

COLLEGE OF EDUCATION, NAGAON



Lesson Plan

Submitted By

Name: SHAHNAZ BEGUM

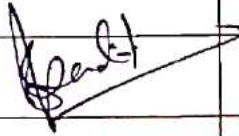
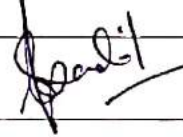


Session: 2022-2023

Roll No.: 50 (UA-221-243-0001)

Method Subject : MATHEMATICS .

B.Ed 1st year.

COLLEGE OF EDUCATION, NAGAON
LESSON PLAN
METHOD PAPER:-MATHEMATICS

Sl No	Date	Class	Topic/Lesson	Sign of Supervisor	Sign of Head of Institution
1	19/4/2023	IX(B)	Surface Area and Volumes		
2	24/4/2023	VI(A)	Mensuration (I)		
3	25/4/2023	VI(A)	Mensuration (II)		
4	26/4/2023	VIII(B)	Quadrilateral (I)		
5	27/4/2023	VIII(B)	Quadrilateral (II)		
6	28/4/2023	IX(B)	Linear Equation in two variables		
7	2/5/2023	VII(B)	Lines and Angles.		
8	3/5/2023	VIII(B)	Square and Square Roots		
9	8/5/2023	VIII(A)	Cube and Cube Roots (I)		
10	9/5/2023	VIII(A)	Cube and Cube Roots (II)		
11	10/5/2023	IX(B)	Polynomial.		
12	12/5/2023	VI(A)	Integers.		
13	15/5/2023	VII(A)	Congruence of Triangles (I)		
14	16/5/2023	VII(A)	Congruence of Triangles (II)		
15	18/5/2023	IX(B)	Heron's Formula		

Principal
Dawsoo H.S. & M.P. Sch
Nagaon :: Assam

• LESSON PLAN - 1

• Identification of Data :-

Name of the school: Dawson
H.S. & M.P. School,
Class - IX (B)
No of students - 59
Avg age of students - 14⁺
Duration - 45 minutes.
Date - 19/4/2023

Subjects - Mathematics.

Lesson - Surface area and
volumes.

Topic - Surface area of a
right circular cylinder.

Textbook - Ganit.

Name of the Teacher -
Shahnaz Begum.

Roll nos - 50

• General Objectives :-

1. Pupils will acquire the knowledge of terms, concepts, symbols and definitions etc.
2. To develop skills of pupils in solving problems by various possible methods.
3. To develop thinking and reasoning power of the pupil.
4. To increase the power of concentration of students.
5. To gain confidence and competence of students in learning mathematics.
6. To enjoy solving mathematical problems of everyday life.

• Teaching Aids :-

General Aids - Blackboard, chalk, duster, pointer.

Specific Aids - A chart showing formula of surface area of right circular cylinder with a diagram.

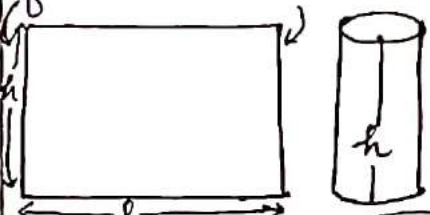
• Introduction -

Step	Assumed Previous Knowledge	Teacher's Activity	Pupils Activity
I N T R O D U C T I O N	Through questioning it is assumed that the pupils have previous knowledge about the topic.	<p>After entering the class, the teacher will first arrange the class properly. Then in order to motivate the pupils & to check their previous knowledge, she will ask some questions :-</p> <ol style="list-style-type: none"> 1) what is rectangle? 2) what is the area of a rectangle? 3) what is the formula for perimeter of rectangle? 4) what is the area of circumference of a circle? 5) what is a right circular cylinder? 6) Give some examples of right circular cylinder. 	<p>Pupils will greet the teacher.</p> <p><u>Ans</u> It is a quadrilateral with two opposite pairs of equal and parallel sides. Its all four angles are right angles.</p> <p><u>Ans</u> Length x Breadth</p> <p><u>Ans</u> $2(\text{Length} + \text{Breadth})$</p> <p><u>Ans</u> $2\pi r$, where $r \rightarrow$ radius of the circle.</p> <p><u>Ans</u> cylinder kept at right angle to a circular base.</p> <p><u>Ans</u> LPG Cylinder, Glass, pillar etc.</p>

• Announcement of the Topic :-

After being satisfied by the answers of pupils, the teacher will announce that today we are going to discuss about "Surface Area of a right circular cylinder". The teacher will write down the topic on the blackboard. The pupils take out their books and copies and note down the topic.

• Presentations :-

Step	Teaching point	Specific objective	Teacher's Activity	Pupils Activity	Learning outcome
P R E S E N T A T I O N	Surface area of right circular cylinder	Pupils will be able to define circular cylinder and show the derivation of the formula	<p>The teacher explains that by folding a rectangular sheet of paper it takes the shape of cylinder whose breadth is equal to height of the cylinder and the length of sheet is equal to the circumference of the circular base which is equal to $2\pi r$, where 'r' is radius of the circular base.</p>  <p>The area of the sheet gives us the surface area of the curved surface of the cylinder that is</p> <p>= Area of the rectangular sheet = Length \times Breadth.</p>	Pupils will write down the derivations of the formula for surface area of a right circular cylinder.	Pupils are able to define circular cylinder and show the derivation of the formula.

