% of Incorrect words

$$\Rightarrow \frac{8}{21} \times 100$$

$$\Rightarrow \underline{38.09 \%}$$

Observational Report

When the subject was experimentally
observed at first subject to too
much interest in the first three or
four cards then he became nervous
is saying words. He was saying
meaningful word easily but he
could not speak non-meaningful
word easily.

Introspection Report

Subject 1 :-

" It was a great experience, I was able to focus on the screen and visualize the numbers. It was too fast but I could catch the numbers as they were repeating."

Subject 2 :-

" It was fun in start but after the level got up it was difficult to understand. In numbers it was easy the difficulty was in alphabets it was hard to look and speak on time."

Conclusion

1) The hypothesis is proved correct as the span of attention for meaningful words is more than the non-meaningful words.

2) Knowing about the span of attention suggestion should be given to increase it by different method.

3) Teaching materials can be prepared more better which can increase the span of attention they should be interesting and attractive so that it may attract the attention.

4) In conclusion, the experiment was successful and the hypothesis was proven true.

5) It was an easy experiment to do with not many factors included and with minimal interference.

Educational Applications

1) It is necessary to pay focused attention to something in order to process it and commit it to long-term memory.

2) Attention also influences motivation and it is easier for the brain to retain information that is motivating.

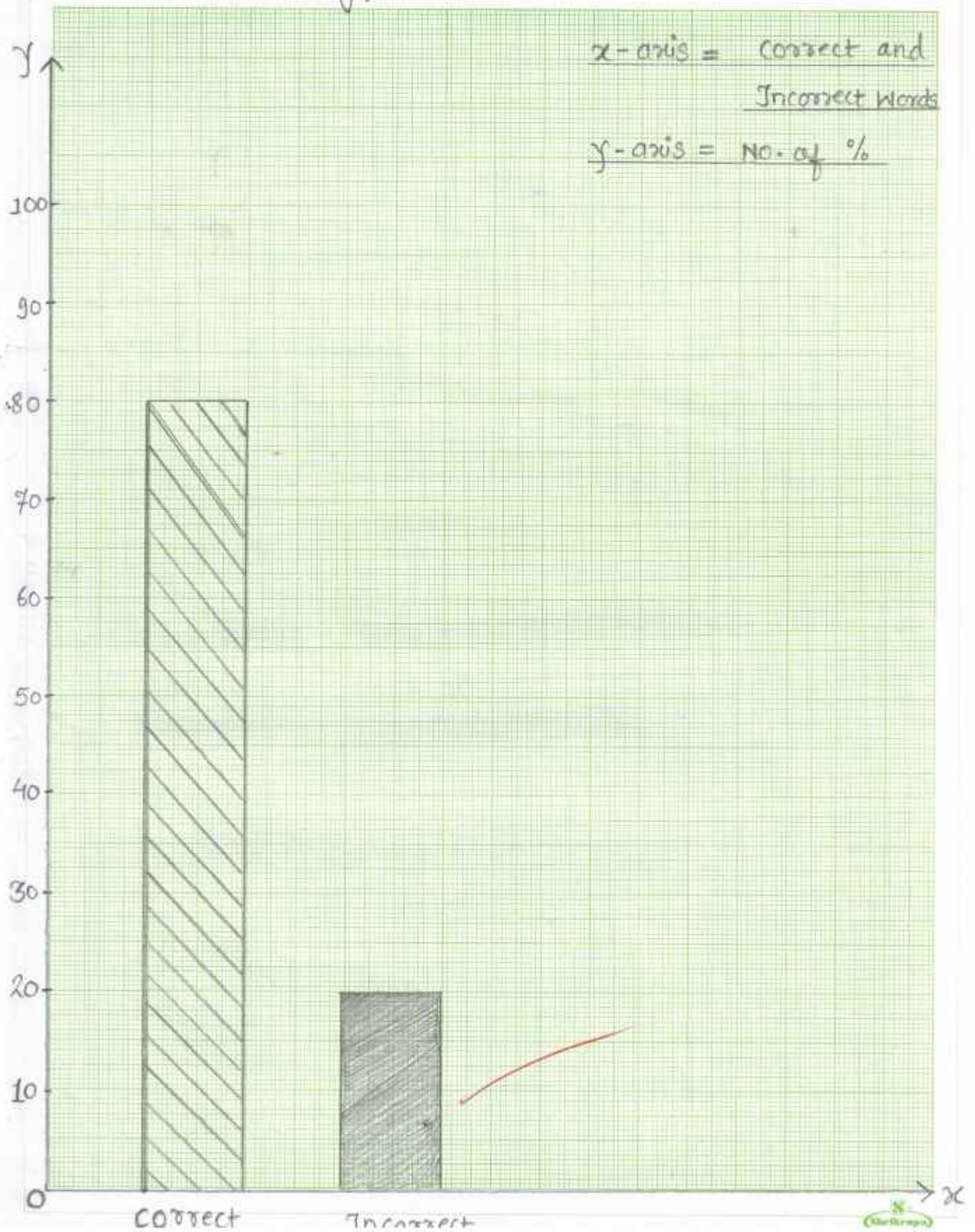
3) Students, having attention skill is an important part of successful learning.

4) When learners concentrate their attention on what is being taught the learning is more effective.

5) span of attention studies show that students with shorter attention spans tend to perform worse on tests, struggle to retain information long-term and have a harder time connecting disparate ideas into cohesive understanding.

Meaningful Words

Date.....

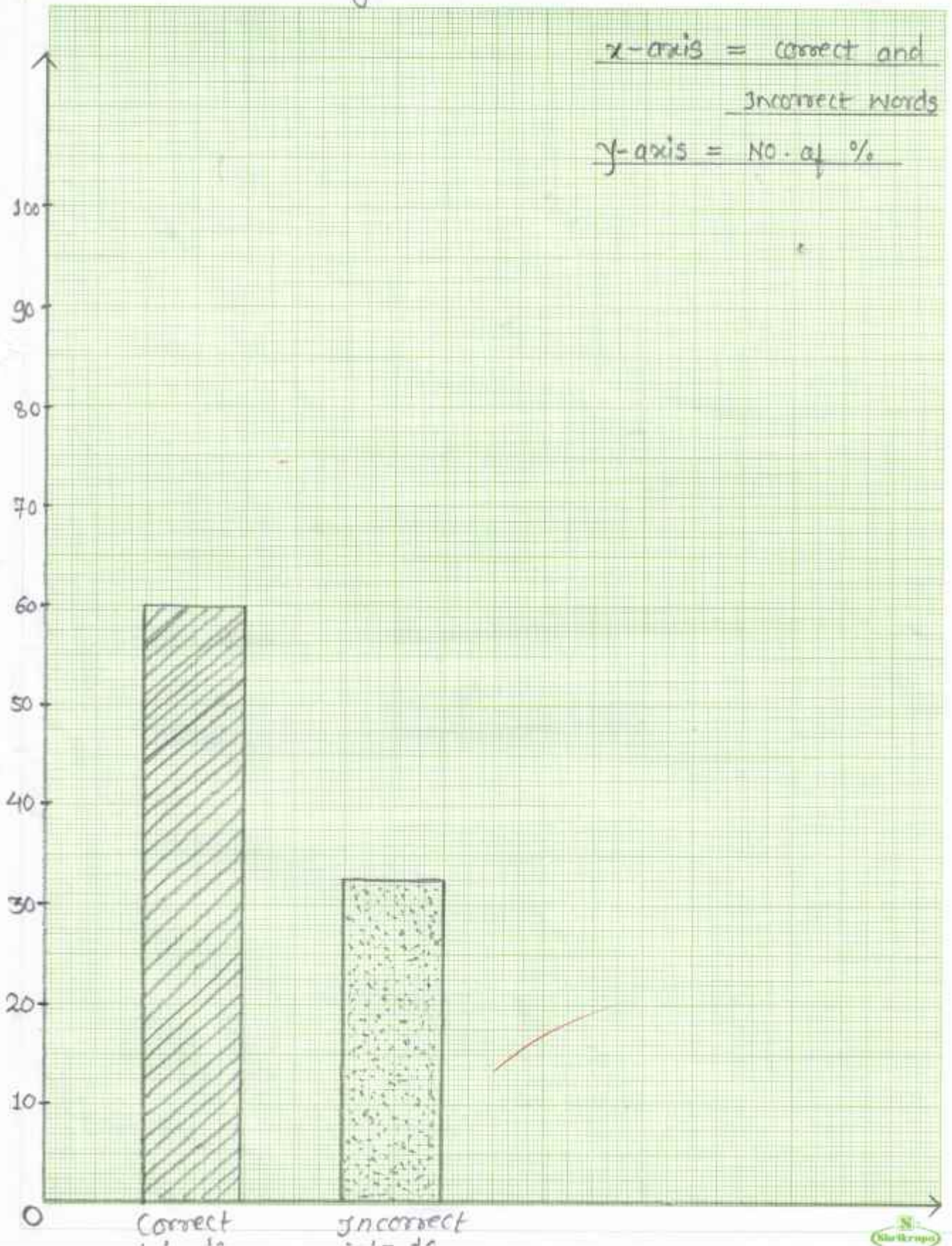


Meaningless Words

Date.....

x-axis = correct and incorrect words

y-axis = NO. of %



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Meaningless
Words

Meaningful
Words

TOPIC

Date: 30/03/24

Page No.:

HEELADEVI COLLEGE Of EDUCATION

WADI NAGPUR - 23

GPC - 1

• GUEST LECTURE
PERSONALITY DEVELOPMENT

- TAKEN BY ARCHANA MAKODE
MAM

- MADE BY
PRIYA P. PATHAK
(B.ED IInd SEM)



INDEX

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Guest lecture on Personality Development

Sheela Devi college of education arranged guest lecture of the topic Personality development. The guest lecture was taken by Archana Makode Ma'am. She told us that about the personality development how we improve our personality. Personality is very important part of person. Personality development helps an individual to gain the success.

Introduction

Personality refers to the enduring characteristics and behaviour that comprise a person's unique adjustment to life, including major traits, interests, drives,

Values, self-concept, abilities and emotional patterns. Various theories explain the structure and development of personality in different ways, but all agree that the personality helps determine behaviour.

The field of personality psychology studies the nature and definition of personality, as well as its development, structure and trait constructs, dynamic processes variations (with emphasis on enduring and stable individual differences) and maladaptive forms.

Definition

Personality Development is defined as a process of developing and enhancing one's personality. Personality development helps an individual to gain confidence and high self-esteem.

Determinants of Personality

1. Heredity

Heredity refers to factors that are determined once an individual is born. An individual's physique, attractiveness, body type, complexion, body weight, and other physical characteristics depend on his/her parents' biological makeup.

2. Environment

The environment to which an individual is subjected to during his growing years plays an important role in determining his/her personality. The varied cultures in which we are brought up and our family backgrounds have a crucial role in shaping our personalities.

3. Situation

An individual's personality also changes with current circumstances and situations. An individual would behave in a different way when he behaves based on the immediate situation or problems.

Importance of Personality Development

An individual's personality refers to his/her own appearance, characteristics, attitude, mindset and behaviour with others.

1. Personality development grooming an individual and helps him make a mark of his/her own. Individuals need to have a style of their own for others to follow them. Do not blindly copy others you need to set an

example for people around personality development not only makes you look at the brighter sides of life. face even the worst situations with a smile.

3. Personality development helps you develop a positive attitude in life. An individual with a negative attitude finds a problem around, analyze the whole situation and try to find an appropriate solution for the same.

Personality Development Tips

Let us go through some tips for enhancing one's personality

Smile a lot - Nothing works better than a big smile when it comes to interacting with people around. Do not forget to flash your trillion dollar smile quite often.

Believe me, it works! As they say "a smile is a curve that sets everything straight". A smiling face wins even the toughest soul. Wear your smile while interacting with others. Smile not only keeps in enhancing an individual's personality but also winning others' heart.

Think positive - It is really essential to think positive. Remember there is light at the end of every dark tunnel. Do not always think negative as it not only acts as a demotivating factor but also makes an individual frustrated. Don't get upset over minor things. Be a little flexible and always look at the broader perspectives of life.

Dress Sensibly - Dressing sensibly and smartly go a long way in honing one's personality. One needs to dress according to the occasion. How would a female look if she wears a saree to a discotheque? Obviously ridiculous! No matter how expensive your saree is, you can't wear it to a night club or a pub where everyone is dressed in smart casuals. Price has nothing to do with smart dressing.

An individual who is well dressed is respected and liked by all. No one would take you seriously if you do not wear suitable clothes fitting with occasions. Do take care of the fit dress as well. An individual should wear clothes as per his / her body.

Be soft spoken - Do not always find faults in others. Fighting and quarrelling lead to no solution. Be polite with others. Be very careful of what you speak. Avoid being rude and short tempered.

Leave your ego behind - An individual needs to hide his ego everywhere he goes. Be if office or workplace you need a leave your ego behind if you wish to win appreciation from others. An individual who is good from within is loved by all.

Avoid Backbiting - Backstabbing and criticizing people are negative traits which work against an individual's personality. Learn to appreciate others. If someone has done some extraordinary task, do not forget to give a pat on

Believe me; the other person will speak high of you even when you are not around.

- Help others - Do not always think of helping others share whatever you know. Remember no one can steal your knowledge. Always help others.
- Confidence - Confidence is the key to a positive personality. Exude confidence and positive aura wherever you go.
- A patient listener - Be a patient listener. Never interrupt when others are speaking. Try to imbibe good qualities of others.

Importance of character in personality development

Let us first understand what does character mean?

Character refers to the sum of an individual's qualities and characteristics which differentiate him/her from others. An individual's character is actually an amalgamation of his/her qualities which makes him unique and helps him stand apart from the rest.

Character plays an essential role in personality development

Remember personality development is not only looking good and wearing expensive brands. It is also about developing one's inner self and being a good human being more than anyone else.

you are answerable to yourself.
Do not do anything which
yourself are not convinced.

An individual is nervous only
when he is ashamed of what
he is doing character is something
which an individual is born
with and seldom changes with
times as against behaviour.
Honesty is an individual's inherent
character which would never change
irrespective of his / her
situation or circumstances.

A person with a good character
finds acceptance whenever he
goes and respected by all
Character includes traits such
as :-

- honesty
- leadership

- Trust
- Courage
- Patience

A good character helps you develop a winning personality. In other words, a good character is the backbone of a magnetic personality which attracts other people.

You need to develop a sense of loyalty and attachment towards your organization. Commitment has to come from within.

Don't just work for money.

Don't attend office just to fulfill your job responsibilities.

Not everyone can be a good leader. You need to have leadership qualities to be able to lead a team well.

An individual with a good character would in turn have a good personality. If you are extremely good looking but do not know how to behave, don't be surprised if you are ignored by others. Nothing is more important than your character. Life is nothing without ethics and values.

Personality types

Different types of personality

1. The Duty fulfiller

Such individuals take their role and responsibilities seriously and perform whatever tasks are assigned to them. Duty fulfillers are serious individuals and believe in honesty and peaceful living.

2. The Mechanic

As the name suggest such individuals are inclined towards machinery like aeroplane, motorcycling, cars, races and so on.

They are interested to know why and how certain things function. Theories do not interest them.

3. The Nurturer

Nurturer are individuals with a large heart. For them, the happiness of others is more important than their own interests. Such individuals actually live for others.

They love to give happiness to others. They want to be a reason of someone's smile.

Sender (Source or Encoder)

A person or an event which provides current information and transmit the same correctly and clearly.

If the source is a person. It is called a sender.

(Encoding - The process of using symbol or diagram to express the ideas or feelings.)

4. The Artist

Artists have an eye for natural beauty and creativity. Rather than worrying about future, they believe in living for the moment. So individuals are extremely cool headed and do not get into unnecessary fights and troubles. They do not blindly copy others and aspire to create a style of their own.

5. The Protector

You would find such a personality type in very few people, making it a very rare personality type. Protectors are systematic individuals who want the best systems to get things done. They often think intuitively.

6. The Idealist

Such people have strong set of values and ethics. They find happiness in

helping others. They consider themselves lucky if they got an opportunity to help others.

7. The Scientist

Such individuals believe in careful and strategic planning. They are good observers who believe in constantly gathering information and upgrade their existing knowledge. Scientists are extremely intelligent people who have a very sharp & analytical mind.

8. The Doer

Individuals with such a personality type are ones who believe in quick actions and immediate results. They enjoy taking risks in life and fulfill tasks assigned to them in the shortest span possible.

9. The Guardian

Such individuals are perfectionist who ensure that everything everywhere is going on smoothly. They are mature individuals who have a clear set of standards.

10. The Performer

Performer strive hard to grab attention of others and love being the center of attention. They are fun loving individuals who enjoy fun and excitement in life.

11. The Inspirer

Inspirers are talented individuals and often act as a role model of others. They have great people skills.

12. The Giver

Individuals with "The Giver" personality type enjoy the company of others and do not prefer staying alone.

13. The Executive

Such individuals are born to lead and make very good leaders. They love taking charge and are good decision makers!

How Personality Development Benefit Students ?

In simple words, personality development is a process that aims to make positive changes in one's personality. This process helps an individual to discover innate skills / strengths. However, those changes do not occur overnight because this process takes time. And mostly the results depends on various factors like individuals behaviour, thinking and response patterns, etc. Before we discuss how we develop personality, let's understand how personality development affects an individual.

Studies have proved some fascinating benefits of personality development (through activities for personality development). Here's a look at these :-

- A healthy personality can have a positive impact on academic performance.
- Good personality promotes well-being.
- Contributes to holistic development.

Better academic performance
↓

promotes well-being
↓

supports holistic development

How can schools support the personality development of students?

For a student's holistic development schools plan several activities for personality development.

In addition, many top institutions also delve into crucial questions like how to make personality.

Goals of Personality Development

As per the ministry of skill development, entrepreneurship, youth affairs and sports, government of India, personality development for the students should have some short and long term goals. They are as follows.

Short-term goals :-

- Develop leadership qualities
- To realise their true potentials
- Foster a spirit of collaboration

- Promote the ability to take risks and develop resilience.

long-term goals.

- Contribute to nation-building

- Accept the values of democracy and secularism.

- Support the nation's program

- Induce a sense of social harmony

Activities for the Personality Development.

Artistic Activities for Self-expression

There are many proven benefits of arts and crafts for children. You can find some credible answers to the questions, how do we develop personality by simply indulging in some simple art activities?

Paintings, drawing, crafting, etc. help enhance personal skills at the elementary level. In addition, it also offers excellent opportunities for young students to unleash their creative sides. These activities help children / students to develop a strong sense of self. This in turn, makes them more expressive about their thoughts. Young students enjoy painting, sketching, paper folding, etc. However, middle and high school students mostly love creative activities in the classroom. Here is ex of activity.

- Let all students draw a random picture that represent their thought process and an imaginative personality. One by one, all students can look at the shuffled pictures and guess the person who drew them. Eventually, each student can explain reason behind this particular pattern linking these to their thinking styles, along with short explanation.

Top 09 students personal development tips (for teachers)

1. Encourage students to participate in activities, in sessions, classroom activities, etc.
2. Help them to discover their strengths.
3. Let students decide on small goals.
4. Focus on creating a confident personality through adequate opportunities.
5. Share constructive feedback.
6. Develop a growth mindset.
7. Always keep negativity at bay.
8. Do not let students shy away from uncomfortable topics.
9. Keep them engaged with the touch of humour.