• Presentation :-

Step	Teaching point	Specific Objective	Teacher's Activity	Pupils Activity	Learning Outcome
P R E S E N T A T I O N	Surface area of right circular cylinder	Pupils will be able to define circular cylinder and show the derivation of the formula.	$= (\text{Perimeter of the base of the cylinder}) \times h$ $= 2\pi rh.$ $\therefore \text{Surface area of a right circular cylinder} = 2\pi rh.$	Pupils will write down the derivations of the formula for surface area of a right circular cylinder.	Pupils will be able to define circular cylinder and show the derivation of the formula.
S E N T A T I O N	Application of the formula of surface area of a right circular cylinder	pupils will be able to apply the formula.	<p>The teacher will give some examples related to the formula for surface area of a right circular cylinder.</p> <p>1) The curved surface area of a right circular cylinder of height 14 cm is 88 cm^2. Find the diameter of the base of the cylinder.</p> <p><u>Solⁿ</u></p> <p>Given, Surface area = 88 cm^2 height = 14 cm $\therefore 2\pi rh = 88 \text{ cm}^2$ $\Rightarrow r = \frac{88}{2 \times \frac{22}{7} \times 14}$ $= \frac{88}{88} = 1 \text{ cm}$ $\therefore \text{diameter} = 2 \times r$ $= 2 \times 1 = 2 \text{ cm}$</p>	pupils will note down the examples in their copies.	Pupils will be able to apply the formula (Application)
T A T I O N				Pupils will not down the examples in their copies.	

• Presentation :-

Step	Teaching Point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning Outcome
P R E S E N T A T I O N	Application of the formula for surface area of right circular cylinder	Pupils will be able to apply the formula.	<p>2) The height of a cylindrical pillar is 3.5 m and diameter is 50 cm. Find the cost of painting on the curved surface of the pillar at Rs 12.50 per m^2.</p> <p>Solⁿ diameter = 50 cm \therefore Radius = 25 cm $h = 3.5$ m \therefore Surface Area = $2\pi rh = 2 \times \frac{22}{7} \times 25 \times 3.5$ $= 5.5$ m^2</p> <p>Now cost of painting per metre square = 12.50 Rs. \therefore Total Cost = (12.50×5.5) Rs $= 68.75$ Rs</p>	Pupils will write down the example in their copies.	Pupils will be able to apply the formula
E V A L U A T I O N	Evaluation	Pupils will be able to solve problems using the formula	<p>Now the teachers give a question to pupils to check their acquired knowledge.</p> <p>1) If radius of cylinder is 5 cm and height 7 cm. Find the curved surface area of the cylinder.</p>	<p>Pupils will write down the question and try to solve</p> <p>Solⁿ, Radius = 5 cm height = 7 cm \therefore Curved surface Area = $2\pi rh$ $= 2 \times \frac{22}{7} \times 5 \times 7$ $= 44 \times 5$ $= 220$ cm^2</p>	Pupils will be able to solve problems using the formula. (Application).

• CLOSURE

Step	Teacher's Activity	Pupil's Activity
C L	<p>The teacher will summarise the main points of the topic on the blackboard and then to check the pupil's acquired knowledge she will ask some questions again -</p>	<p>Pupils will listen attentively and noted down the important points and try to give answers.</p>
O S	<p>Q) The inner diameter of a cylinder is 3.5 m. Its deep 10m. Find -</p> <p>a) Its inner curved surface area.</p> <p>b) Cost of painting, if the rate is 40/m².</p>	<p>Ans $2 \times \pi \times r \times h$ $= 2 \times \frac{22}{7} \times (\frac{3.5}{2}) \times 10$ $= 110 \text{ m}^2$</p> <p>Ans cost at per m² $= 40/-$ \therefore Total cost $= (110 \times 40) / -$ $= 4400 / - //$</p>
U	<p>Now, the teacher will give the home assignment on the blackboard.</p> <p><u>Home work</u></p>	<p>Pupils will noted down the home assign</p>
R	<p>Q. If radius = 7 cm, height = 5cm what will be the curved surface area?</p>	<p>ment.</p>
E	<p>Now, the teacher will clear the board, thank the class and leave the class with a smiling face.</p> <p style="text-align: center;"><u>Sun</u> <u>S/Sorah</u></p>	<p>pupils will stand up and thank to the teacher.</p>

LESSON PLAN-2

• Identification of details :-

Name of the school :- Dawson
H.S. & M.P. school.
class :- VI(A)
No of students :- 33
Avg age of students :- 11⁺
duration :- 45 minutes
date :- 24/4/2023

Subject :- Mathematics.
Lesson :- Mensuration (I)
Topic :- Perimeter.
Text book :- Mathematics
Name of the teacher :-
Shahnaz Begum.
Roll no :- 50

• General Objectives

- 1) pupils will acquire the knowledge of terms, concepts, symbols and definitions etc.
- 2) to develop skill of student's in solving problems by various possible methods.
- 3) to develop thinking and reasoning power of the pupils.
- 4) to increase the power of concentration of students.
- 5) to gain confidence and competence of students in learning mathematics.
- 6) to enjoy solving mathematical problems of everyday life.

• Teaching Aids :-

General Aids :- Blackboard, chalk, cluster, pointer.

Specific Aids :- A chart showing how to find the perimeter of all the figures.

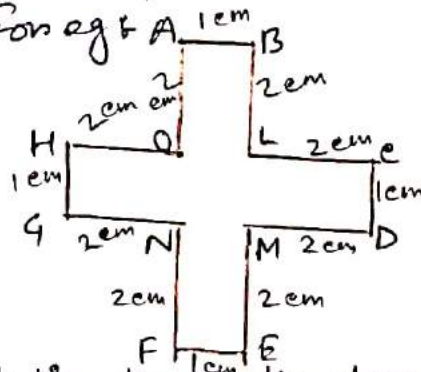
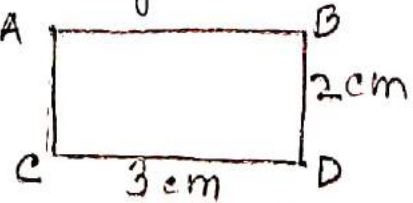
● Introduction:-