Report Writing

Introduction

Personality development is a journey of self-discovery and growth, encompassing various aspects of one's being. This report aims to delve into the intricacies of personality development, exploring its significance, factors influencing it, and strategies for fostering personal growth.

Significance of Personality Development

A well-developed personality is crucial for success in both personal and professional spheres. It influences how individuals interact with others, handle challenges and navigate through life's complexities. Moreover, a strong personality fosters resilience, adaptability, and a positive outlook towards life.

SHILLA DEVI COLLEGE OF EDUCATION
B.ED. FIRST SEMESTER (2023-2024)
An Assignment Project on EPC-3



ON STAGE PROGRAM
SONG

SUBMITTED TO:

SUBMITTED BY:

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B.ed I semester

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Introduction

The origin of music itself is very difficult to determine because in all probability, it is likely to have begun with singing and clapping or breathing the hands on different surfaces, for which there is no of course no archaeological record.

However, between at least 60,000 and 30,000 years ago, ancient humans experienced a type of cultural 'explosion' - they started creating art in the form of paintings on ~~some~~ cave walls, jewellery and ornaments, and to bury their dead ceremonially. If we assume that these new forms of behaviour reflect the emergence of intentionality, then music as we know it must also have emerged at least during this period.

Prehistoric Music

The earliest forms of music were probably drum-based, percussive instruments being the most readily available at the time. These simplest of simple instruments are thought to have been used in religious ceremonies as representations of animals. There was no notation or writing of this kind of 'music' and its sounds can only be extrapolated from the music of American Indians and African natives who still adhere to some of the ancient religious practices.

As for the more advanced instruments, their evolution was slow and steady. It is known that by 4000 BCE the Egyptians had created harps and flutes, and by 3500 BCE lyres and double-reeded clarinets had been developed.

In Denmark, by 2500 BCE an early form of the trumpet had been developed. This trumpet is what is now known as a "natural trumpet". It is valveless, and depends completely on manipulation of the lips to change pitch.

One of the most popular instrument today was created in 1500 BCE by the Hittites. I am talking about the regular guitar. This was a great step, the use of frets to change the pitch of a vibrating string would lead to later instruments such as the violin and harpsichord.

In 1800 BCE the first recovered piece of recorded music was found. It was written in cuneiforms and was a religious hymn. It should be noted that cuneiforms is not a type of musical notation.

By 700 BCE there are records of songs that includes vocals with instruments. This added a whole new dimension to music: - accompaniment.

Oldest Musical Instrument

Oldest musical instrument ever discovered is believed to be the Divje Babe flute, discovered in a cave in Slovenia in 1995, though this has been disputed. The item is a fragment of the femur of a cave bear, which has been dated at 60,000, 43,000 years old, which had been pierced with spaced holes. Scientists who could not accept the possibility that Neanderthals were playing music rejected the claim and said that the perfectly spaced and neatly carved holes are in fact the result of the bone fragment having been chewed by an animal. However a general consensus that the view of the Neanderthals from subhuman brutes to more sophisticated humans is changing.

In 2008, another discovery was made — a bone flute in the Hohle Fels cave near Ulm in Germany, dating back 43,000 years. The five-holed flute has a V-shaped mouthpiece and is made from a rufous-winged woodpecker bone. It was one of several similar instruments found in the area, with others dating back to 35,000 years ago and made from a rufous-winged woodpecker bone.

It was one of several similar instruments found in the area, with others dating back in 35,000 years ago and made from mammoth ivory. The mammoth-ivory flutes would have been especially challenging to make. Using only stone tools the flute maker would have had to split a section of curved ivory along its natural grain. The two halves would then have been hollowed out, carved and fitted together with an airtight seal.

The cave in southern Germany contains early evidence for the recolonization of Europe by Homo sapiens and in announcing the discovery, scientists suggested that the "finds demonstrate the presence of a well established musical tradition at the time when modern humans colonized Europe". They suggested that this may have helped the species to expand both in numbers and in geographical range.

Those who have rejected the finding of the Divje Babe flute have claimed that music modern humans the edge over the Neanderthals. However, looking at the images of the Divje Babe flute which dates back to the time of the Neanderthals, it seems quite ridiculous to assume that it was made by the tooth holes of Carnivores.

AIMS AND OBJECTIVE OF MUSIC EDUCATION

1. To provide a balanced and well-defined program of creative, performing as well as listening activities of students.

2. To developed students musical literacy and musical sense through joining music activities.

3. To develop all students basic skills in instrument playing in S.I so as to enhance.

S.2 to S.3 students' ability to a higher level through the self-development plan.

4. With the help of application of I.T., subject curriculum may be exchanded.

5. To enrich students' knowledge of music that may cope with other subjects.

6. To develop students' creativity by adding in music composing in subject learning.

7. To provide more opportunity to appreciate good music of the world.

8. To provide assessment through homework.

Objectives of Music Teaching

1. To enhance standard of vocal music.
2. To arise the learning interest area in instrumental learning.
3. To arise standards of music appreciation.
4. To developed the student's mental power inner hearing, musical memory and recognition.
5. To encourage students to use music to communicate with their classmates as other kind of communication media.
6. To expose students to music of different culture. Students will be able to identify and distinguish the instruments of an orchestra as well as the special musical elements that characterize

7. To stimulate students interest in learning more musical knowledge and knowledge of other subjects as well as through subjects integration.
8. To enhance student's creativity through learning music composing.

Importance of Music in Daily life

In the course of history, music is the greatest creation of mankind. ~~The~~ Creativity in the pure and undiluted form is the true definition of Music. Music is an important part of our life as it is a way of expressing our feelings as well as emotions.

Some people consider music as a way to escape from the pain of life. It gives you relief and allows you to reduce the stress.

Music is a powerful therapy that will make you calm down and in the moment of joy, it will make you cheerful.

Further more, it develops the mind and boosts your self confidence. Music plays a more important role in our life than just being a source of entertainment.

Music is important for Creativity

Music is considered to be one of the best ways of enter a 'mind - wandering mode' which was discovered by neurologist Marcus Raichle in 2001. This is the state the brain enters into most easily and music is one of the ~~most~~ effective ways of allowing you to enter this mode. Music fuels the mind and thus it fuels our creativity. A creative mind allows to make great discoveries and innovations.

Music makes Learning more fun & Memorable

Music can make learning more fun and engaging, which is a great tool for memorization.

Music can help kids keep focus and remember things they learnt for a long time. For from being a distraction it helps people remember better. Evidence that music helps with memory has led to researchers to study more about the impact of music on people who suffer memory loss.

Music is an universal language

Musicians claim that with music you can communicate across cultural and linguistic boundaries in a ways that you cannot do with ordinary human experience.

Music brings people together :

Although music can certainly be played and listened to alone it is a powerful social magnet. There is something about listening to music or playing it with other people that makes you feel connected with those around you. The more we use music to bring us together, the more potential for increased empathy, social connections and ~~even~~ cooperation.

Music reduce stress and anxiety :

Research has shown that listening to music at least music with slow tempo and low pitch can calm people down even during highly stressful and painful event. It also has the ability to help with pain management for example during childbirth.

Music makes us Creative:

Music is a key to creativity. It helps you in improving your mind rigorously by making it more artistic and ingenious.

No matter what the great invention is, it requires art, creativity and imagination that is fulfilled by Music.

There is also proven that music has the potential to improve your listening as well as your understanding ability. When you hear a song you try to understand its lyrics and try to make out what the singer wants to convey through his song.

Understanding ability is enhanced, when a person listens to instrumental music and he uses his brain to understand the ability, message, conveyed by the musician, without the use of words.

Music makes you express your emotion :-

When you play some instrument then you usually play the music that reflects our thoughts or emotions. This way your brain convey the thoughts with the medium of music, without speaking a word. When we try to understand the music then as per a ~~use~~ research, it makes our mind more creative.

Music makes learning more pleasant.

Music is an extremely unique way to develop the capability of memorising. The best example to prove this ~~scien~~ sentence is that you can easily learn song rather than learning your syllabus. The reason behind learning a song quickly is that you enjoys music.

Whatever your mind enjoys it preserves it.

Indian Classical and Light Music in Educational Institutions - its importance, Popularization.

Music can be a social activity but it can also be a very spiritual experience.

Ancient Indians were deeply impressed by the spiritual power of music, and it is out of this that Indian classical music was born. So, for those who take it seriously, classical music involves single-minded devotion and lifelong commitment. But the thing about music is that you can take it as seriously or as casually as you like. It is a rewarding experience, no matter how deep or shallow your involvement. Most music has at least three main elements - melody, rhythm and harmony. Because of its contemplative, spiritual nature. Indian classical music is a solitary pursuit that focuses

mainly - on melodic development. In performance, rhythm also plays an important role, giving texture sensuality, and a sense of purpose to melody. Harmony in Indian classical music is mainly the result of the tanpura playing a combination of tonic and the fifth or fourth in a fixed pattern in the background, somewhat like an arpeggiated chord. Harmony in the Western sense, however, is ~~not~~ a part of traditional Indian music, and it is important not to look for it.

The Language of Music

One of my favorite things about Indian classical music is that you learn it very much the way you would learn a language. With language, once you have learned the basic notes, you are introduced to ragas, and then you are encouraged to start improvising and making your own melodies. It's really not that difficult to improvise melodies in a raga you are familiar with. I have nowhere near the level of talent it takes to become a performing artist, but I can make spontaneous music, and that's an inexhaustible source of delight.

The main thing in Indian classical music does is explore the melodic emotional potential of different ragas. About five hundred ragas are known or known of today. Sometimes ragas die out if people stop performing them, but then new ragas are born all the time, and some of them endure. So, the number of ragas is not fixed. Student learn all the

important ragas, then spend many years mastering the ragas of their choice.

Styles of Indian Classical Music.

There are two main styles of Indian classical music, Hindustani Classical Music and Carnatic Classical Music. Each of these styles has a unique set of instruments and sonic characteristics. The intention behind the music, however, is the same. Historically, in the early years, Indian music traditions would be carried on through a lineage known as a gharana (literally meaning 'family'). In the early 19th century, Gharana came to be formed by adhering to stylistic peculiarities and innovations of certain musicians by other musicians within their families or regions. The name chosen for each gharana usually reflected the kingdom or region to which the musicians came from to indicate their roots.

What is Raga?

Raga literally interpreted as "that which colors the mind," is the fundamental structure within Indian classic music. The easiest way for westerners to conceive of raga is as a distinct melodic form containing certain key movements, each embodying a particular personality of their own. The primary aspects of these movements, the standardized notes and the rhythm and time are combined to create unique musical possibilities, each personalized by their own embellishment techniques to complete a structural composition. Two more essential qualities are included. The *tala*, which refers to the cyclical system of beats and *rhythms*, the lyrics, which could be sung vocally or played on instruments through a non-verbal language.

Understanding raga Composition

A composition of Hindustani Classical Music is known as a bandish which literally means 'binding'. Each bandish consists of a unique blend of the five central elements in Indian classical music.

Notes (Swaras)

time (laya)

Rhythm (Tala)

Structure (raga)

Lyrics (Sah (Lahitya))

The composition is the face of the raga, defining its essence by bringing together all of its movements, parts and subtleties. There are two parts to a bandish, each containing two or three lines and lasting only around one to two minutes each within an extended performance.

The majority of the performance is left primarily for improvisation, which is based off the

Compositions in Indian Classical Music, each showcasing certain characteristics, phrases and musical personalities. But no raga performance will be played or heard exactly the same. They might have similar compositional structures, however they will always be played differently due to improvisation methods and the moods that effect how the musician performs.

Bismillah Khan
Bismillah Khan

The power of raga composition lies in its ability to evoke emotion that captivates listeners. Originating out of ancient Vedic recitation techniques, the spiritual significance behind Hindustani Classical Music as a whole derives from the philosophical idea of nada, the primordial vibration that all is created from. This "first sound" is associated with the prime cause of the universe and the origin of all manifestation.

Importance of Music

Music has a very important role in human life because every one like to listen music. The person who listens to music with pleasure in his life knows the importance of music in real-life world. If a person is interested in music, then that person is always happy in his life and remains stress-free in every problem. Listening to music gives peace and joy to the mind. Listening to music inspires a person to do something better in life.

Music is also heard in many festivals, events because it enhances the excitement of the events, every one likes to listen to their favorite music because music can not be just one topic, you can listen to music for many reasons, if your mind is very happy, then you can listen to the music.

of happiness, if you are angry
then music of displeasure,
if you are in love with
some one then you love music
as well as music of DJ in
marriage, parties also people
like to listen.

Many problems of a person's life
are pacified by music because
the mind and soul remain
cheerful after listening to
music.

Popular Genres of Music

Music segments into different categories.

Pop :- Pop music combines several sounds produced for a large audience.

Rhythm and Blues :-

As the name implies, this music combines two prominent styles - soul music delivered through rhymes.

Electronic music :- Electronic music

uses technology to develop special and unique sounds.

Rock :- This music originates from America and notable for its combination of heavy sounds and string instruments.

Hip-Hop music :- It is also known

as rap music, a piece of very popular music developed in the United States.

Indian Folk music : Very popular in India, folk music is traditional music.

Rabindra Sangeet : It refers to the song of love and devotion by Rabindranath Tagore, the first Indian Nobel laureate.

Bhangra : It is the form of music and dance that originated in Punjab.

Bhajans : These are devotional songs with religious or spiritual ideas.

Conclusion

The song of songs gives us an ideal picture of love and family, life and work. Joy in the shared work of the household is a central feature - almost as though sin had never happened. In the song, work has a beauty that is integrated into a wholesome and joyful life. The song shows us an ideal for which we should strive. Labour should be an act of love. Marriage and household relationships should support - and be supported by - work. Work is an essential element - and never crowd out - the most fundamental element of all: Love.

Shalonda
30/2/2024

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B.Ed. SEM II

EPC - 3

SHILADEVI
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EPC 3

Method- 1 BIOLOGY

Semester- II

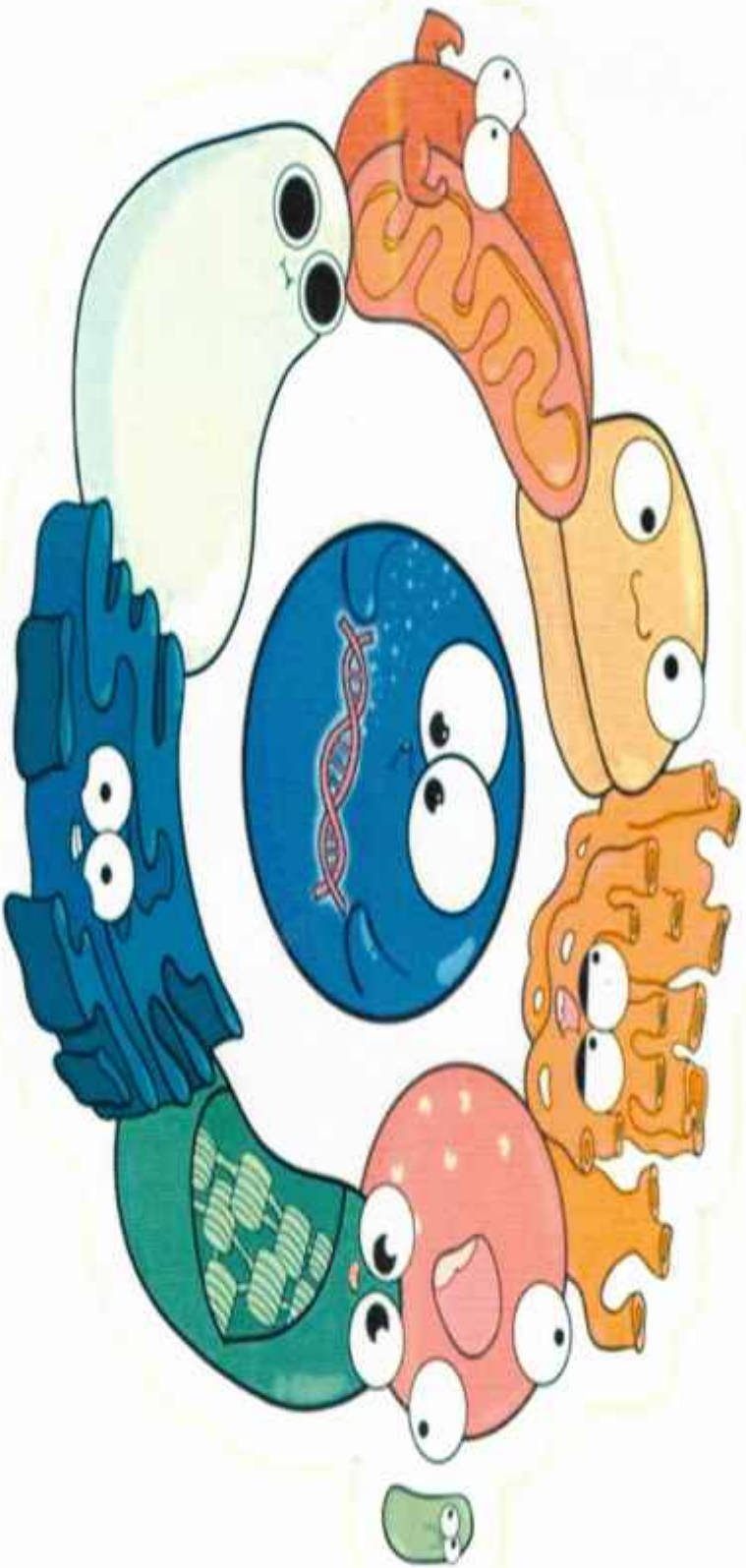
**Topic- Cells and cell organelles
(Class- 8th)**

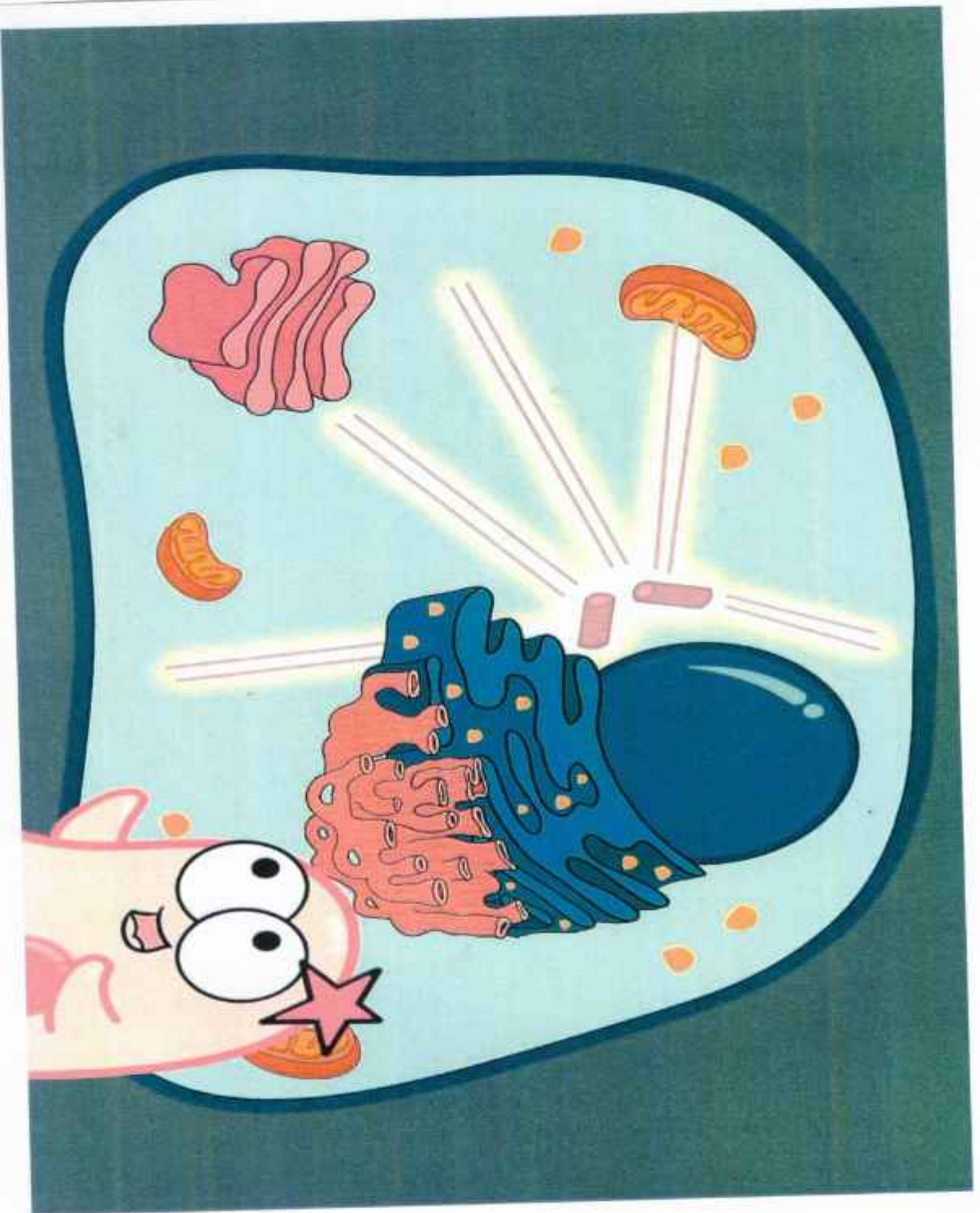
Presented by

Shriya A. Kale

**Shiladevi College of Education, Wadi
Nagpur- 440012**

CELLS AND CELL ORGANELLES





□ Contents

- ✓ Introduction (3)
- ✓ Eukaryotic cell (4)
- ✓ Prokaryotic cell (4)
- ✓ Animal and plant cell (6, 7)
- ✓ Components of a cell
- ✓ Cell organelles (11)
- Nucleus (12)
- Endoplasmic reticulum (13)
- Golgi complex (15)
- Mitochondria (16)
- Vacuole (17)
- Chloroplast (18)



Introduction

- A cell is the basic unit of life, functioning as the smallest structural and functional unit of all living organisms.
- The term "cell" was coined by the English scientist Robert Hooke in the 17th century when he observed cork cells under a simple microscope.
- Today we use more advanced tools like compound microscopes to observe cells in detail.

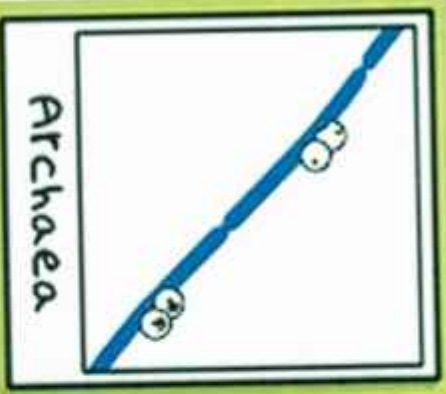
Difference between prokaryotic and eukaryotic cell

Prokaryotic cell

- Size- 1-10 mm
- Number of chromosomes- Only one
- Nucleus- nucleoid resembling nucleus
- Mitochondria- They don't have membrane bound cell organelles
- E.g. bacteria

Eukaryotic cell

- Size- 5- 100 mm
- Number of chromosomes- more than one
- Nucleus- with nuclear membrane, nucleolus and nucleoplasm
- Mitochondria- present
- E.g.- multicellular and unicellular plants and animals

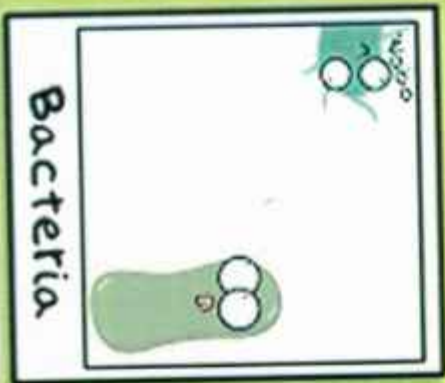


Archaea

PROKARYOTES

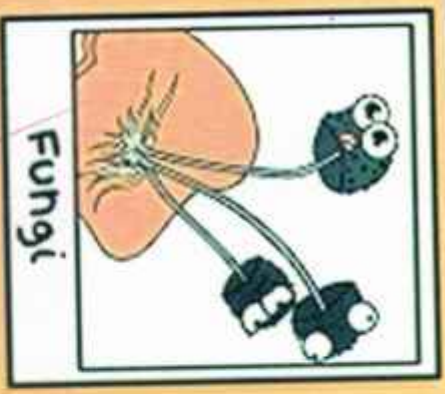
PRO- = 'Before' KARYO- = 'Nucleus'

#Amoebogifs
@AmoebaSisters



Bacteria

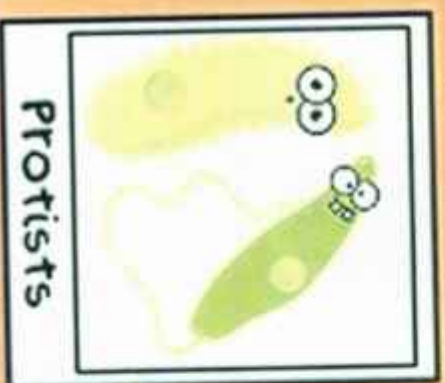
VS



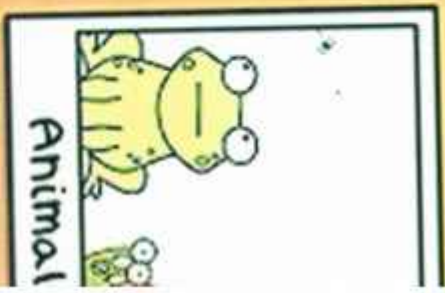
Fungi

EUKARYOTES

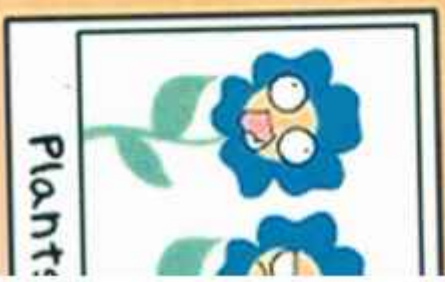
EU- = 'True' KARYO- = 'Nucleus'



Protists



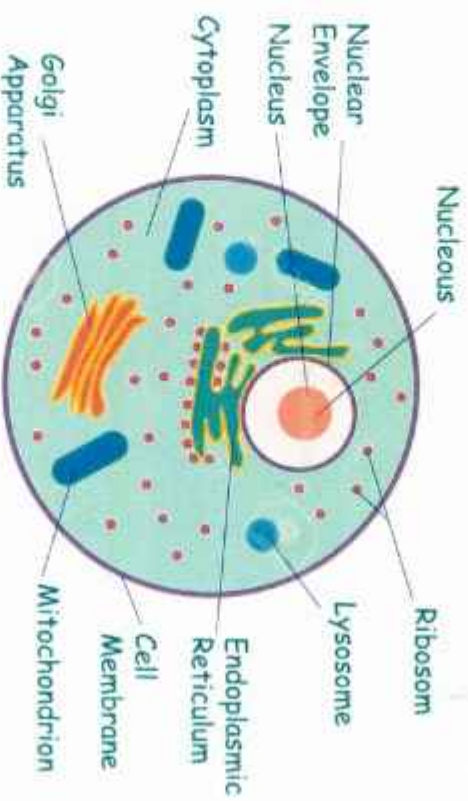
Animal



Plants

Animal cell

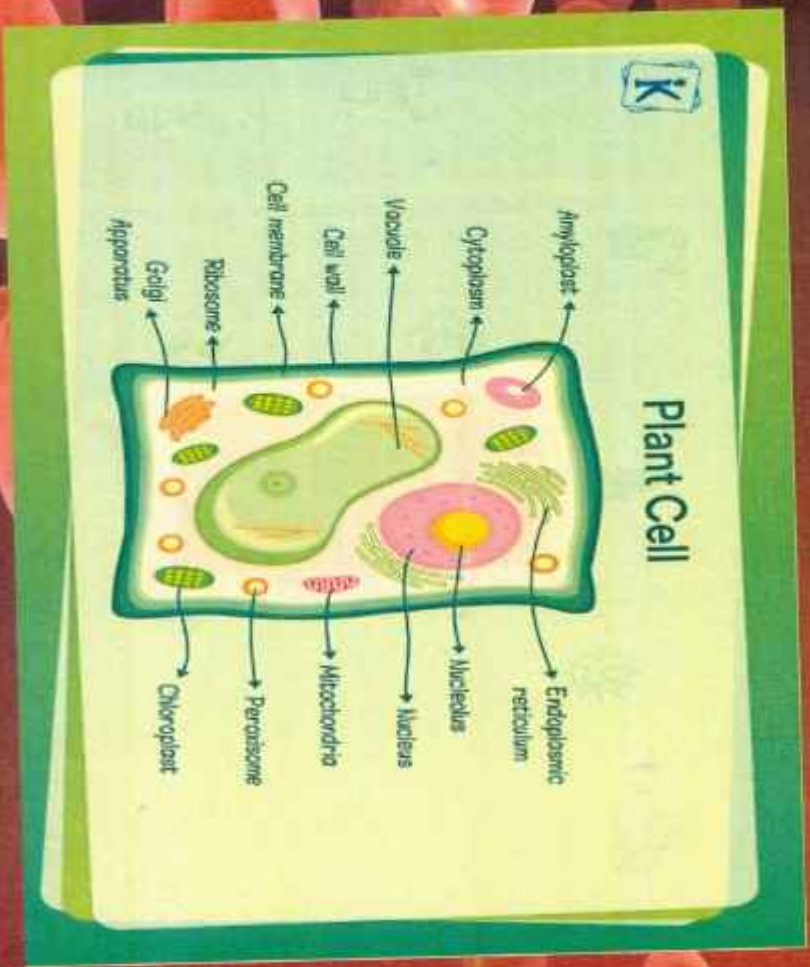
Animal Cell



- Cell wall is absent.
- They lack chloroplasts.
- Smaller vacuoles or none.
- The shape are typically rounded or irregular.
- Have centrioles, which are involved in cell division (mitoaida and meiosis).
- Plastids are absent.
- Contains lysosomes, which are involved in digestion and waste removal.

Plant cell

- They have rigid cell wall composed of cellulose outside the cell membrane.
- Contains chloroplasts, responsible for photosynthesis.
- Have a large vacuole that stores water, nutrients and waste products.
- Centrioles are absent.
- May contain many types of plastids- amyloplasts and chromoplasts.
- Lysosomes- fewer or less prominent ones.

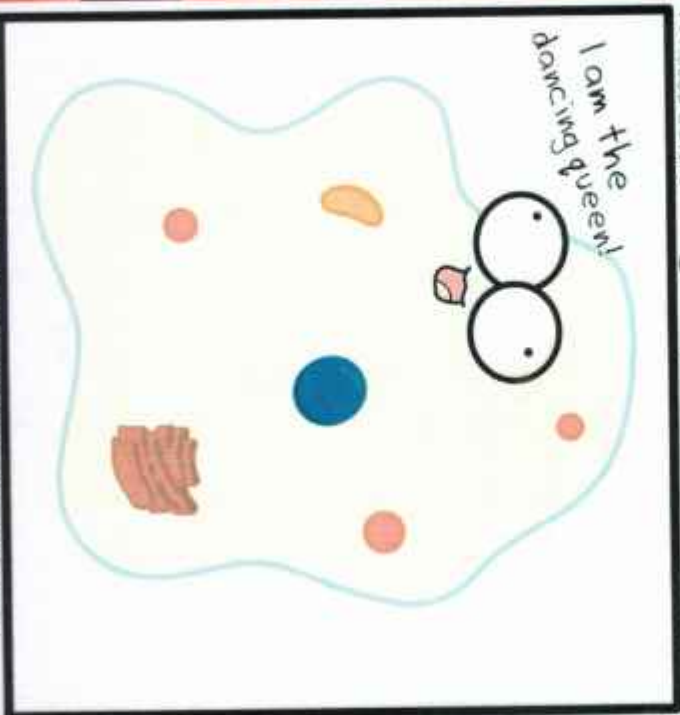


Components of a cell

Amoeba Sisters

Cytoplasm

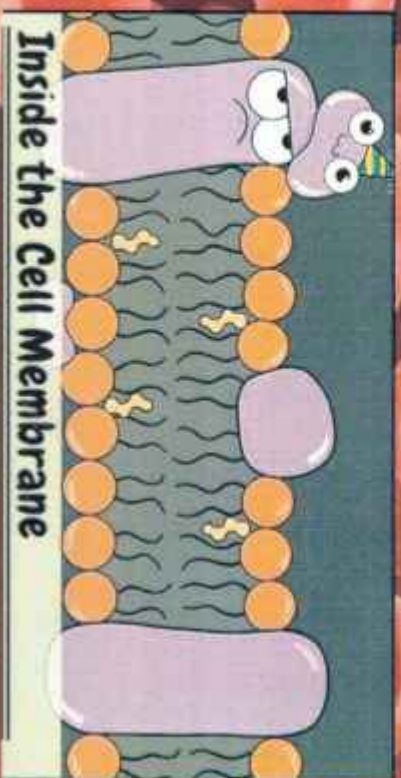
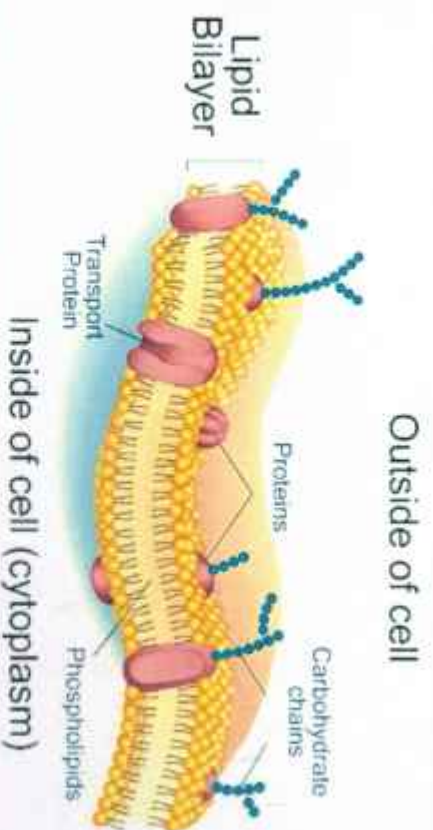
#AmoebaSisters



Thick jelly-like substance of the cell

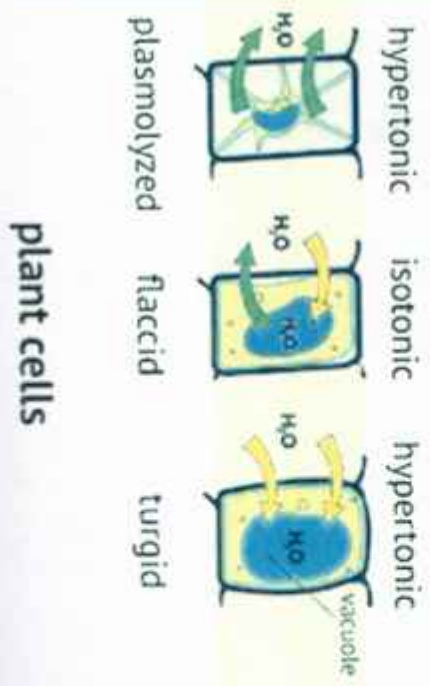
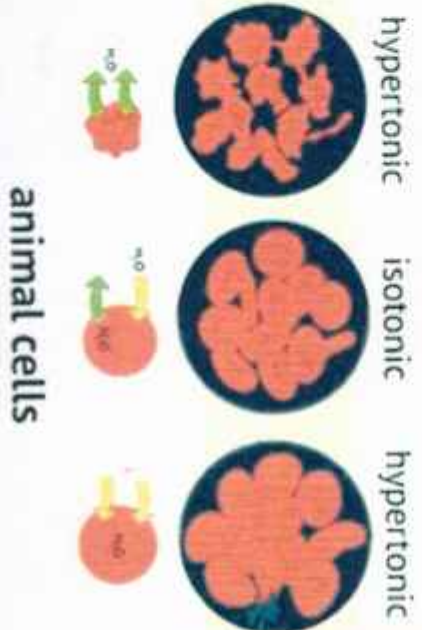
- > **Cell wall** - found around the cells. Only present in plant cell. Composed of carbohydrates like cellulose and pectin. The function of the cell is to give support to the cell and protect the cell by preventing entry of excess water in the cell.
- > **Cytoplasm** - it is a jelly-like substance found inside cells, filling the space between the cell membrane and the nucleus. It is a bustling environment where many cellular processes take place, such as protein synthesis and metabolism.

Structure of the Cell Membrane



- Plasma membrane - thin, fragile and elastic covering that separates cell components from outer environments.
- Protein molecules are embedded in two layers of phospholipids.
- It is selectively permeable.
- Useful molecules - salt, water and oxygen enter the cell and CO_2 exits the cell.
- The cellular environment does not change due to plasma membrane.
- This is called homeostasis.

Processes that don't consume cellular energy



animal cells

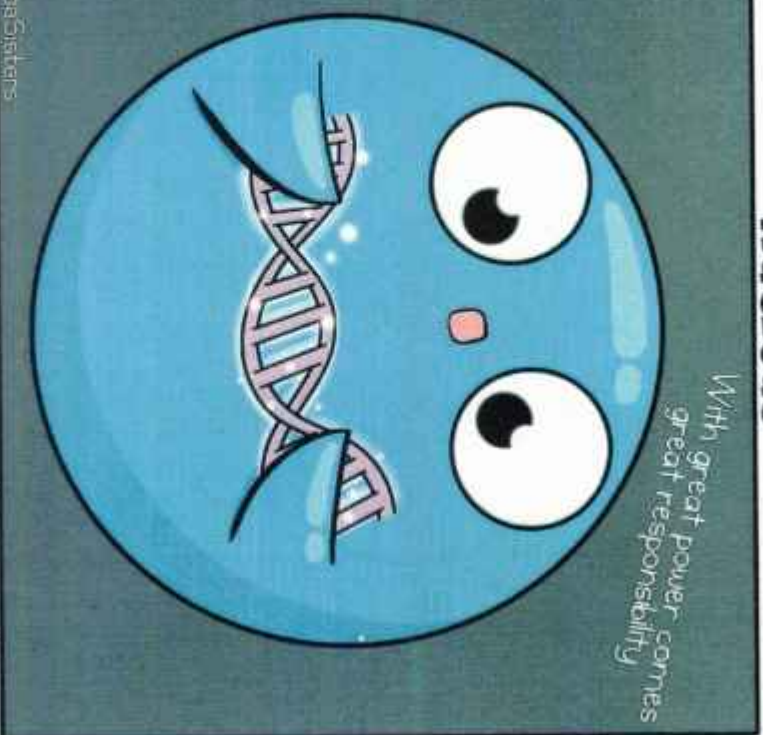
plant cells

Cell organelles

- An organelle is a specialized subunit having a specialized function within the cell.
- They are the 'organs of the cell.'
- Each organ has its own lipoprotein membrane.
- Each organelle plays a unique role in maintaining the cell's homeostasis and carrying out essential processes.
- The cell organelles are - nucleus, mitochondria, endoplasmic reticulum, Golgi apparatus, lysosomes and chloroplasts in plant cells.
- Together, they work in harmony to ensure the cell's survival and proper functioning.