Step	Assumed Prev. Knowledge	Teacher's Activity	Pupil's Activity.
1 N T R O D U C T I O N	through questioning it is assumed that pupils have previous knowledge about the topic.	<p>After entering into the class, the teacher will first arrange the class properly, then in order to motivate the students and to test their previous knowledge, she will ask some questions—</p> <p>i) What do you do in your leisure time?</p> <p>ii) What kind of games do you play?</p> <p>iii) Where do you play the games like cricket, foot ball?</p> <p>iv) If someone tells you to measure the whole boundary of the playground, then what is the result called in mathematics?</p>	<p>Pupils will try to answer the questions asked by the teacher.</p> <p>Ans We play games in our leisure time.</p> <p>Ans Cricket, Carrom, foot ball, basket ball, Video-games etc.</p> <p>Ans In the playground.</p> <p>Ans No answer.</p>

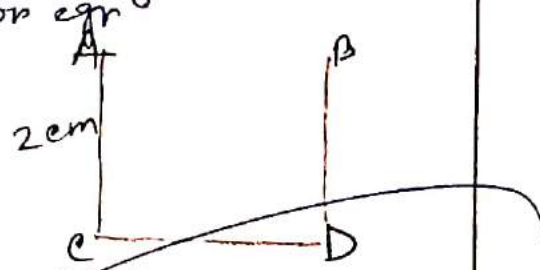
● Announcement of the topic:-

After getting satisfactory response from the students the teacher will announce that today we are going to discuss about the topic "Perimeter". After announcing the topic the teacher will write the topic on the black-board and advise the pupils to open their textbooks and copies. The pupils will write down the topic's name in their respective copies.

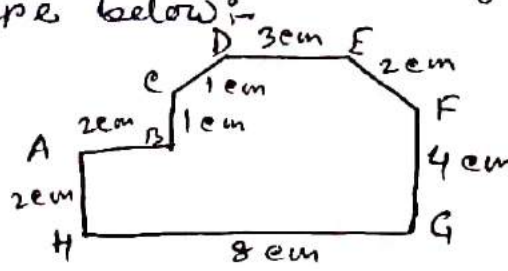
• Presentation 6 -

Step	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning Outcome
PRESENTATION	Perimeter	pupils will be able to define perimeter	<p>Now, the teacher will explain that the distance covered along the boundary forming a closed figure when we go around the figure once, is called perimeter.</p> <p>For eg: </p> <p>Perimeter of the above figure is =</p> $AB + BC + CD + DE + EF + FG + GH + HO + OA$ $= (1 + 2 + 2 + 1 + 2 + 2 + 1 + 2 + 2) \text{ cm}$ $= 20 \text{ cm.}$	pupils will listen carefully and note down in their copies.	pupils will be able to define perimeter.
TITLES	Perimeter of a Rectangle	pupils will be able to use the formula of finding perimeter of a rectangle.	<p>Perimeter of a rectangle is the sum of the sides of the rectangle.</p>  <p>Perimeter of the rectangle ABCD =</p>	pupils will listen carefully and note down in their copies.	pupils will be able to use the formula of finding perimeter of a rectangle.

• Presentations -

Step	Teaching point	Specific objectives	Teacher's Activity	Pupil's Activity	Learning outcome
P R E S E N T A T I O N	Perimeter of Rectangle	Pupils will be able to use the formula of finding perimeter of a rectangle.	$= AB + BC + CD + AD$ $= (AB + CD) + (AD + BC) \text{ cm}$ $= (AB + AB) + (BC + BC) \text{ cm}$ <p>(∵ opposite sides of a rectangle are equal)</p> $= 2AB + 2BC$ $= 2(AB + BC)$ <p>∴ Perimeter of a rectangle = $2 \times (\text{Length} + \text{Breadth})$</p> <p>Perimeter of a square or any regular shape is the sum of the sides of the shape.</p> <p>For e.g.</p>  <p>Similarly, Per square ABCD is = $AB + BC + CD + AD$</p> $= 4 \times AB$ <p>(∵ sides of a square are equal)</p> <p>Perimeter of a regular figure is basically No. of sides \times length of one side.</p>	Pupils will listen carefully and note down in their respective copies.	pupils will be able to use the formula of finding perimeter of a rectangle.
	Perimeter of regular shapes	pupils will be able to use the formula	Perimeter of a regular figure is basically No. of sides \times length of one side.	Pupils will listen attentively and note	Pupils will be able to use the

• Closure :-

Step	Teacher's Activity	Pupil's Activity
C V O	<p>Now the teacher will summarise the class and highlight the main points on the blackboard and will ask some questions agains to check the pupil's acquired knowledge.</p> <p>1) Find the perimeter of a regular pentagon of side 5cm.</p>	<p>Perimeter of a regular pentagon $= \text{No of sides} \times \text{length of one side}$ $= (5 \times 5) \text{cm} = 25 \text{cm}$</p>
S U	<p>2) Find the perimeter of this figure below:-</p> 	<p>Perimeter of the figure ABCDEFGH is $= AB + BC + CD + DE + EF + FG + GH + HA$ $= (2 + 1 + 1 + 3 + 2 + 4 + 8 + 2) \text{cm}$ $= 23 \text{cm}$</p>
R	<p>After being satisfied with the answers of the pupils, the teacher will give the homework.</p> <p><u>Homeworks</u> -</p> <p>Q, Find the perimeter of a regular octagon of side 12cm.</p>	<p>pupils will note down the home work in their copies.</p>
E	<p>Now, the teacher will clean the blackboard, thank the class & leave the class.</p> <p>Seen <u>_____</u></p>	<p>Pupils will also thank the teacher.</p>

LESSON PLAN :- 3

• Identification of Data :-

Name of the school :- Dawson
H.S. & M. P. School,
class :- VI (A)
No. of students :- 33
Avg. age of students :- 11⁺ yrs.
duration :- 45 minutes.
Date :- 25/4/2023

Subject :- Mathematics.
Lesson :- Mensuration (II)
Topic :- Area
Textbook :- Mathematics.
Name of the Teacher :-
Shahnaz Begum
Roll no :- 50

• General Objectives

1. Pupils will acquire the knowledge of terms, concepts, symbols and definitions etc.
2. To develop skill of pupils in solving problems by various possible methods.
3. To develop thinking and reasoning powers of the pupils.
4. To increase the power of concentration of the pupils.
5. To gain confidence and competence in pupils in learning mathematics.
6. To enjoy solving mathematical problems of everyday life.