Nucleus

Nucleus

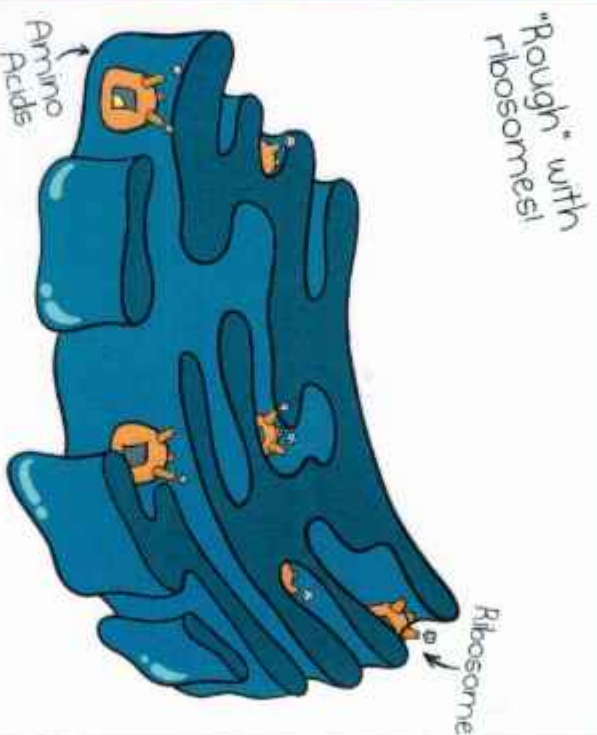


Genetic information bearer of the cell

- The command center of the cell, housing the cell's genetic material, **DNA**.
- Nucleus has one round nucleolus and a network of **chromatin** fibres.
- Functional segments on chromosomes are called **genes**.
- Functions:
 - ✓ Controls all metabolic activities of the cell and also the cell division.
 - ✓ Involved in the transmission of hereditary characters from parents to offspring.

Endoplasmic reticulum (ER)

ROUGH ENDOPLASMIC RETICULUM



Protein assembly line of the cell

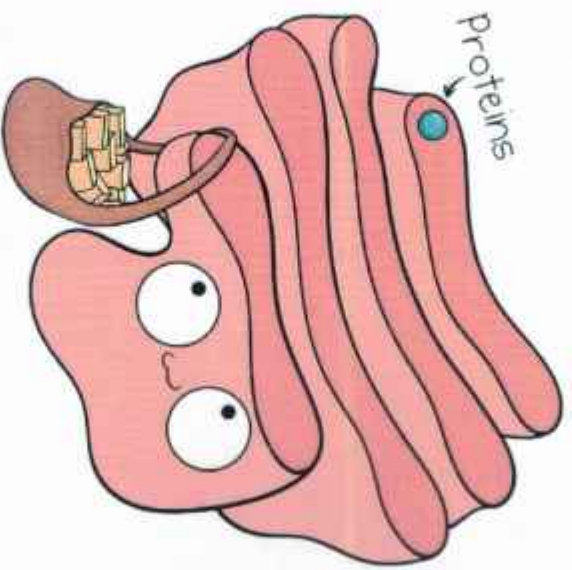
- Conducts various substances inside the cell.
 - ER has a net like structure consisting of interconnected miniature tubes and sheets filled with fluid.
 - It is connected to the nucleus from inner side to plasma membrane on the outer side.
 - There are **two types**:
 - ✓ Rough ER (ribosomes present)
 - ✓ Smooth ER (no ribosomes)
- Functions:
- ✓ Framework that supports the cell.
 - ✓ Flushes out toxins that entered the body.

Golgi complex

- Camillo Golgi described it for the first time.
- The Golgi complex is made up of 5-8 hollow and flat sacs placed parallel to each other.
- These sacs are called 'cisternae' and are filled with different enzymes.
- Proteins coming from ER are enclosed in vesicles, which come towards Golgi complex via cytoplasm.
- They fuse with the formation face of the Golgi membranes and empty their contents in the cisternae.
- It works like a packing department that packs and distributes substances.



GOLGI APPARATUS



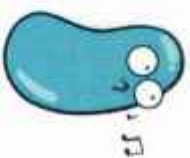
Post office of the cell

➤ Functions:

- ✓ Secretory organ of the cell.
- ✓ Modifies, sorts and packs materials synthesized in the cell and dispatches them to various targets like plasma membrane, lysosome, etc.
- ✓ Produces vacuoles and secretory vesicles.
- ✓ Helps in the formation of the cell wall, plasma membrane and lysosomes.

Lysosomes

Lysosome

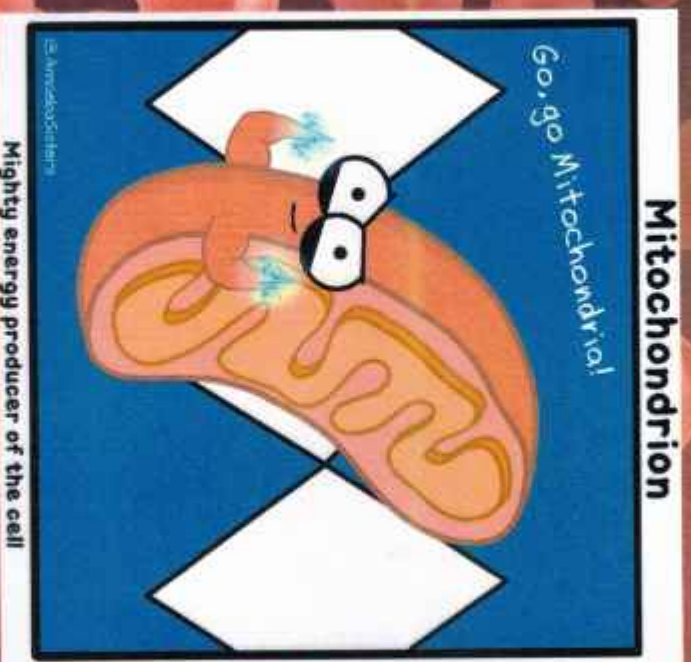


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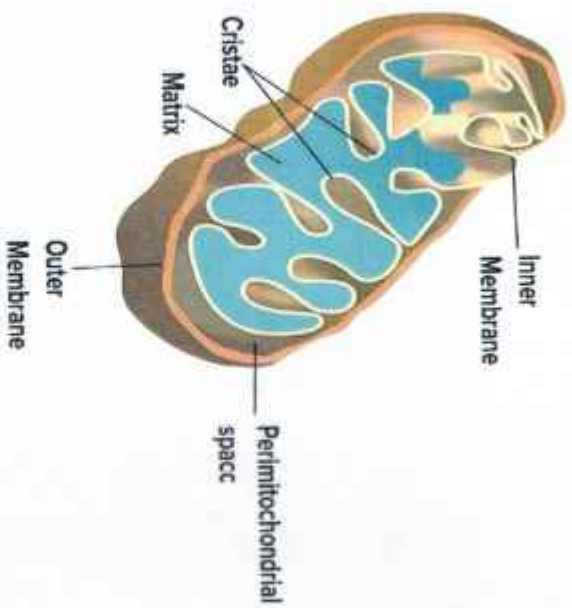
Enzyme packed wrecking balls of the cell

- Lysosomes digest the waste.
- They are simple, single membrane bound sacs filled with digestive enzymes.
- Functions:
 - ✓ Destroys viruses and bacteria that attack the cell.
 - ✓ Destroys worn out cellular organelles and organic debris (Autolysis).
 - ✓ Called suicidal bags.
 - ✓ During starvation, lysosomes digest stored proteins, fats.

Mitochondria

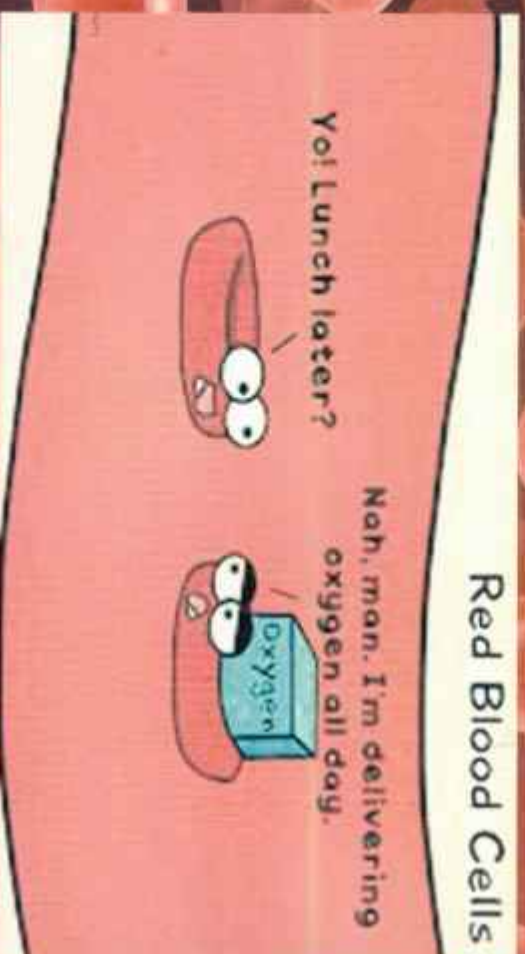


- Produces energy.
- Double membrane structure.
- Outer membrane is porous, inner membrane deeply folded. Folds are called 'cristae'.
- inner cavity filled with proteinaceous gel like matrix (ribosomes, phosphate granules, DNA). Therefore it can produce proteins.
- With the help of enzymes, mitochondria oxidise carbohydrates and fats in the cell.
- Energy is stored in the form of ATP (Adenosine Tri Phosphate).



- It can be seen under the electron microscope.
- Plant cells have less mitochondria than animal cells.
- Functions:
 - ✓ To produce energy- rich compound- ATP.
 - ✓ Synthesis of proteins, carbohydrates, lipids etc. by using the energy in ATP.

Red blood cells (RBC's)



- Found in the bloodstream and are produced in the bone marrow.
- Also called as **erythrocytes**.
- **Main function**– to transport oxygen from lungs to all tissues of the body and to carry CO₂, back to lungs to be exhaled.
- Disc-shaped, packed with haemoglobin.
- **Haemoglobin**- a protein that binds oxygen, giving blood its red colour.
- Maintains the body's oxygen supply.

White blood cells (WBC's)



- Also called leukocytes. Found in the bloodstream of the lymphatic system, and various tissues throughout the body
- Defends the body against infections and foreign invaders- bacteria, viruses and parasites.
- Produces antibodies and coordinate immune responses.
- Essential for maintaining body's overall health and immunity.

Different Types of White Blood Cells



Neutrophils
First to respond
to bacteria
or a virus



Eosinophils
Known for
their role in
allergy symptoms



Basophils
Known for
their role
in asthma



Lymphocytes
Fight infections
by producing
antibodies



Monocytes
Clean up
dead cells

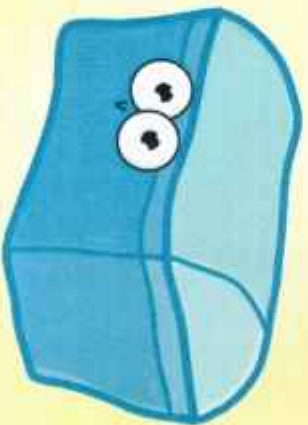
verywell

Vacuoles

Amoeba Sisters

Vacuole

#AmoebaSisters



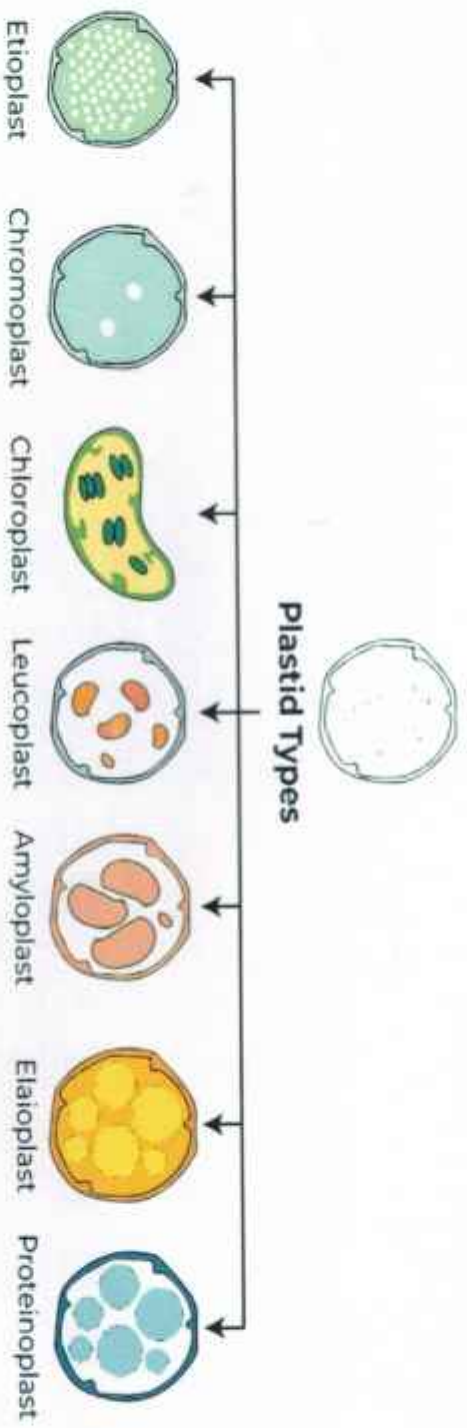
Storage containers of the cell

- Storage sacs for solid and liquid contents.
- No typical shape or size. Changes accordingly to the need of the cell.
- Bound by single membrane.

➤ Functions:

- ✓ Maintains osmotic pressure of the cell.
- ✓ Store metabolic byproducts and end products. (Glycogen, protein and water)
- ✓ In animal cell- they store waste products and food.
- ✓ In plant cell- full of sap, provides turgidity and rigidity to them.

Plastids



- Type of organelle found in plant cells.
- Responsible for photosynthesis, storage and pigment synthesis.
- Most well-known plastid is chloroplast.

Chloroplast

CHLOROPLAST



Glucose synthesizers of the cell

- Important for the photosynthesis process taking place in leaves.
- Chlorophyll in chloroplast traps solar energy and converts it to chemical energy.
- Stroma contains DNA, enzymes, ribosomes and carbohydrates that are necessary for photosynthesis.
- Functions:
 - ✓ Converts solar energy to chemical energy (food).
 - ✓ Chromoplasts gives different colours to flowers and fruits.
 - ✓ Leucoplasts are involved in the synthesis and storage of food like starch, oils and proteins.

Colour of the plant part

Green (leaves)

Orange (carrot)

Yellow

Blue, purple

Dark pink (beet)

Pigment

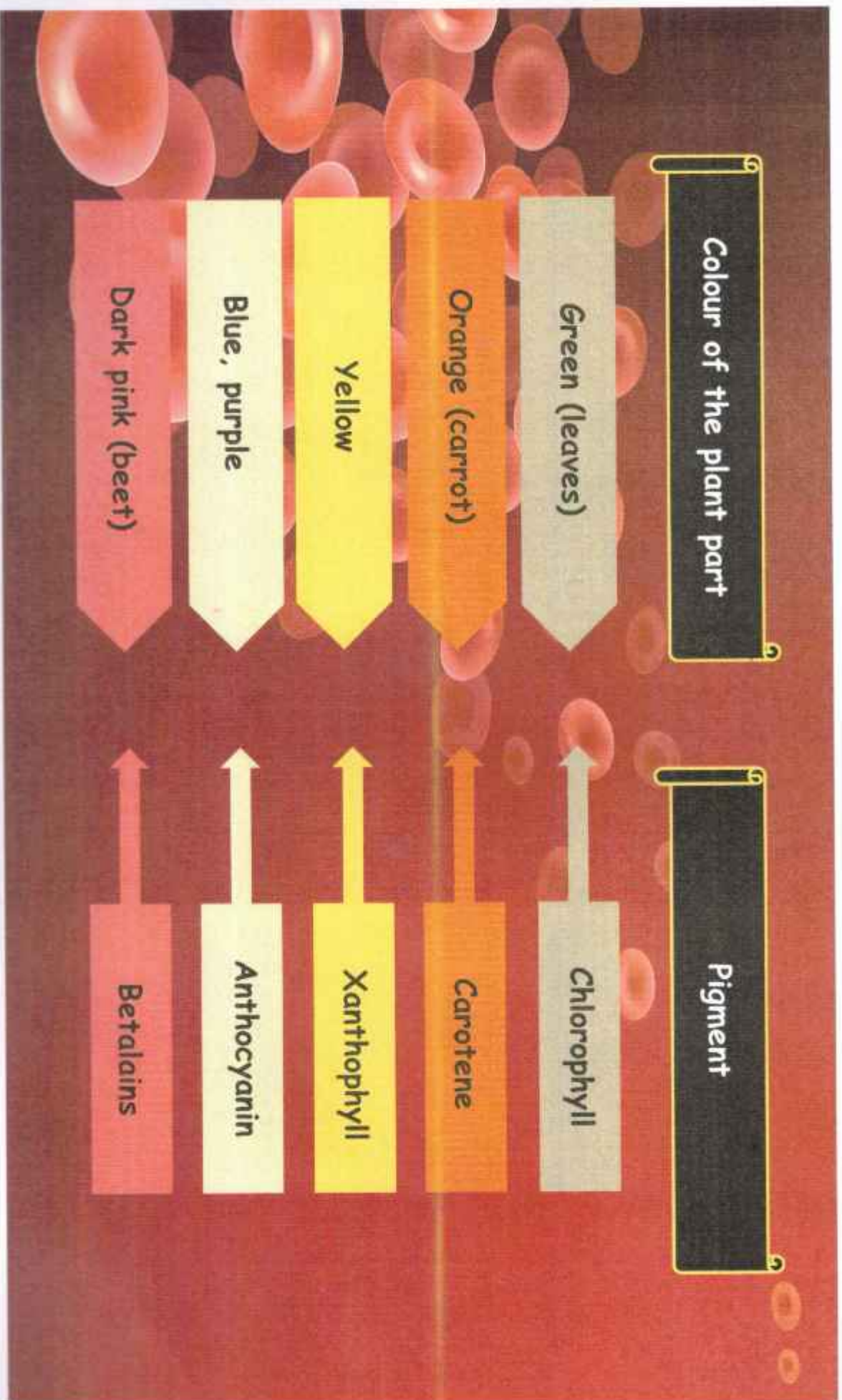
Chlorophyll

Carotene

Xanthophyll

Anthocyanin

Betalains



Summary

- Cell is the structural and functional unit of living organisms.
- There are eukaryotic cells and prokaryotic cells.
- Plant cell and animal cell have many differences and similarities.
- The components of a cell are- cell wall, plasma membrane, cytoplasm.
- The cytoplasm has various cell organelles which are the organs of the cell.
- The cell organelles are- nucleus, endoplasmic reticulum, Golgi complex, lysosomes, mitochondria, vacuoles, chloroplast.
- There are many types of plastids. The most well known is chloroplast.
- These plastids are responsible for photosynthesis, storage and pigment synthesis.