• Teaching Aids :-

General Aids :- Black-board, duster, chalk, pointer

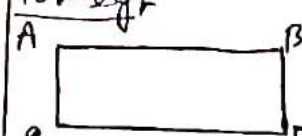
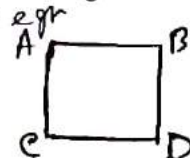
Specific Aids :- A chart showing formula for area of rectangle, circle & square.

• Introduction :-

Step	Assumed previous knowledge	Teacher's activity	Pupil's activity
I N T R O D U C T I O N	Through questioning it is assumed that pupils have previous knowledge about the topic.	After entering into the class, the teacher will first arrange the class properly, then in order to motivate the pupils and to check their previous knowledge, she will ask some questions:-	Pupils will take carefully and try to answer the questions asked by the teacher.
		1) What are two dimensional shapes?	Ans Two dimensional shapes having width and height.
		2) Give two examples of 2D shapes?	Ans Rectangle, Square, triangle.
		3) What is the total length of the boundary of a 2D shape called?	Ans perimeter.
		4) What will we call the space within the perimeter of a 2D shape?	Ans No answer.

• Announcement of the topic :- After getting satisfactory response from the students, the teacher will announce the topic saying that today we will discuss about the topic "Area" of two dimensional shapes. Then, the teacher will write the name of the topic on the blackboard and advise to write it on their respective note book and open their textbooks. Pupils will write down the topic's name in their copies.

● Presentation :-

Step	Teaching point	Specific objective	Teacher's activity	Pupil's activity	Learning outcome
P R E S E N T A T I O N	Area	Pupils will be able to define area.	The teacher will explain that - Area is the amount of space within the perimeter of a 2D shape. It is measured in square units such as cm^2 , m^2 etc.	Pupils will listen carefully and note down in their copies.	Pupils will be able to define area.
	Area of a rectangular shape	pupils will be able to find area of a rectangle.	Area of a rectangular shape can be found by multiplying its length and breadth. For egr  Area of the rectangle ABCD is $= \boxed{AB \times BD}$	pupils will listen carefully and note down in their copies.	pupils will be able to find area of a rectangle.
	Area of a square	pupils will be able to find area of a square	Area of a square shape can be found by doing square of the side of the square. For egr  Area of the square ABCD is $= \boxed{AB^2}$	pupils will listen carefully and note down in their copies.	pupils will be able to find area of a square.

• Closure:-

Step	Teacher's Activity	Pupil's Activity
C L	<p>Now, the teacher will sum up the class and highlight the main points on the black board and to check the acquired knowledge of the students she will ask some questions again -</p>	<p>pupils will listen attentively and note down in their copies.</p>
O	<p>1) Find the area of a circle of radius 8 cm.</p>	<p>Solⁿ Area of circle = πr^2 radius = 8 cm \therefore Area = πr^2 $= 3.14 \times 64$ $= 200.96$ cm^2 //</p>
S U	<p>2) Find the side of a square which area is 81 cm²</p>	<p>Solⁿ Area of square is = (length)² length² = 81 cm \Rightarrow length = $\sqrt{81}$ $= 9$ cm //</p>
R	<p>Now, after being satisfied with the answers the teacher will give the homework -</p> <p><u>Homework</u></p> <p>1) Area of a circle is 72 cm². Find its radius.</p>	<p>pupils will write the homework in their copies.</p>
E	<p>Now, the teacher will clean the blackboard, thank the class and leave the class with a smiling face.</p>	<p>pupils will also convey thanks to the teachers.</p>

Lesson Plan-4

Identification of Data :-

Name of the school :- Dawson
Higher Sec. & M.P. School.

Class :- VIII (B)

No. of students :- 47

Avg. age of students :- 13⁺

Duration :- 45 minutes

Date :- 26/4/2023

Subject :- Mathematics.

Text book :- Mathematics.

Lesson :- Quadrilateral (1)

Topic :- Types of Polygon

Name of the teacher :-
Shahnae Begum.

Roll no :- 50.

General Objectives :-

- i) Pupils will acquire the knowledge of terms, concepts, symbols and definitions etc.
- ii) To develop pupil's skill in solving problems by various possible methods.
- iii) To increase the power of concentration of pupils.
- iv) To gain confidence and competence in learning by the pupils.
- v) To develop thinking and reasoning powers of the students.
- vi) To enjoy solving mathematical problems of everyday life of students.

Teaching aids :-

- i) General : Blackboard, chalk, duster, pointer.
- ii) Specific : Chart containing types of Polygons.