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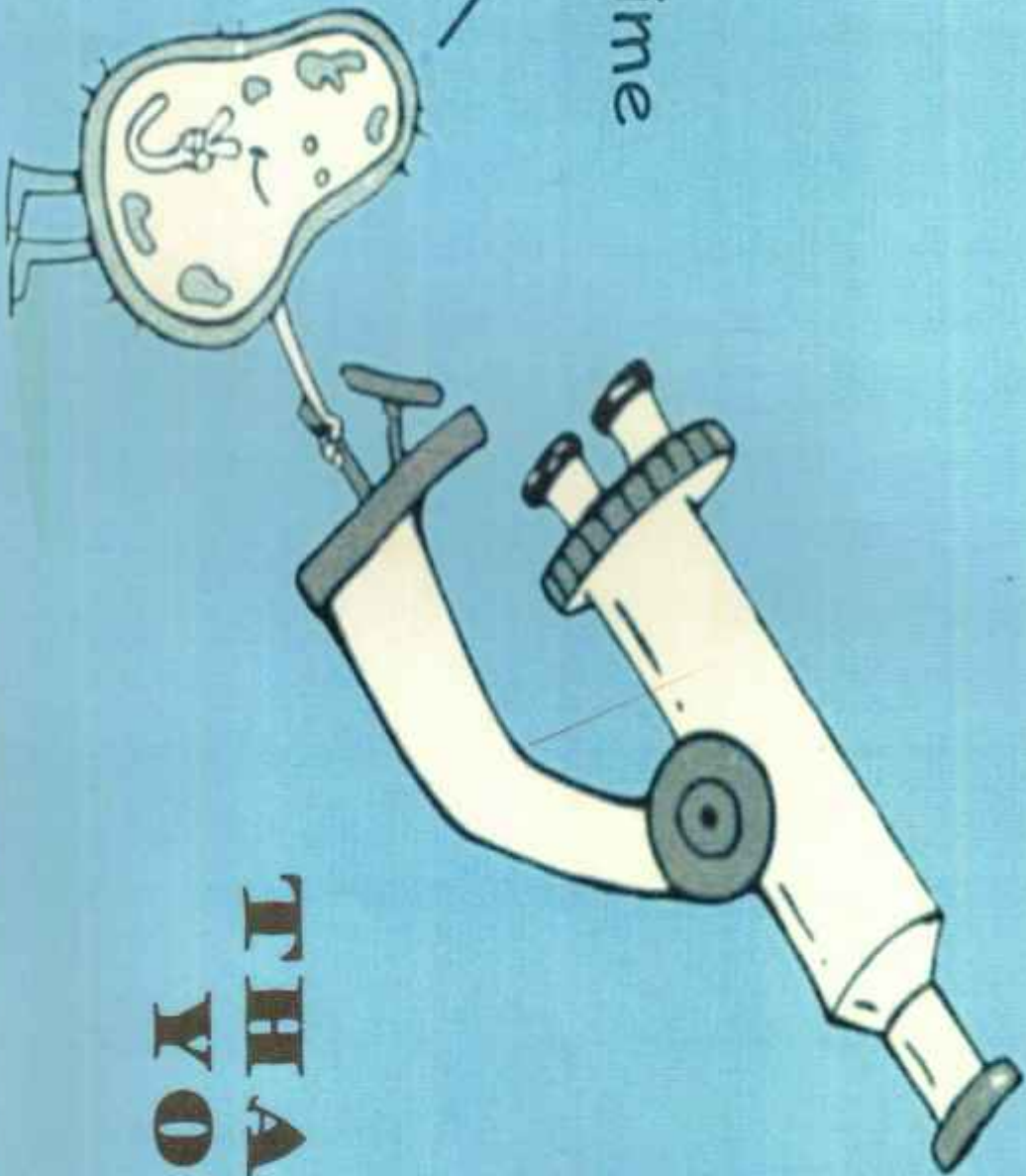
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Cellfie time



**THANK
YOU**

EPC 3

Method- 2 CHEMISTRY

Semester- II

Topic- Carbon- An important element

(Class - 9th)

Presented by

Shriya A. Kale

Shiladevi College of Education, Wadi

Nagpur- 440012

CARBON

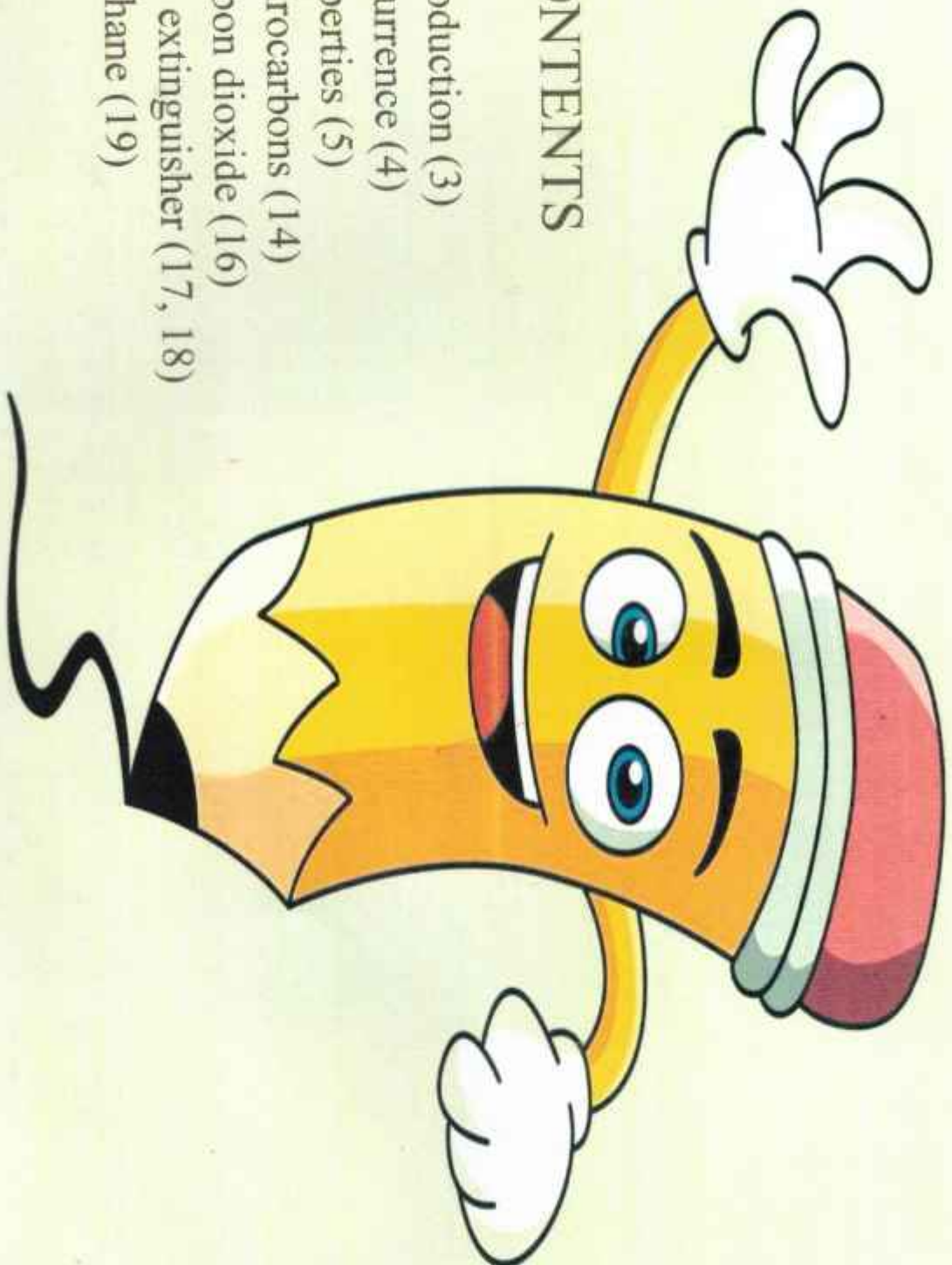


An important element



□ CONTENTS

- ❖ Introduction (3)
- ❖ Occurrence (4)
- ❖ Properties (5)
- ❖ Hydrocarbons (14)
- ❖ Carbon dioxide (16)
- ❖ Fire extinguisher (17, 18)
- ❖ Methane (19)



Introduction

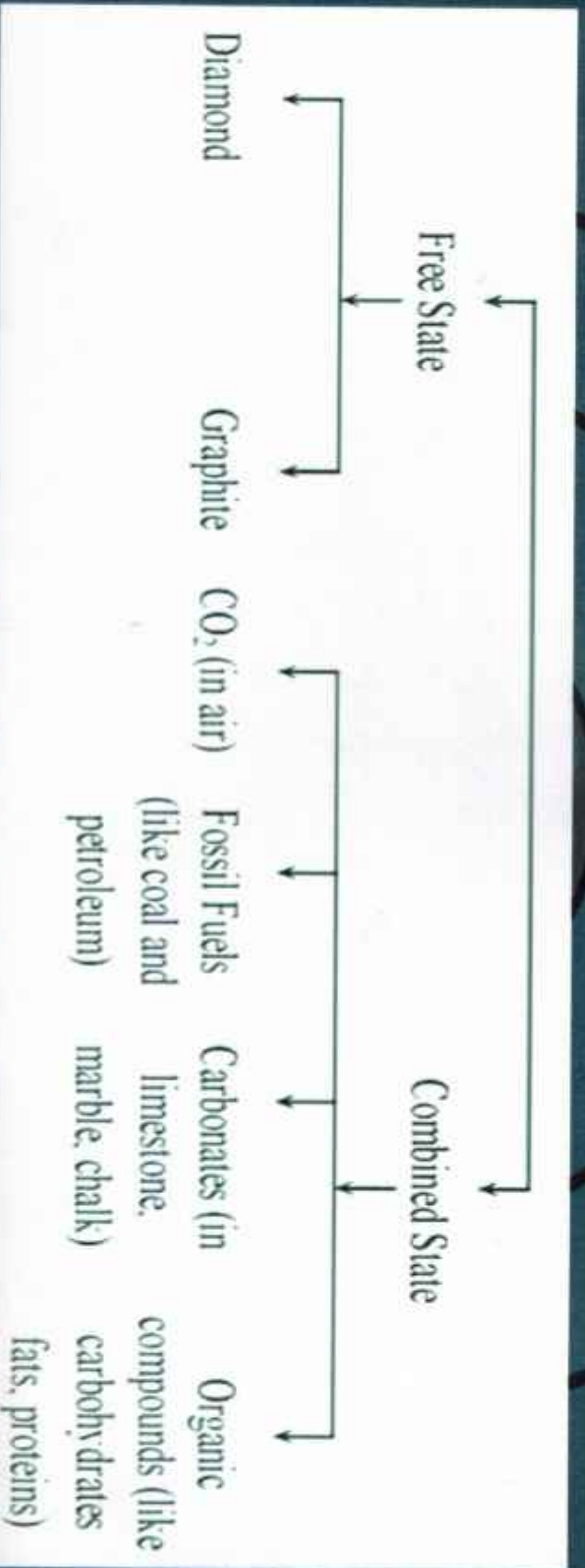
- Carbon is abundantly available in nature and occurs free as well as in combined state, after hydrogen, helium and oxygen.
- It is the element with the symbol C and atomic number 6.
- Carbon forms strong bonds with many other elements, allowing a wide variety of compounds to be created.
- Compounds obtained directly or indirectly from plants and animals are called organic compounds and those obtained from minerals are called inorganic compounds.
- All organic compounds contains carbon.
- Also the main element even in cellular DNA and RNA.
- The German chemist Wohler synthesized an organic compound, urea from an inorganic compound ammonium cyanate.
- Ever since then, many organic compounds are made from inorganic compounds.
- Carbon was found to be the main element in all these compounds.
- Hence organic chemistry is referred to as chemistry of carbon compounds.

CARBON



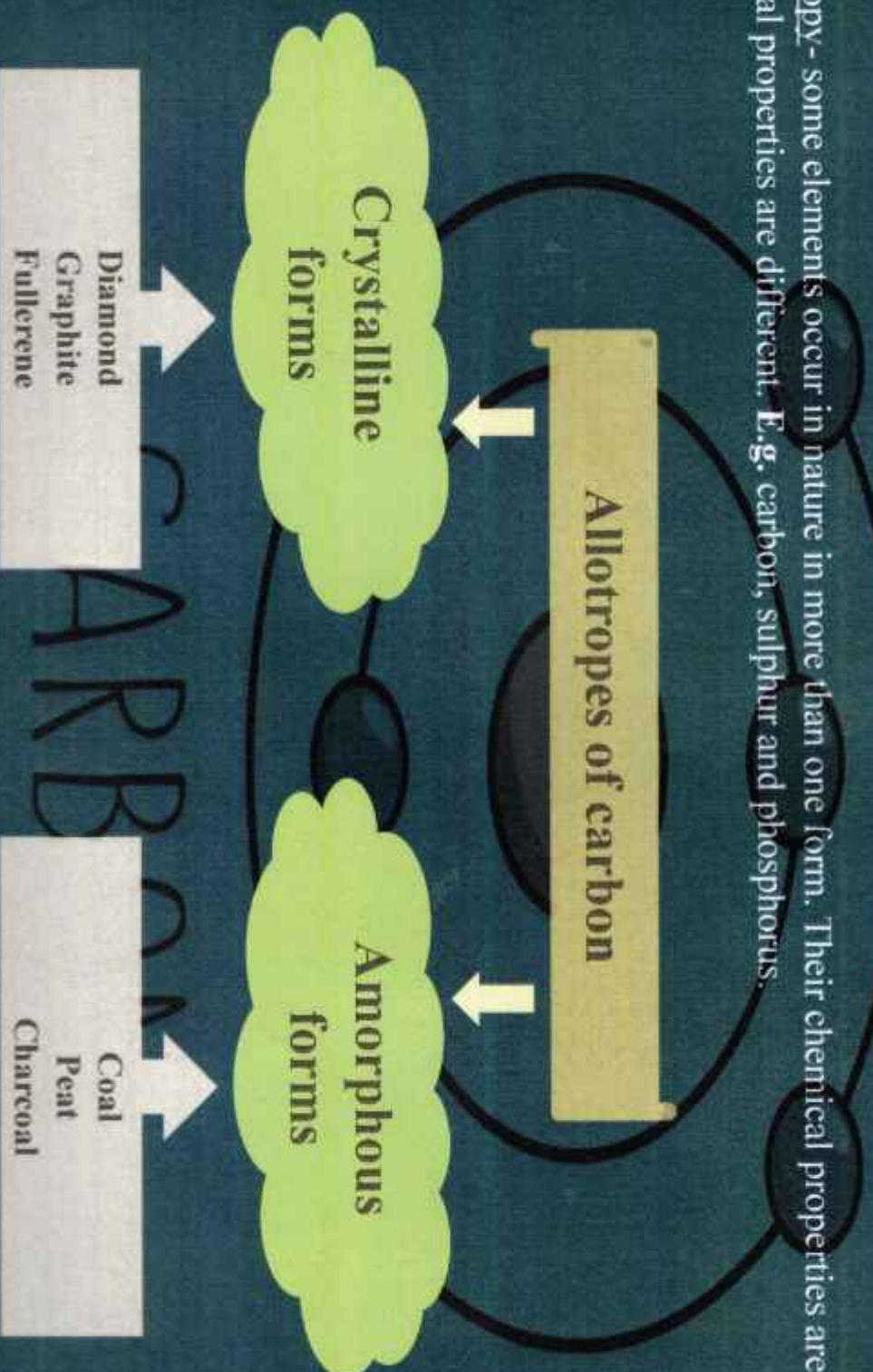
Occurrence of carbon

➤ Name carbon is derived from the Latin word 'carbo' meaning coal.



Properties

Allotropy - some elements occur in more than one form. Their chemical properties are the same but physical properties are different. E.g. carbon, sulphur and phosphorus.

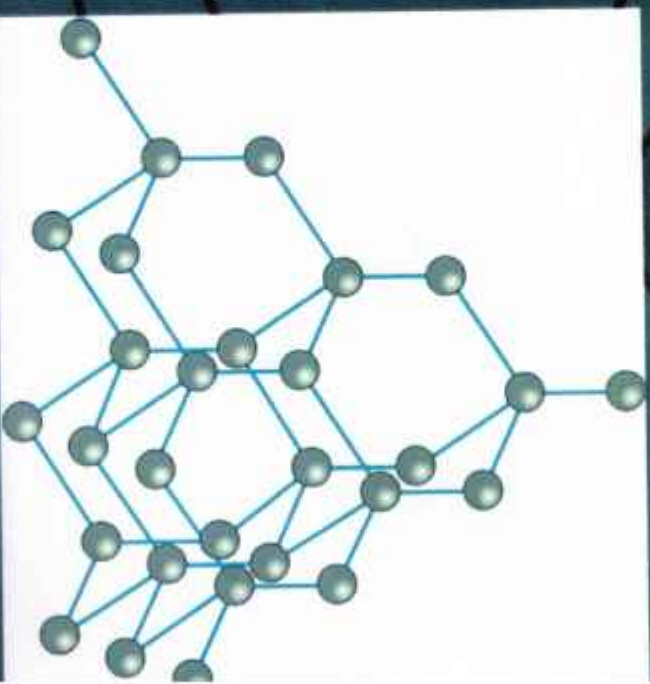


Crystalline forms

- Has a regular and definite arrangement of atoms.
- High melting points and boiling points.
- Definite geometrical shape, sharp edges and plane surfaces.

1. *Diamond*

- **Occurrence**- Found mainly in India in Golconda (Telangana) and Panna (Madhya Pradesh). Also in Brazil, Belgium, Russia and America.
- **Structure**- Every carbon atom is bonded to four neighboring atoms by covalent bonds. Due to this three dimensional structure, diamond become very hard.



CARBON

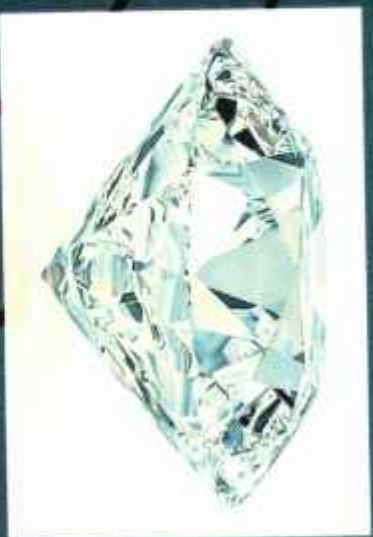
➤ Properties

- i. Pure diamond is the hardest natural substance.
- ii. Density is 3.5 g/cm^3 .
- iii. Melting point of diamond is 3500°C .
- iv. Does not dissolve in any solvent.
- v. Acids/bases have no effect on it.
- vi. Bad conductor of electricity as it does not have free electrons.

➤ Uses

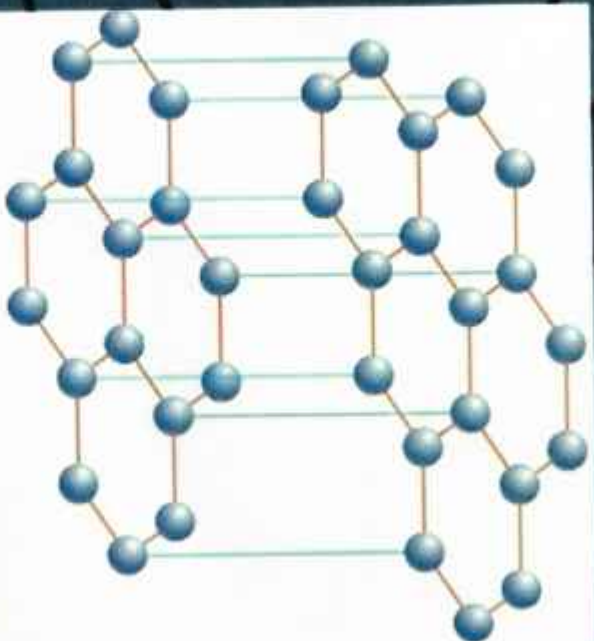
- i. In glass cutting and rock drilling machines.
- ii. Ornaments
- iii. Knives used in eye surgery.
- iv. polishing other diamonds.
- v. Make windows giving protection from radiation in space and in artificial satellites.