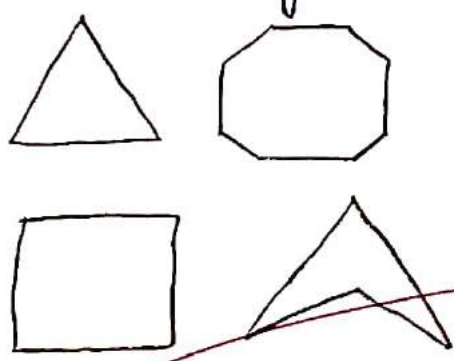
Introduction :-

Step	Assumed prev. Knowledge	Teacher's Activity	Pupil's Activity
I N T R O D U C T I O N	Through questioning, it is assumed that pupils have previous knowledge about the topic.	<p>After entering into the class with smiling face the teacher will first arrange the class properly then in order to motivate the students and to test their previous knowledge she will ask some questions:-</p> <ol style="list-style-type: none"> 1) what is a line? 2) what is a line segment? 3) What are closed figures? 4) what are the closed figures called which are made of only line segments? 	<p>The pupils will ^{listen} carefully and try to answer the following questions asked by the teacher.</p> <p><u>Ans</u> A line is an infinitely long one dimensional object with no width, depth & curvature.</p> <p><u>Ans</u> A line segment is bounded by two distinct points on a line.</p> <p>A figure which completely encloses an area.</p> <p><u>Ans</u> No answer.</p>

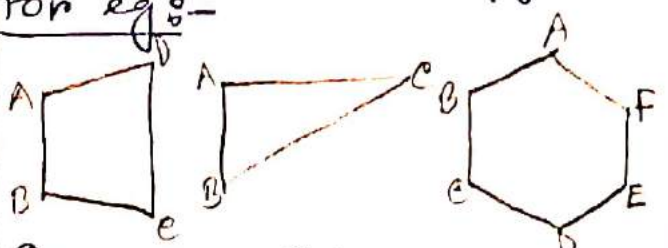
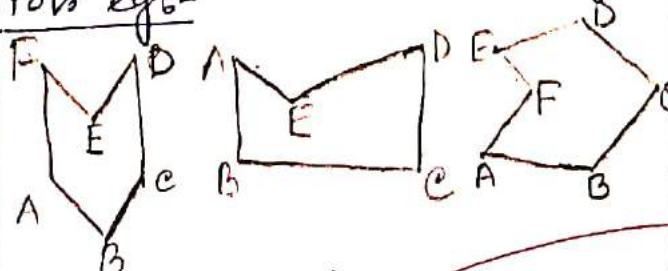
Announcement of the Topic

Being satisfied with the answers the teacher will announce that today we are going to discuss about polygons. Then she will write down the name of the topic on the blackboard. Pupils will write down the name of the topic on their respective copies.

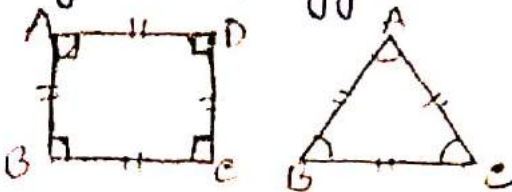
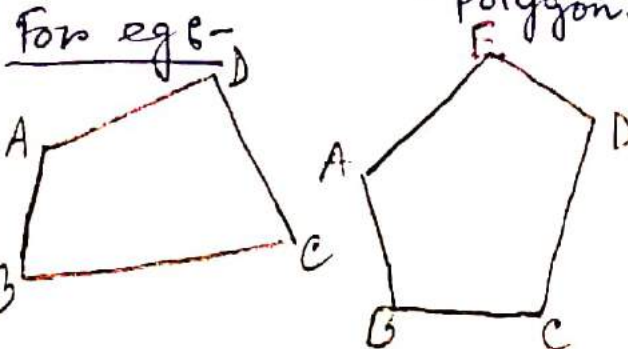
PRESENTATION :-

Step	teaching points	specific objective	Teacher's Activity	pupils Activity	Learning outcome
P R E S E N T A T I O N	Polygon	The students will be able to define polygon	<p>The teacher will illustrate polygons as a simple closed figures made up of only line segments. For eg:-</p>  <p>The teacher will further explain that on the basis of angle and sides polygons are of different types. For eg:-</p>	pupils will observe carefully and note down in their copies.	pupils are able to define polygon.





PRESENTATION :-








Sl. No.	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning outcome
P R E S E N T A T I O N	Convex polygon	Students will be able to identify the convex polygons.	<p><u>Convex Polygon:-</u></p> <p>A polygon where the interior angles are less than 180° and the diagonals are inside the polygon is called convex polygon.</p> <p>For eg:-</p> 	pupils will listen carefully and write down in their copies.	students are able to identify convex polygons.
	Concave polygon	Students will be able to identify the concave polygons.	<p><u>Concave Polygon:-</u></p> <p>A polygon where one of the interior angles are more than 180° and at least one diagonal is outside of the polygon is called concave polygon.</p> <p>For eg:-</p> 	pupils will listen carefully and write down in their copies.	pupils will be able to identify concave polygons.
	Regular polygon	Students will be able to identify the regular polygon.	<p>On the basis of some specific properties, convex polygons are classified into following types.</p> <p>i) <u>Regular Polygon:-</u> A polygon which is equilateral</p>	pupils will listen carefully and write down in their copies.	pupils are able to identify regular polygons.

PRESENTATION :-


Step	Teaching point	Specific objective	Teacher's Activity.	Pupils' Activity	Learning Outcome
P R E	Regular polygon	students will be able to identify the regular polygons.	and equiangular is called Regular polygon. For eg:- 	pupils will listen carefully and write down in their copies.	pupils are able to identify regular polygons.
S E N T A	Irregular polygon	students will be able to identify the irregular polygons.	ii) Irregular polygons:- A polygon which is not equilateral and equiangular is called irregular polygon. For eg:- 	pupils will listen carefully and write down in th	pupils are able to identify irregular polygon
E V A L U A T I O N	Evaluation	pupils will be able to identify all the types of polygons	The teachers will now ask some questions to test their acquired knowledge. i) what are polygons? ii) what are the two main types of polygon?	Ans polygons are simple closed figures made up of only line segments. Ans Convex & Concave Polygon.	