CARBON



II. Graphite

- **Occurrence**- found in the natural state in India, Russia, New Zealand and America. Used in pencil is made by mixing graphite with clay. This process was discovered by Nicholas Jacques Conte in 1795.
- **Structure**- every carbon atom in graphite is bonded to three other carbon atoms in such a way that a hexagonal layered structure is formed. Made of many sheets or layers of carbon atoms. One layer of graphite is called grapheme.



CARBON

➤ Properties

- i. Black, soft, brittle and slippery.
- ii. Free electrons move continuously within the entire layer. Hence good conductor of electricity.
- iii. Due to layered structure, graphite can be used for writing on paper.
- iv. Density, 1.9 to 2.3 g/cm^3 .
- v. Does not dissolve in most solvents.

➤ Uses

- i. Making lubricants.
- ii. Making carbon electrodes.
- iii. Pencils for writing.
- iv. In paints and polish.
- v. Arc lamps which gives a very bright light.

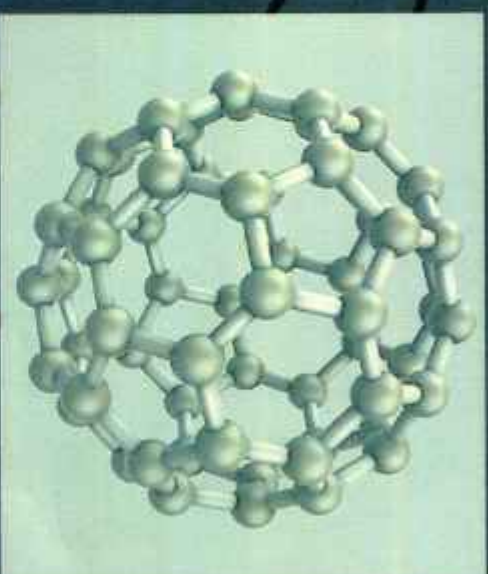
CARBON



III. Fullerene

- Rarely found in nature.
- Found in soot and in interstellar space.
- E.g. Buckminsterfullerene (C₆₀). Named after the architect Richard Buckminster Fuller because its structure resembles the geodesic dome he designed.
- C₆₀, C₇₀, C₈₂ and C₈₆ are other examples of fullerene.
- Their molecules occur in small numbers in soot.

CARBON



Amorphous forms/ non-crystalline forms

Coal

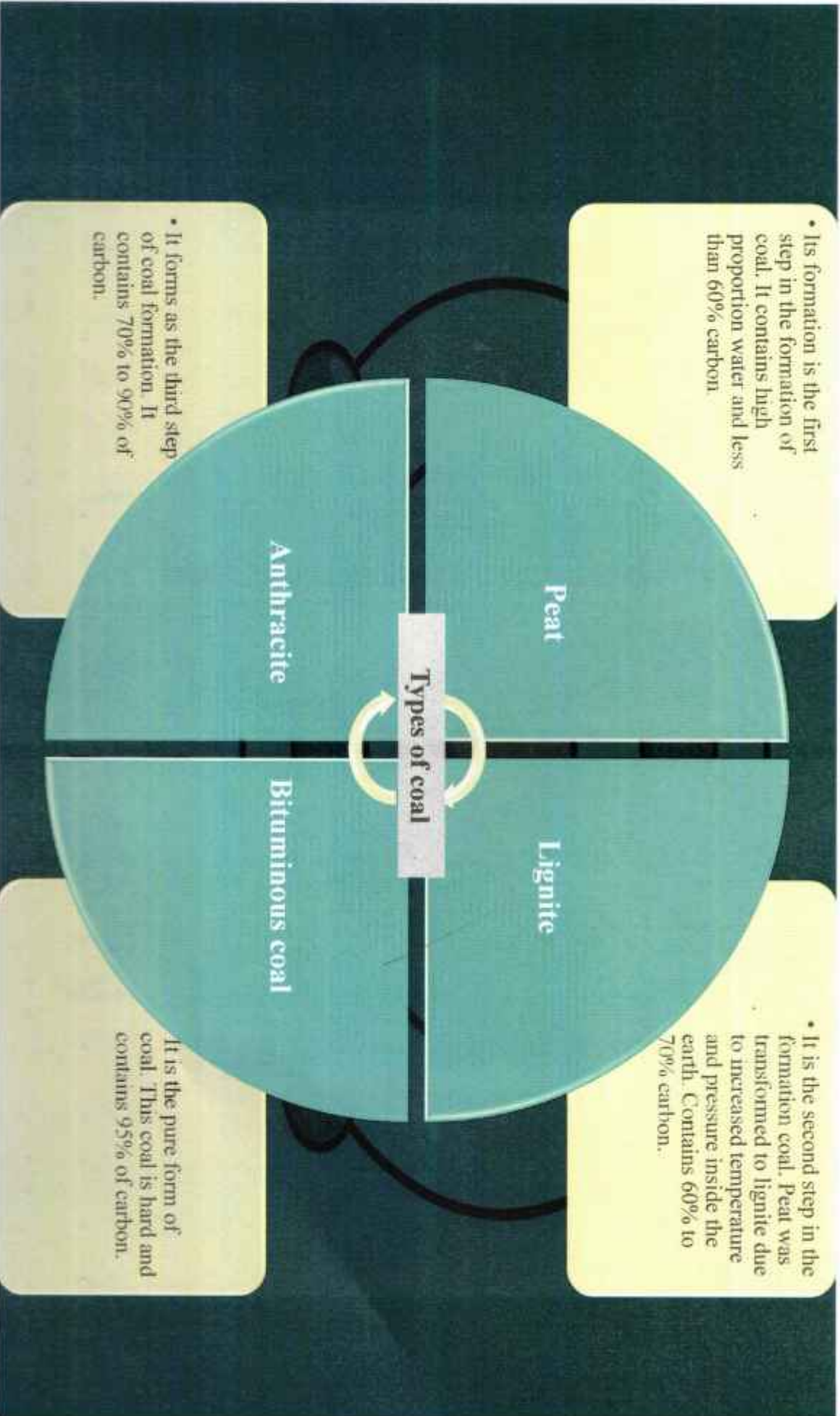
It is a fossil fuel. Contains carbon, hydrogen & oxygen. Also contains nitrogen, phosphorous & sulphur. It occurs in solid state. And it is of 4 types.

Charcoal

Made from animals- bones, horns, etc. on the other hand it is also made up of plants- formed by combustion of wood in an insufficient supply of air.

Coke

Used as a domestic fuel. It is used as a reducing agent. Used in the production of aeriform fuel such as water gas ($\text{CO}+\text{H}_2$) & producer gas ($\text{CO}+\text{H}_2+\text{CO}_2+\text{N}_2$).



• Its formation is the first step in the formation of coal. It contains high proportion water and less than 60% carbon.

Peat

• It is the second step in the formation coal. Peat was transformed to lignite due to increased temperature and pressure inside the earth. Contains 60% to 70% carbon.

Lignite

• It forms as the third step of coal formation. It contains 70% to 90% of carbon.

Anthracite

• It is the pure form of coal. This coal is hard and contains 95% of carbon.

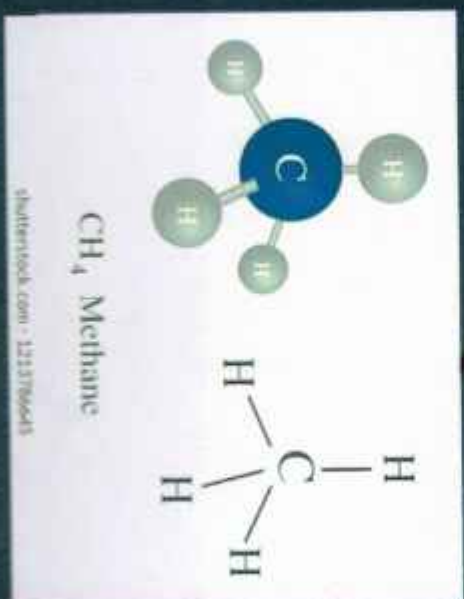
Bituminous coal

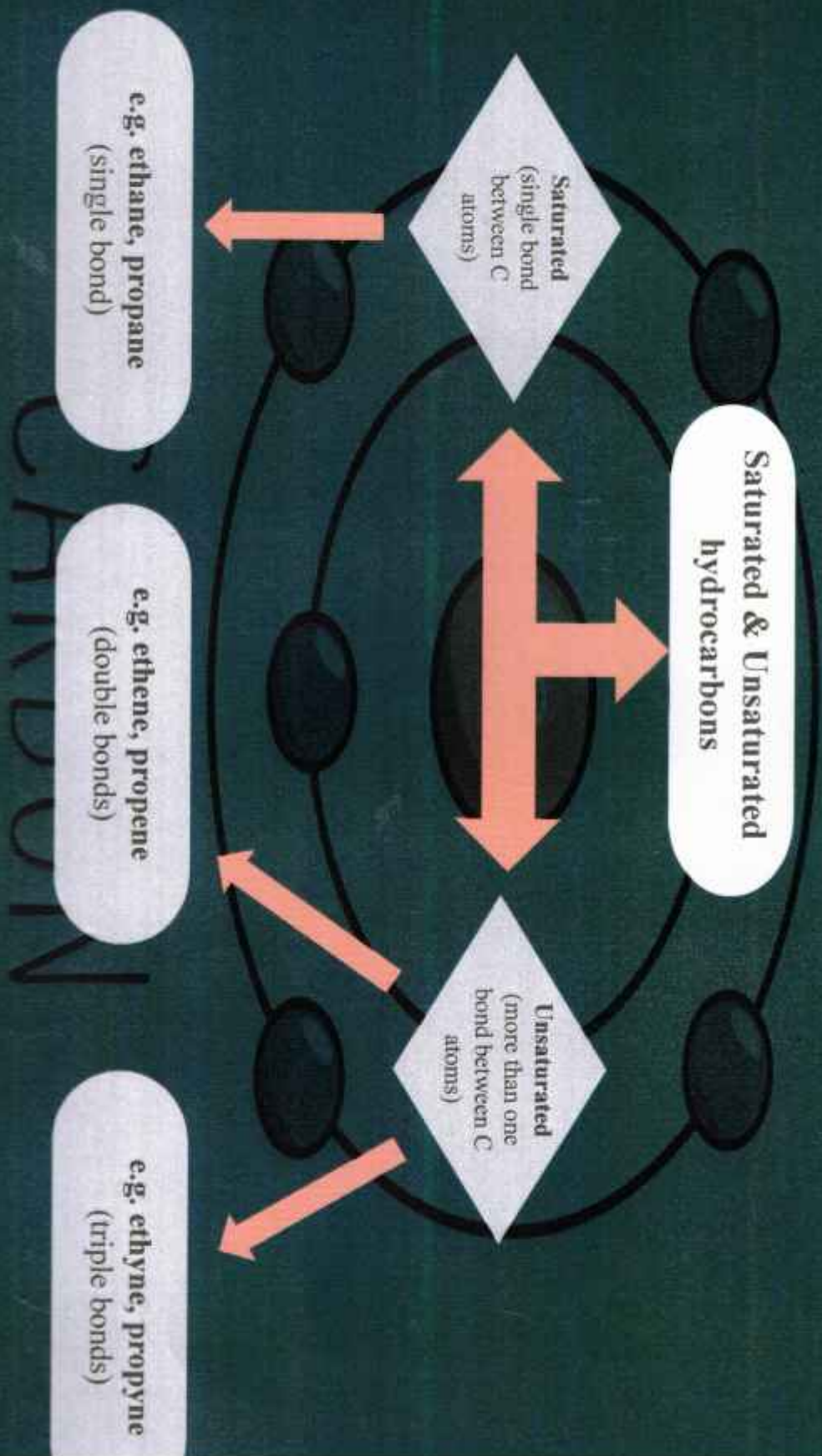
Hydrocarbons

- Along with element hydrogen is also included in most organic compounds.
- Compounds formed from carbon and hydrogen are called basic organic compounds of hydrocarbons.



- Electronic configuration of carbon is 2, 4. If four electrons are added to the orbit of carbon, its octet becomes complete and its electronic configuration becomes stable. Therefore, the valency of carbon is 4.
- Carbon atom can form four covalent bonds with other carbon atoms or atoms of different elements.
- When a carbon atom shares one electron each with four hydrogen atoms and forms four C-H bonds, a methane CH_4 molecule is formed.





Saturated & Unsaturated hydrocarbons

Saturated (single bond between C atoms)

e.g. ethane, propane (single bond)

Unsaturated (more than one bond between C atoms)

e.g. ethene, propene (double bonds)

e.g. ethyne, propyne (triple bonds)

HYDROCARBON

Carbon dioxide

- Molecular formula: CO_2 , molecular mass: 44, melting point: -56.6°C .
- Occurs in the air in free state to the extent of about 0.03%. Exhaled air contains about 4% of CO_2 .
- Also present as a salt in chalk and marble/limestone.
- Given out in the combustion of wood and the fossil fuel coal.

➤ Chemical properties

- Sodium carbonate (washing soda) is formed when CO_2 is passed through an aqueous solution of sodium hydroxide.
- Chemical equation of the reaction: $2\text{NaOH} + \text{CO}_2 \rightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O}$
- Sodium bicarbonate (baking soda) is formed on passing CO_2 through an aqueous solution of sodium carbonate.
- Chemical equation of the reaction: $\text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2 \rightarrow 2\text{NaHCO}_3$

CARBON



➤ Uses

- i. CO₂ is used to make aerated drinks.
- ii. Solid CO₂ is used in cold storage & to also keep milk and milk products.
- iii. Used for getting special effects of a mist in dramas & movies.
- iv. CO₂ obtained by chemical reaction or kept under pressure is used in fire extinguishers.
- v. Plants use CO₂ in air for photosynthesis.

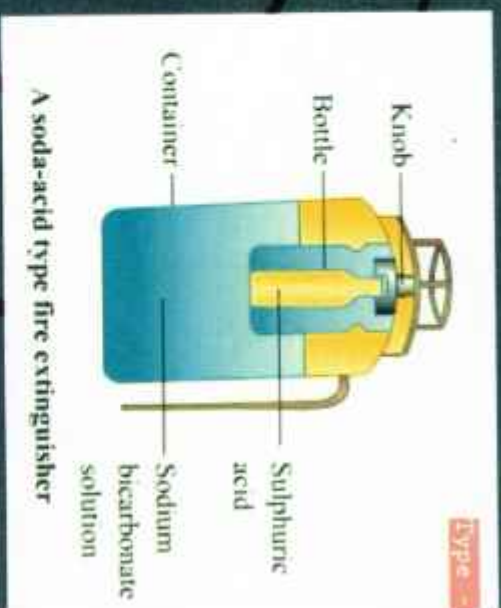
➤ Regular fire extinguisher

- ✓ Contains sodium bicarbonate powder. There is also dilute sulphuric acid placed in the glass capsule.
- ✓ The capsule breaks on pressing the knob, the sulphuric acid comes in contact with the sodium bicarbonate & the two react chemically to release CO₂ which comes out.



- ✓ CO₂ based fire extinguishers do not cause corrosion and are non conductors of electricity. Therefore used when electronic equipment catches fire.
- ✓ CO₂ are used to extinguish small scale fire.
- ✓ In modern fire extinguishers liquid and solid CO₂ is filled under pressure.
- ✓ On reducing the pressure it becomes gaseous and comes out of the hose.
- ✓ Chemical reaction: $2\text{NaHCO}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O} + 2\text{CO}_2 \uparrow$
- ✓ Nowadays, many types of fire extinguishers are used.

CARBON

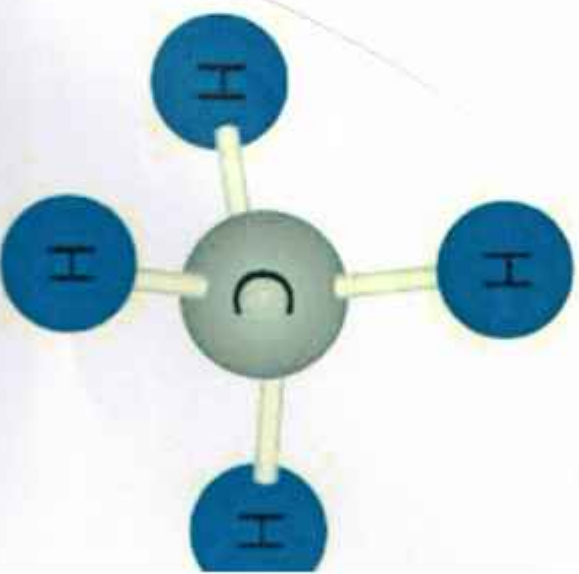


Methane

- Molecular formula: CH_4 , molecular mass: 16
- Discovered by Italian scientist Alessandro Volta (1776).
- Occurs as a natural gas to the extent of 87%.
- Decomposition of organic matter in the absence of air (anaerobic) produces methane.
- Present in biogas.
- Found in coal mines.
- Found at the surface of marshy places therefore called marsh gas.
- On heating mixture of H and CO gases at 300°C in the presence of nickel, CH_4 gas is formed.

Physical properties

- Melting point: -182°C .
- Boiling point: -161°C .
- Colorless gas.



CARBON

- i. Density is less than water.
- ii. Is in gaseous state at room temperature.
- iii. Sparingly soluble in water.

> Chemical properties

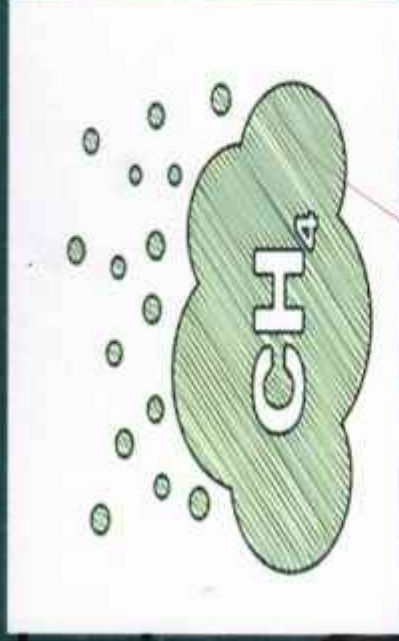
- i. Highly inflammable. It burns by reacting with oxygen to give a bluish flame. In this reaction, 213 kcal/mol of heat is given out.
 CH_4 burns completely.
- ii. Chemical reaction: $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O} + \text{heat}$
- iii. Chlorination: CH_4 and chlorine gas react with each other at the temperature of 250°C to 400°C in the presence of UV light and form mainly methyl chloride and hydrogen chloride. This reaction is called chlorination of CH_4 .
- iv. Chemical reaction: $\text{CH}_4 + \text{Cl}_2 \rightarrow \text{CH}_3\text{Cl} + \text{HCl}$

CARBON



➤ Uses

- i. CH_4 is the form of natural gas is used on industries such as fabric mills, paper mills, food processing industry, petrol purification.
- ii. Being the smallest hydrocarbon, the proportion of CO_2 released. In the combustion of CH_4 is the small and therefore, it is used as a domestic fuel.
- iii. CH_4 is used for production of organic compounds such as ethanol, methyl chloride, methylene chloride and acetylene.



CARB

Biogas Plant

Renewable Source
of Energy



Learn **Fatafat**

Global Warming



Overflow Tank
Spent Slurry
Outlet Chamber
Digester Tank

Animal dung, dry leaves, wet garbage get decomposed by anaerobic microbes in a biogas plant. This produces CH_4 gas also called **biogas**. It is a very cheap fuel option which meets the demand for cooking gas. It is also used for the production of an electricity. Biogas contains about 55% to 60% CH_4 and the rest is CO_2 . It is a fuel which is convenient to use and in addition to this, a very good manure is also produced as a side product of the process.

Biogas production process

(it is an anaerobic process. Takes place in two stages)

Production of acids
(the microbes act on the biodegradable complex organic compound and produce organic acids)

Methane gas production
(the methanogenic bacteria act on the organic acids to produce CH_4 gas)

CHAMBOM



Summary

- ✓ Carbon is found in nature in free as well as compound state. Carbon in free state is found as diamond and graphite, and in combined state is found as: CO_2 and in the forms of carbonates, fossil fuels, carbonaceous nutrients, natural fibers.
- ✓ The allotropes of carbon are: a) crystalline forms- diamond, graphite and fullerene and b) amorphous forms- coal, charcoal, coke.
- ✓ Hydrocarbons are compounds formed from carbon and hydrogen and are also called basic organic compounds.
- ✓ CO_2 occurs in free state and used in fire extinguishers and aerated drinks.
- ✓ CH_4 occurs as a natural gas, found in coal mines.
- ✓ Biogas plant is a cheap fuel option, which meets the demands for cooking gas.

CARBON

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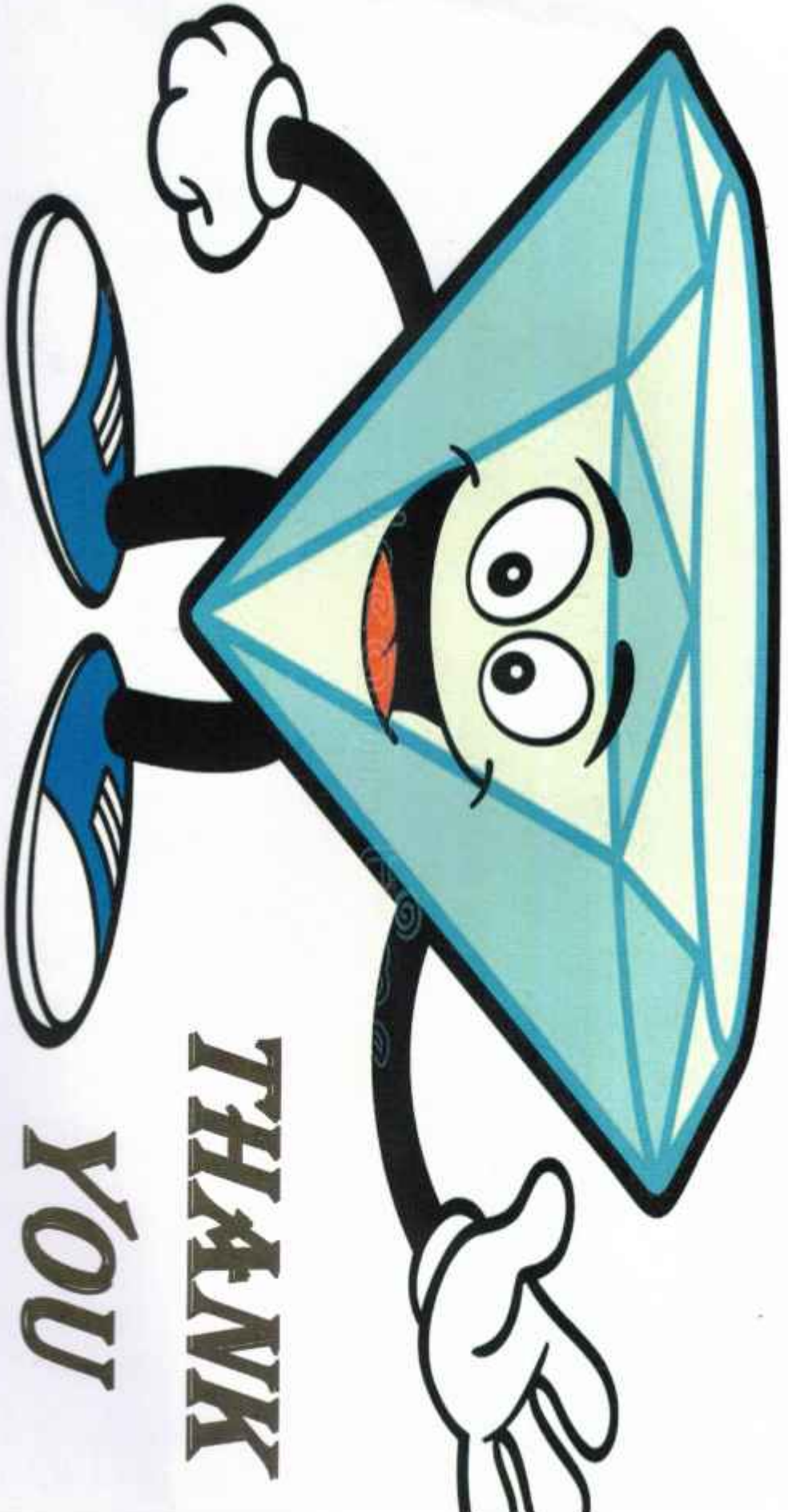
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CHAKBOM

Group 1/2/2024



**THANK
YOU**

Name: Shriya A. Kale

Std.: B. Ed. Div.: Sem II Roll No.: _____

Subject: Lesson Plan

Shriadevi College School Mark

INTRODUCTION SKILL

BIOLOGY

8th class.

Teacher activity	Student activity	Sub-skill
Teacher introduce & ask questions.	Students answer correctly.	Initial statement
1) what is a cell?	Ans. Cell is the structural & functional unit of life.	Previous knowledge
2) what is a tissue?	Ans. Tissue is a group of cells.	Motivational skill
3) A main difference between animal cell & plant cell?	Ans. Animal cell lacks cell wall.	
4) what cell-organelles can you tell?	Ans. Nucleus, RER, SER, lysosome, vacuoles etc.	Link previous knowledge to new one.
5) what is the function of mitochondrion?	Ans. It supplies & generates energy.	Student attention.

So, students, today, we will learn about cell and cell organelles.

INTRODUCTION SKILL
CHEMISTRY

Easton
Vidyalokhan
DATE
PAGE

9th class

Teacher activity	Student activity	Sub-skill
1) what is an element?	Ans. An element is a substance that is completely made up of only one atom.	Previous Knowledge
2) what are different types of elements?	Ans. They are metals, non-metals and metalloids.	Motivational skill
3) give examples?	Ans. Carbon, Hydrogen, oxygen	Motivational skill
4) what type of element is carbon?	Ans. It is a non-metallic element.	Link previous knowledge to the new one.
5) in which form does it occur in nature?	Ans. It occurs in a form in the nature.	Link previous knowledge. Student attention.

QUESTIONING SKILL
BIOLOGY

Cell-cell organization
Vidyalokhan
DATE
PAGE

8th class

Questioning skill	Student activity	Sub-skill
Teacher asks questions.	Students answer correctly.	
1) what are organelles?	Ans. They are the organs of the cell.	Low level question
2) what is the function of the nucleus?	Ans. Controls all the metabolic activities of cell.	Middle level question
3) what are the activities that consume cellular energy?	Ans. Endocytosis and exocytosis.	
4) How can we see a cell?	Ans. With the help of electron microscope.	High level question
5) what is a plasma membrane?	Ans. It separates the cell components from external environment.	

QUESTIONING SKILL
CHEMISTRY

Carbon
Vidyakhoran
DATE
PAGE

9th class

Questioning skill	Student activity	Sub-skill
1) Give examples of substances having carbon?	Ans. Diamond and graphite	Low level question
2) What is the melting point of diamond?	Ans. The melting point of diamond is 3500°C .	Knowledge-objective question
3) Define crystalline form of C atoms?	Ans. Substance which have definite arrangement of atoms.	Middle level question
4) Why graphite has less melting point?	Ans. Because it is made by pentagon carbon	High level question
5) What are the properties of diamond?	Ans. ① Hardest substance ② Does not dissolve in any solvent.	

EXPLANATION SKILL
CHEMISTRY BIOLOGY

Carbon
Vidyakhoran
DATE
PAGE

9th class

Explanation skill	Student activity	Sub-skill
<p>Explanation skill</p> <p>"Today we are going to learn about carbon an important element."</p> <p>→ Carbon is a non-metallic element & is denoted by 'C'.</p>	Students listen carefully	Initial statement Explanation-conjunction
<p>→ Atomic number is 6.</p> <p>→ Group number is 14.</p> <p>→ It's electronic configuration is 2, 4 and valency is 4.</p>	Students write in their notebooks	Purposive recapitulation
<p>→ Carbon compounds are of two types - organic & inorganic.</p>	Students listen carefully	Explanation-conjunction
<p>→ Organic compound are obtained from plants directly & indirectly.</p>	Students write it down	
<p>→ Today we learnt about carbons.</p>		Final statement

Cell-cell organelles.

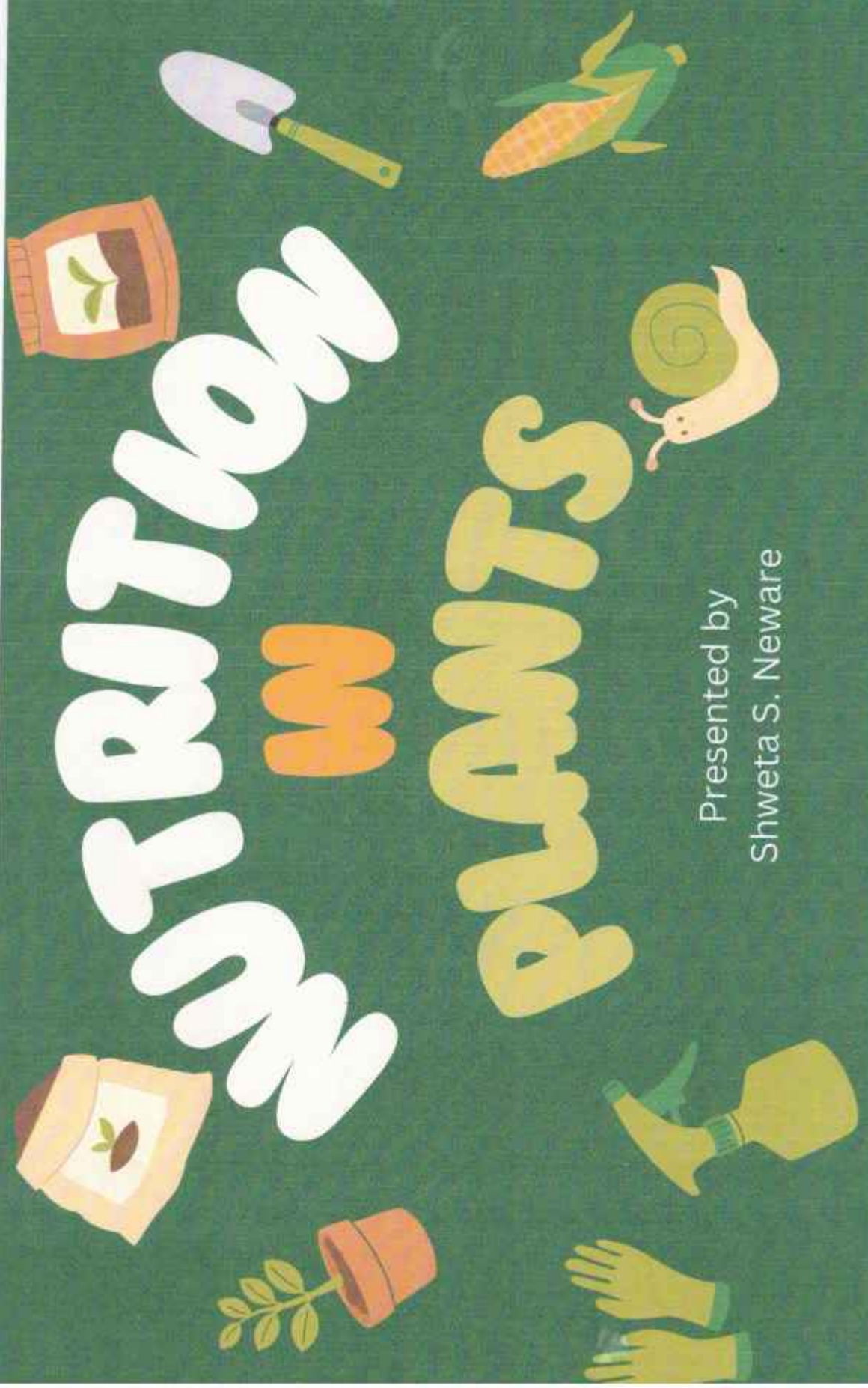
EXPLANATION SKILL

BIOLOGY

8th Class

Explanation	skill	Student activity	Sub-skill
Today we are going to learn about cell-cell organelles.			Initial statement
→ Cell is the structural & functional unit of life.		Students listen carefully.	
→ The components of cell.		Students noted down in their notebooks.	Explanation conjugation
① Cell membrane			
② Cell wall			
③ Lysosome			
④ Plastids			
→ Cells can be seen with the help of microscope.		Students listen carefully	Responsive recapitulation
→ The cell-organelles are nucleus, vacuoles, mitochondria, RER, SER, golgi complex, chloroplast etc.		Students notes it down.	Explanation conjugation
So, today, we learnt about cells & cell organelles.			Final statement

Signature
4/6/2024



NUTRITION IN PLANTS

Presented by
Shweta S. Neware

INTRODUCTION

- Living organisms such as plants and animals survive on food.
- The food gives them the energy to perform several activities in their life and helps in the growth.



NUTRIENTS



- Certain substances are present in the foods that help in the survival of the organisms. These special substances are called nutrients for example, proteins, vitamins, carbohydrates, minerals and fats.
- Some living organisms like plants synthesize their food by themselves while others such as animals depend upon the plants and other animals for their food.



CELLS IN LIVING ORGANISMS

Cells are tiny units that help make up a living organism. Hence they are also called building blocks of an organism.

A cell is constituted of three major parts :

- A thin outer layer called the cell membrane.
- A spherical structure located at the centre of the cell called a nucleus.
- A jelly-like substance that surrounds a nucleus called the cytoplasm.



SOIL

Soil holds the plants up. Roots grow down into the soil. Soil provides nutrients and water.



SUNLIGHT

Plants require sunlight as their energy source for photosynthesis, a process which converts carbon dioxide and water into glucose.



WATER

Water helps move nutrients from the soil into the plant.

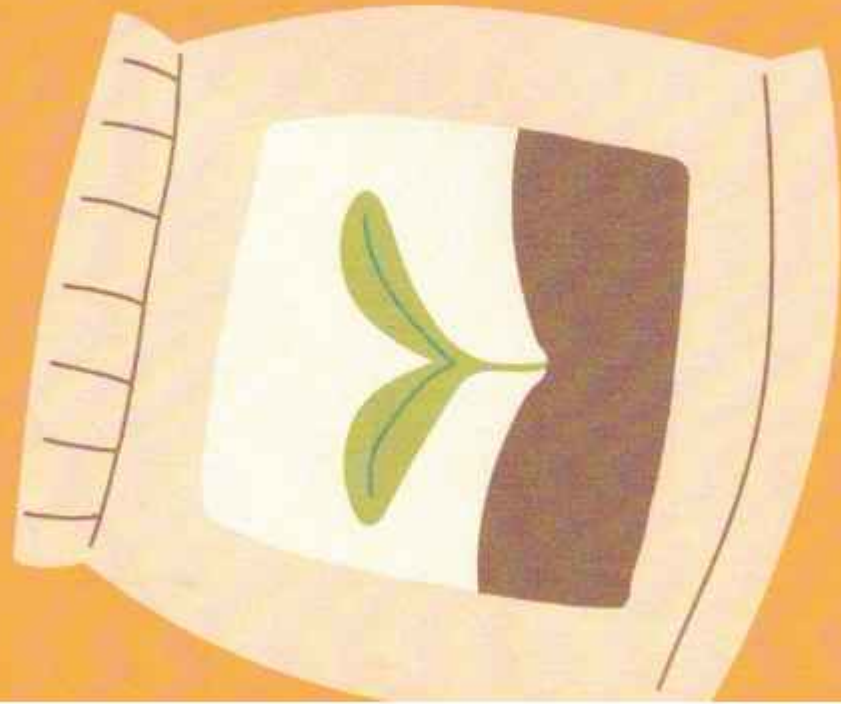
Too much water can cause a plant's roots to rot. Too little water can cause a plant to wilt or droop.



AIR

Plants need oxygen to make food and to have energy. Plants cells release their own energy by breaking down sugars and using up oxygen.

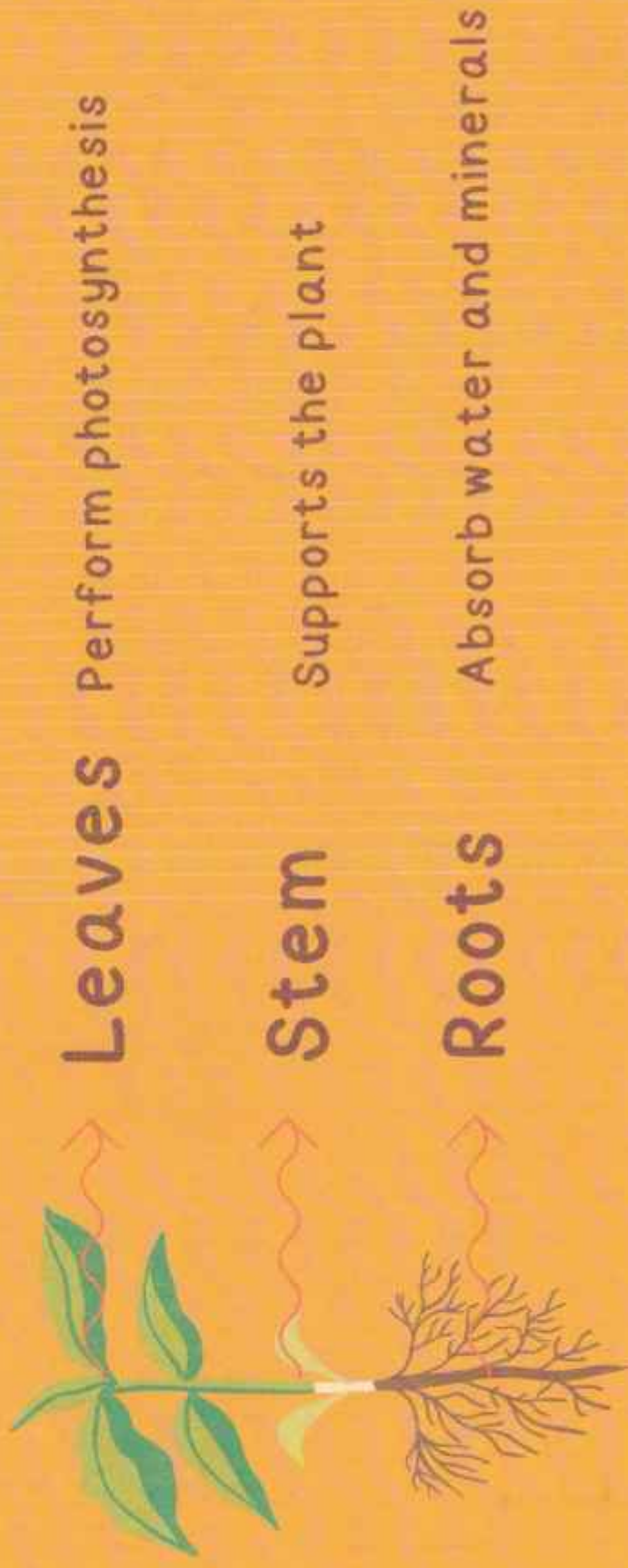




NUTRIENTS

Plants need nutrients in order to germinate, grow, fight off pests and reproduce.