PRESENTATION:-

Step	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning outcome
P R E S E N T A T I O N	evaluation	pupils will be able to identify all the types of polygon	iii) Identify the convex & concave polygon from the following figures:- a)  b)  c)  d) 	<u>Ans</u> a) convex b) concave c) convex d) concave polygon	Identify
	Closure:-				

Step	Teacher's Activity	Pupil's Activity
C L O S U R E	The teachers will sum up the class, highlighting the main points in the blackboard. Then she will ask some questions to the students. 1. Draw a convex polygon. 2. Draw a concave polygon. 3. What is the difference between regular and irregular polygon	pupils will listen carefully and note down the main points from the board, written by the teacher. <u>Ans</u>  <u>Ans</u> 
E	Now, the teacher will give home assignment on the blackboard - i) Identify if the figures are polygon or not.  ,  ,  ,  , 	<u>Ans</u> The regular polygon is equilateral & equiangular but the irregular is not. pupils will write down the question in their respective copies.

Closure -

Step	Teacher's Activity	Pupil's Activity
C L O S U R E	<p>ii) Give two examples of convex and concave polygon.</p> <p>iii)</p>  <p>Is it a regular polygon? If no, why?</p> <p>Now, the teacher will clean the black-board, thank the class and leave the class with a smiling face.</p>	<p>pupils will write down the questions on their respective copies.</p> <p>The pupils will also convey thanks to the teachers.</p>

Eraser



LESSON PLAN-5

• Identification of Qalā:-

Name of the School:- Dawson H.S. & M.P. School.	Subject:- Mathematics.
Class:- VIII (B)	Text book:- Ganit.
No of students:- 47.	Lesson:- Quadrilateral.
Avg. age of students:- 13 ⁺ yrs.	Topic:- Sum of the measure of interior angles of polygon.
Duration:- 45 minutes.	Name of the Teacher:- Shahbaz Begum.
Date:- 27/4/2023	Roll no:- 50

General Objectives :-

- i) Pupils will acquire the knowledge of terms, concepts, symbols and definitions etc.
- ii) To develop pupil's skill in solving problems by various possible methods.
- iii) To increase the power of concentration of pupils.
- iv) To gain confidence and competence in learning by the pupils.
- v) To develop thinking and reasoning powers of the students.
- vi) To enjoy solving mathematical problems of everyday life.

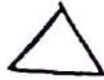
Teaching Aids :-

- i) General Aid :- Blackboard, chalk, duster, pointer.
- ii) Specific Aid :- A chart showing different types polygons and their sum of interior angles.

• Introduction :-

Step	Assumed Previous Knowledge	Teacher's Activity	Pupil's Activity
I N T R O D U C T I O N	Through questioning it is assumed that the pupils have previous knowledge about the topic.	<p>After entering into the class with smiling face, the teacher will first arrange the classroom properly then in order to motivate the students and to test their previous knowledge, she will ask some questions:-</p> <p>i) what are polygons?</p> <p>ii) How many types of polygon are there?</p> <p>iii) what are the convex polygon?</p>	<p>Ans Polygons are simple closed figures made up of only line segments.</p> <p>Ans Basically two types.</p> <p>Ans A polygon where the interior angles are less than 180° and the diagonals are inside the polygon is called convex polygon.</p>

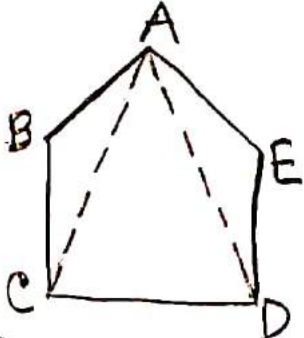
• Introduction

step	Assumed previous knowledge	Teacher's activity	Student's activity
I N T R O D U C T I O N		iv) Tell me the name of this polygon given below :- 	<u>Ans</u> convex polygon.
		v) What is the sum of the angles of a triangle?	<u>Ans</u> 180° .

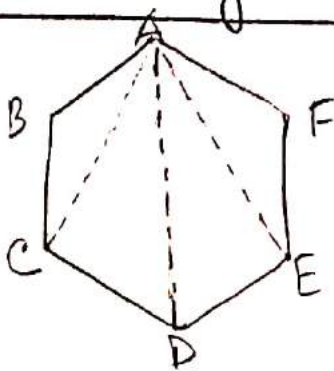
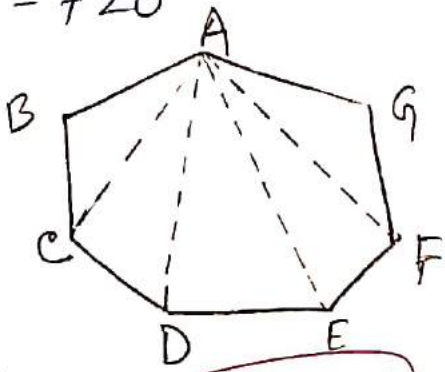
• Announcement of the topic :-

After getting satisfied with the answers the teacher will announce that today we will discuss about the topic "sum of the measures of interior angles of polygon." Then she will write down the name of the topic on the blackboard. Then the pupils will write down the topic's name in their respective copies.

• Presentation :-

Step	Teaching point	Specific Objective	Teacher's activity	Pupil's Activity	Learning Outcome
P R E S E N T A T I O N	Sum of interior angles of a quadrilateral	Pupils will be able to solve the sum of interior angles of quadrilateral.	$= 180^\circ + 180^\circ$ $= 2 \times 180^\circ$ $= 360^\circ$	Pupils will observe carefully.	Pupils will be able to find the sum of the interior angles of quadrilateral.
	Sum of interior angles of Pentagon	Pupils will be able to solve the sum of interior angles of pentagon.	 <p>Since the diagonals AC & AD divides the pentagon into three triangles i.e. $\triangle ABC$, $\triangle ACD$ & $\triangle ADE$.</p> <p>\therefore The sum of interior angles of ABCDE</p> $= 180^\circ + 180^\circ + 180^\circ$ $= 3 \times 180^\circ$ $= 540^\circ$	Pupils will observe carefully.	Pupils will be able to find the sum of the interior angles of a pentagon.

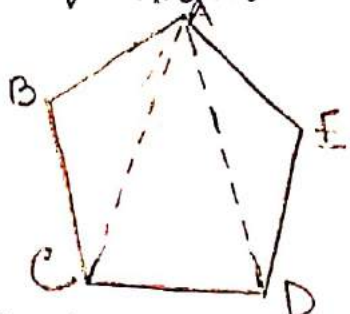
• Presentation

step	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning Outcome
P R E S E N T A T I O N	Sum of interior angles of Hexagon	Pupils will be able to solve the sum of interior angles of Hexagon.	 <p>Since, the diagonals AC, AD, AE divides the Hexagon into four triangles.</p> <p>∴ sum of interior angles of the hexagon ABCDEF is</p> $= 180^\circ + 180^\circ + 180^\circ + 180^\circ$ $= 4 \times 180^\circ$ $= 720^\circ$	Pupils will observe carefully.	Pupils will be able to find the sum of the interior angles of Hexagon.
	Sum of interior angles of Heptagon	Pupils will be able to solve the interior angles of Heptagon.	 <p>Since the diagonals AC, AD, AE, AF divides it into five triangles.</p> <p>∴ sum of interior angles of the Heptagon ABCDEFG is →</p> $180^\circ + 180^\circ + 180^\circ + 180^\circ + 180^\circ$ $= 5 \times 180^\circ = 900^\circ$	Pupils will listen and observe carefully.	pupils will be able to find the sum of the interior angles of Heptagon.

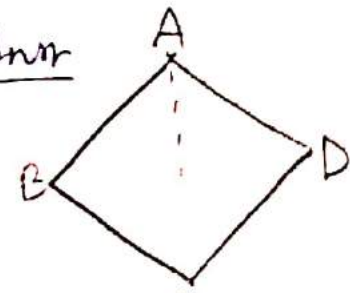
• Presentation :-

Step	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning outcome																					
P R E S E N T A T I O N	sum of interior angles of polygon	Pupils will be able to find the sum of interior angles of polygon.	Now, we have found a pattern for the sum of interior angles of polygon.	Pupils will observe carefully and write down the formula on their respective copies.	Pupils will be able to construct the formula of the sum for the sum of interior angles of polygon.																					
			<table border="1"> <thead> <tr> <th>Polygon</th> <th>Sum of interior angles</th> <th>Pattern</th> </tr> </thead> <tbody> <tr> <td>Triangle</td> <td>180°</td> <td>$(3-2) \times 180^\circ$</td> </tr> <tr> <td>Quadrilateral</td> <td>360°</td> <td>$(4-2) \times 180^\circ$</td> </tr> <tr> <td>Pentagon</td> <td>540°</td> <td>$(5-2) \times 180^\circ$</td> </tr> <tr> <td>Hexagon</td> <td>720°</td> <td>$(6-2) \times 180^\circ$</td> </tr> <tr> <td>...</td> <td>...</td> <td>...</td> </tr> <tr> <td>Polygon having 'n' sides</td> <td></td> <td> $(n-2) \times 180^\circ$ $= (n-2) \times 2 \times 90^\circ$ $= (2n-4) \times 90^\circ$ </td> </tr> </tbody> </table>			Polygon	Sum of interior angles	Pattern	Triangle	180°	$(3-2) \times 180^\circ$	Quadrilateral	360°	$(4-2) \times 180^\circ$	Pentagon	540°	$(5-2) \times 180^\circ$	Hexagon	720°	$(6-2) \times 180^\circ$	Polygon having 'n' sides		$(n-2) \times 180^\circ$ $= (n-2) \times 2 \times 90^\circ$ $= (2n-4) \times 90^\circ$
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Polygon having 'n' sides		$(n-2) \times 180^\circ$ $= (n-2) \times 2 \times 90^\circ$ $= (2n-4) \times 90^\circ$																								
<p>\therefore The sum of interior angles of a polygon having 'n' sides $= (2n-4) \times 90^\circ$</p> <p>For eg, the sum of interior angles of a polygon having 12 sides is -</p> $= (2 \times 12 - 4) \times 90^\circ$ $= 1800^\circ.$																										

• Presentation :-

Step	Teaching point	Specific Objective	Teacher's Activity	Pupils Activity	Learning Outcome
P R E S E N T A T I O N	Evaluation	Pupils will be able to solve the questions based on polygon.	<p>Teachers will ask the students to do the following questions:-</p> <p>1) </p> <p>Calculate the sum of the interior angles of this polygon.</p> <p>2) Find the sum of interior angles of a polygon having 10 sides.</p>	<p><u>Ans</u> \therefore there are three triangles \therefore sum of the interior angles of this polygon is $= 180^\circ + 180^\circ + 180^\circ$ $= 3 \times 180^\circ$ $= 540^\circ$</p> <p><u>Ans</u> The sum of interior angles of a polygon $= (2n - 4) \times 90^\circ$ $\because n = 10$ $\therefore 2 \times 10 - 4 \times 90^\circ$ $= 2 \times 10 - 4 \times 90^\circ$ $= 16 \times 90^\circ$ $= 1440^\circ$</p>	<p>Pupils will be able to solve the sum of the interior angles of polygon.</p> <p>pupils will be able to solve the sum of the interior angles of a polygon if number of sides is given.</p>

• Closure

step	Teacher's Activity	Pupil's Activity
	<p>The teacher will sum up the class highlighting the main points in the black board, then she will ask some questions to consolidate learning.</p> <p>1) What is the sum of the interior angles of a quadrilateral?</p> <p>Now, the teacher will give home assignment on the black board</p> <p>Q. Find the sum of the interior angles of a polygon having 15 sides.</p> <p>Now, the teacher will clean the blackboard, thank the class and leave the class with smiling face.</p> <p style="text-align: right;"><u>Suzrah</u></p>	<p><u>Q.1</u></p>  <p>Sum of the interior angles = $180^\circ + 180^\circ$ = 360° //</p> <p>Pupils will write the assignment on their respective copies.</p> <p>The students will also convey thanks to the teachers.</p>

LESSON PLAN :- 6

• Identification of Data :-

Name of the School :- Dawson

H.S. & M.P. School.