Each part has a specific job
in order to keep the plant healthy:



HOW DO PLANTS PREPARE THEIR FOOD?

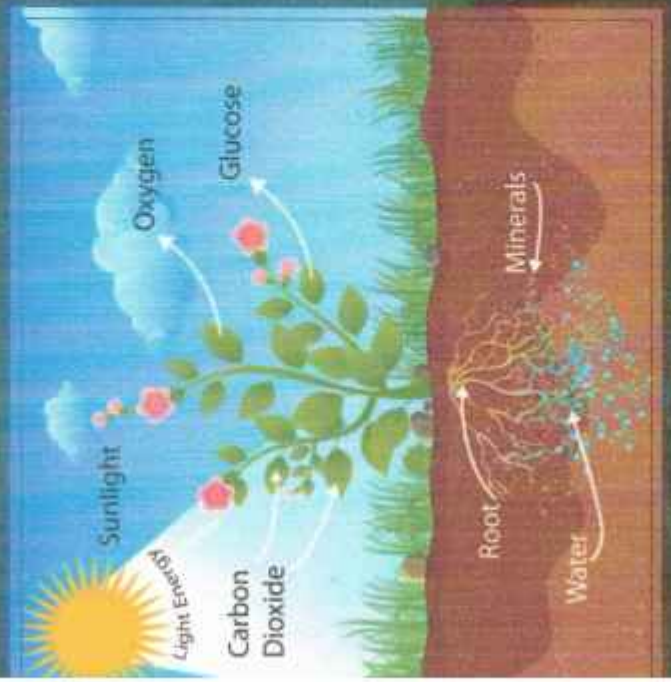
Plants prepare their food with the help of certain raw materials that they gather from their surroundings:

- Water
- Carbon Dioxide
- Sunlight
- Minerals
- Chlorophyll

The process by which plants prepare their food by using these raw materials is called Photosynthesis.



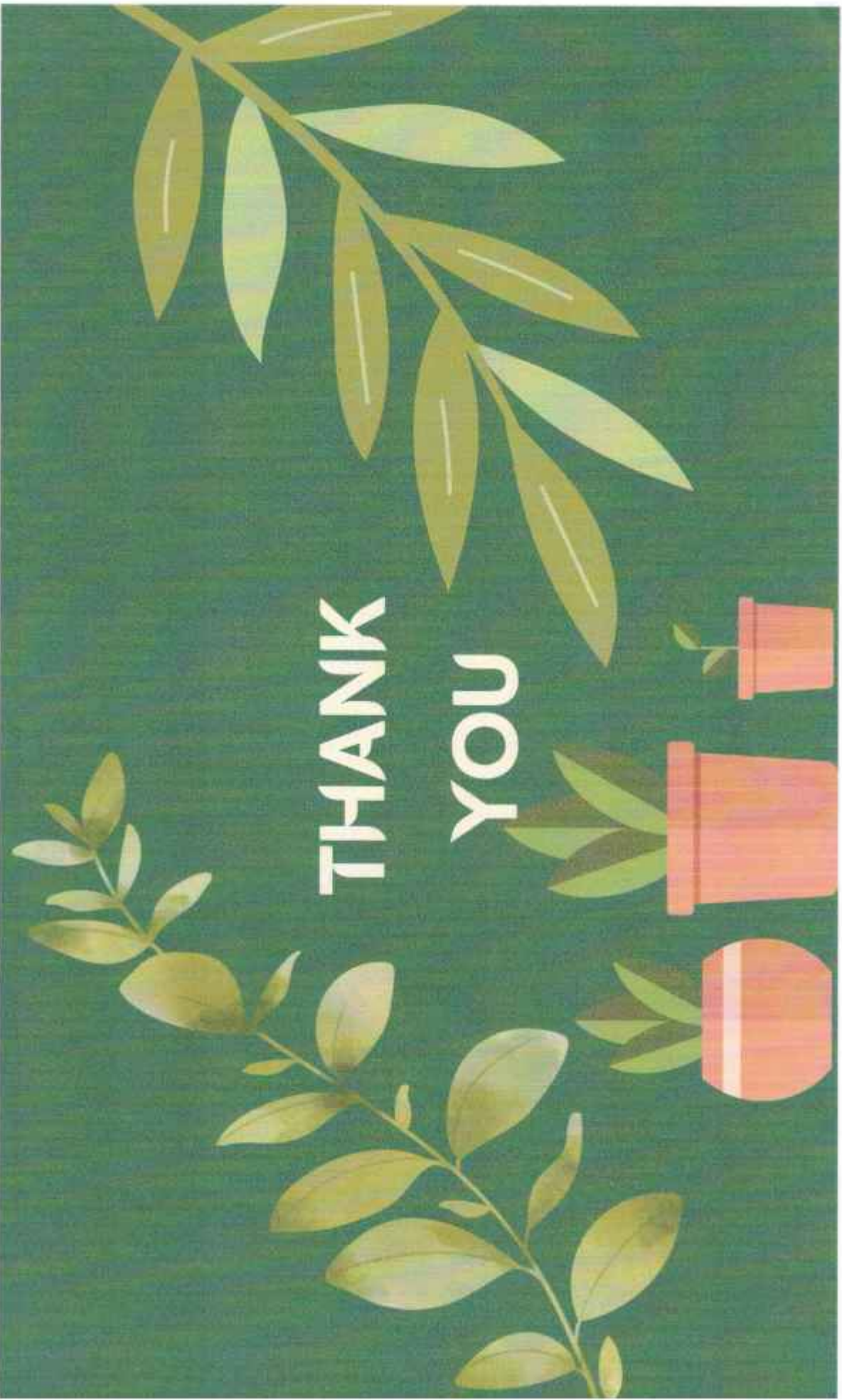
PROCESS OF PHOTOSYNTHESIS



- Carbon dioxide is taken in through tiny pores on the leaves called stomata.
- Water and minerals that are required for the process are transported to the leaves from the roots through the stem.
- Chlorophyll helps the leaves use the energy from the sunlight to prepare food using the carbon dioxide, water and minerals.
- Oxygen is released as a by-product from this process.



THANK
YOU



UNDERSTANDING ENVIRONMENTAL ISSUES

Environmental issues encompass a wide range of challenges facing our planet, from climate change and pollution to deforestation and loss of biodiversity.

Presented by
Shweta Neware
2nd Semester



MAJOR ENVIRONMENTAL ISSUES

- Global Warming and Climate Change
- Air Pollution
- Water Pollution
- Deforestation
- Biodiversity Loss
- Waste Management



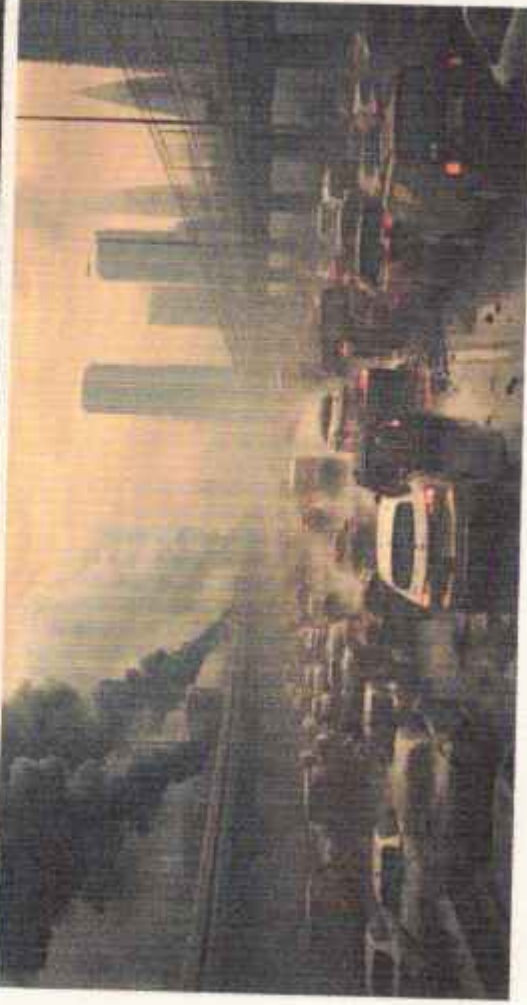
CLIMATE CHANGE

This refers to long-term shifts in temperature, precipitation patterns, and other aspects of Earth's climate. Human activities, such as burning fossil fuels and deforestation, are major contributors to climate change, leading to rising global temperatures, sea level rise, extreme weather events, and disruption of ecosystems.



AIR POLLUTION

Emissions from vehicles, industrial processes, and burning fossil fuels contribute to air pollution, which can have serious health effects on humans and animals. Common air pollutants include particulate matter, nitrogen oxides, sulfur dioxide, and volatile organic compounds.



WATER POLLUTION

Water pollution is the contamination of water bodies (such as rivers, lakes, oceans, groundwater, and aquifers) by harmful substances, making it unfit for its intended use and harmful to ecosystems and human health.



DEFORESTATION

The clearing of forests for agriculture, logging, and urban development is a significant driver of habitat loss, biodiversity decline, and climate change. Deforestation disrupts ecosystems, contributes to greenhouse gas emissions, and reduces the planet's capacity to absorb carbon dioxide.



LOSS OF BIODIVERSITY

Loss of Biodiversity: Human activities, such as habitat destruction, overexploitation of natural resources, pollution, and climate change, are causing a rapid decline in biodiversity. This loss of species diversity threatens ecosystems, disrupts food chains, and reduces the resilience of ecosystems to environmental changes.



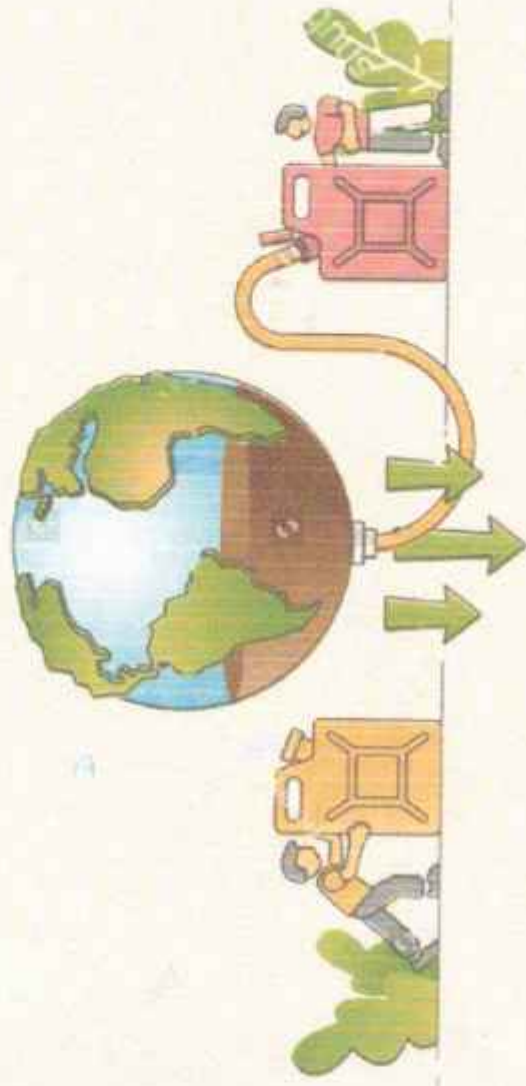
WASTE MANAGEMENT

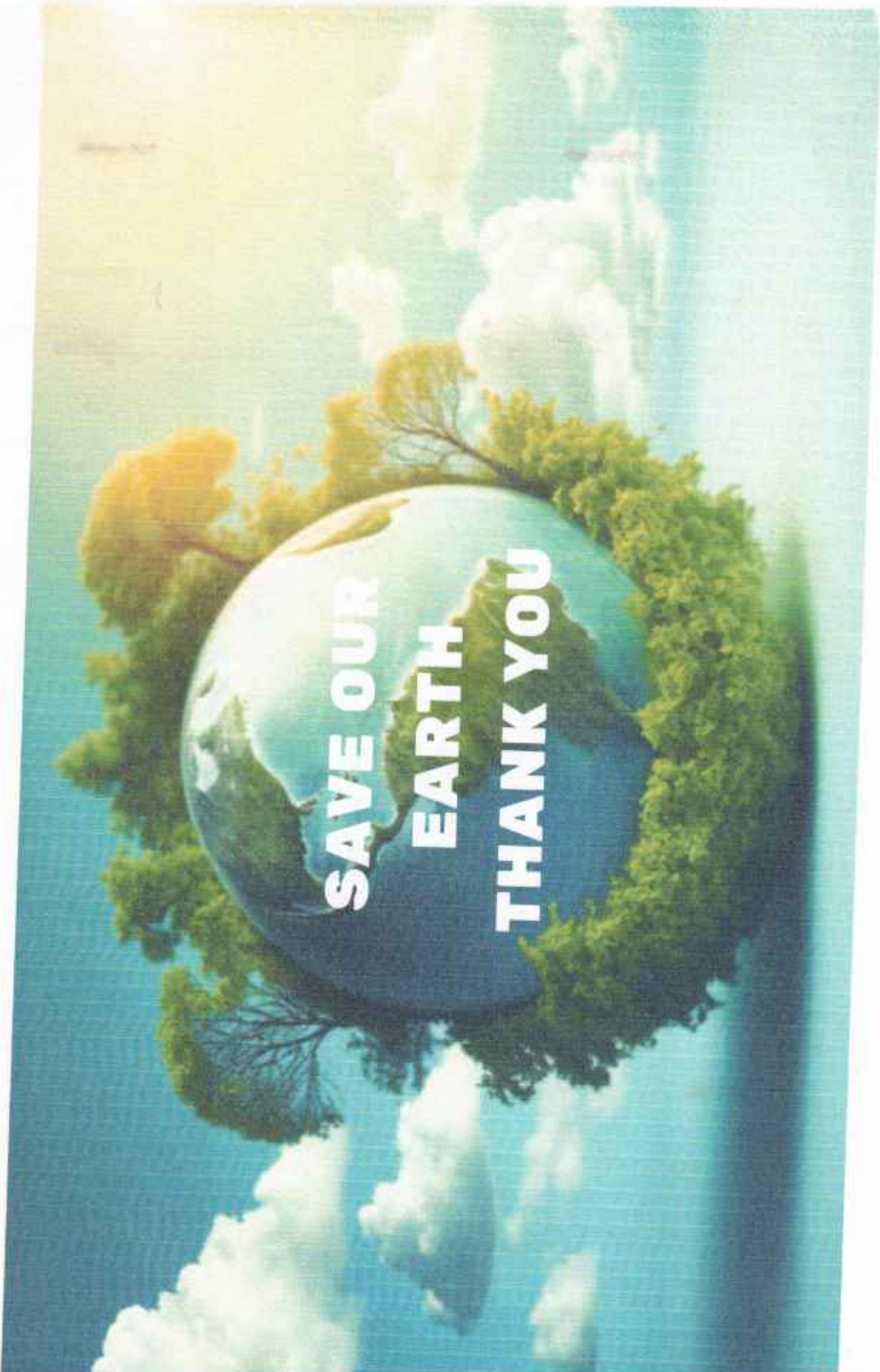
Improper disposal of waste, including plastic pollution, electronic waste, and hazardous materials, poses environmental and health risks. Landfills, incineration, and littering contribute to air and water pollution, harm wildlife, and degrade landscapes.



RESOURCE DEPLETION

The unsustainable extraction and consumption of natural resources, such as fossil fuels, minerals, and freshwater, are depleting finite resources and causing environmental degradation. Transitioning to renewable energy sources and adopting sustainable resource management practices are crucial for mitigating this issue.





**SAVE OUR
EARTH
THANK YOU**

APPENDIX

II

SHEELADEVI COLLEGE OF EDUCATION
List of Students for the Academic year 2023-24

Sr.No	Name of the Student
1	AISHWARYA DNYANESHWAR JIWTODE
2	AMRUTA JAYPRAKASH SINGH
3	ASHWINI NATTHUJI VAIDYA
4	DIPALI RAJENDRA ANNERWAR
5	DIVYA BHAGATSING BHAVMIRI
6	HEERA RAJESH MANNI
7	JAYA DEVIDAS PAWADE
8	KALYANI FANINDRAKUMAR GAUTAM
9	KARINA AFROJ KHAN
10	KARISHMA BHOJRAM PRSHURAMKAR
11	MEGHA VINAYAK BAGMARE
12	MINAL VILASRAO CHUDHARI
13	NALINI UMAKANT HULKE
14	NEHA NANDKISHOR SAHARE
15	NIDHI MUKESH RATHI
16	NUTAN CHANDRAMOULI KUSHWAHA
17	PALLAVI VIJAY GUNDALWAR
18	PALLAVI YOGRAJ YELE
19	POOJA KESHAVRAO PANSE
20	PRAJAKTA MANIKLAL KHOBRADE
21	PRATIKSHA BHARAT SHARMA
22	PRERNA SANJAY MESHRAM
23	PRIYA PUSHPRAJ PATHAK
24	PRIYTAMA RAJAN RODGE
25	RANJANA PRAMODRAO SARDAR
26	REETA SUKHDEO KARAMKAR
27	REKHA SHAMRAOJI RAUT
28	RITI BHARDWAJ



Bdm
Principal
Sheela Devi College of Education
Wadi Nagour-23

SHEELADEVI COLLEGE OF EDUCATION

List of Students for the Academic year 2023-24

29	ROHAN RAJESH NAGARKAR
30	SANDHYA NAKULESHWAR PANDEY
31	SHABNOOR IZHAR ALI SHEIKH
32	SHARWARI GAJANAN GHAGRE
33	SHILPA ARUN INGLE
34	SHILPI SHAIENDRANATH BARAI
35	SHRIYA ANIL KALE
36	SHUBHANGI PANDHARI SILUTKAR
37	SHUBHANGI SANTOSH KALE
38	SHWETA SHANKARRAO NEWARE
39	SNEHA BHUJANG MEHARE
40	SNEHAL RANGRAO GECHODE
41	SUMAN HANSRAJ THAKUR
42	SUMAN KETAN SUKHDEVE
43	SUPRIYA KEWALRAM GHUTKE
44	SWATI RAJENDRA KASHID
45	TEJASWINI PRADIPRAO ARODE
46	TEJASWINI WANKHEDE
47	TRISHALA PRAKASH GAJBHIYE
48	VAISHALI YADAV BARSAGADE
49	VIBHA BABURAO RAMTEKE
50	VIDHYA VILAS FULKE



B. S. M.
Principal
Sheela Devi College of Education
Ward, Nagpur 23