Class :- IX (B)

No. of students :- 59

Avg. age of students :- 12⁺

Duration :- 45 minutes.

Date :- 28/4/2023

Subjects :- Mathematics.

Lesson :- Linear Equation.

Topic :- Linear equ.ⁿ in two variables.

Text book :- Ganit.

Name of the teacher :-

Shahnaaz Begum.

Roll no :- 50.

• General objectives :-

- 1) To develop skill of pupils in solving problems by various possible methods.
- 2) Pupils will acquire knowledge of terms, concepts, symbols and definitions etc.
- 3) To develop thinking and reasoning power of the students.
- 4) To increase the power of concentration of students.
- 5) To enjoy solving mathematical problems of everyday life.
- 6) To develop pupil's interest in mathematics.

• Teaching Aids :-

General Aids :- Black-board, chalk, chart, pointer.

Specific Aids :- A chart showing the examples of linear equation in two variables.

Introduction :-

Step	Assumed previous knowledge	Teacher's Activity	Pupil's Activity
I N T R O D U C T I O N	Through questioning it is assumed that the pupils have some previous knowledge about the topic.	After entering into the class the teacher will first arrange the class properly, then in order to motivate the students and to test their previous knowledge the teacher will ask some questions — i) what is an equation? ii) what is variable? iii) Give an example of linear equation with one variable. iv) solve $y + 3 = 10$ v) $x + y = 4$, how many variables are there in the equation?	Pupils will listen carefully and try to answer the questions asked by the teacher. i) It is a statement which asserts the equality of two expressions. ii) changeable value. iii) $3x + 8 = 10$. iv) $y = 10 - 3$ $\rightarrow y = 7$ v) Two variables.

Announcement of the topic :-

Being satisfied with the answers the teacher will announce that today we are going to discuss about "linear equation in two variables" and will write down on the black-board. Pupils will take out their books and notebooks and write down the name of the topic in their respective copies.

• Presentation

Step	Teaching point	Specific objective	Teacher's Activity	Pupil's Activity	Learning Outcome
P R E S E N T A T I O N	Definition of linear equation in two variables	Pupils will be able to define the linear equation in two variables.	The teacher will explain the definition as - It is an equation where the variable form an equation using operations - Eg. $ax + by + c = 0$ $p + 4q = 7$	Pupils will listen carefully and note down in their copies.	Pupils will be able to define linear equation in two variables.
	Concept of linear equation and solution of linear equation in two variables	Pupils will be able to get the concept of linear equation and able to solve the linear equation.	The teacher will explain - In the example of linear equation in two variables $ax + by + c = 0$ $a, b, \text{ and } c$ are rational numbers and, $a, b \neq 0$ A linear equation in two variables has a pair of numbers that can satisfy the equation. This pair of numbers is called as the solution of the linear equation in two variables. The solution can be found by assuming the value of one of the variables and then proceed to find the other solution. There are infinitely many solutions, for a single linear equation in two variables.	pupils will listen carefully and note down the important points in their respective copies.	pupils will get the concept and able to solve the linear equation of two variables.

● Presentation :-

Step	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning Outcome
P R E S E N T A T I O N	Solution of linear equation in two variables	pupils will be able to solve the questions of linear equation of two variables	<p>Now, the teacher will give an example on the blackboard -</p> <p><u>Ex</u> - Find the solution for the equation $2x + y = 7$</p> <p><u>Solⁿ</u> - Let, $x = 0$</p> $\therefore 2x + y = 7$ $\Rightarrow 2 \cdot (0) + y = 7$ $\Rightarrow 0 + y = 7$ $\Rightarrow y = 7$ <p>Hence, one solution is $(0, 7)$. To find another solution, we will take, $y = 0$</p> $\therefore 2x + y = 7$ $\Rightarrow 2x + 0 = 7$ $\Rightarrow 2x = 7$ $\Rightarrow x = \frac{7}{2}$ <p>\therefore Another solution is $(\frac{7}{2}, 0)$</p>	pupils will observe carefully and write down the example in their respective note books.	pupils will be able to solve the question of linear equation in two variables.
E V A L U A T I O N	Evaluation	pupils will be able to solve the problems of linear equation in two variables	<p>Now, the teachers will ask some questions -</p> <p>i) Find the solutions for each of the following equation</p> <p>a) $2x + y = 8$</p>	<p>pupils will try to solve the problems.</p> <p>a) $2x + y = 8$</p> <p>Let, $x = 0$</p> $\therefore 2(0) + y = 8$ $\Rightarrow 0 + y = 8$ $\Rightarrow y = 8$ <p>\therefore one solution is $(0, 8)$</p>	pupils will be able to solve the problems of linear equation in two variables.

• Presentation:-

Step	Teaching point	Specific objective	Teacher's Activity	Pupil's Activity	Learning Outcome
P R E S E N T A T I O N	Evaluation	Pupils will be able to solve the problems of linear eq ⁿ s in two variables.	b) $x = 4y$	<p>Let, $y = 2$ $\therefore 2x + y = 8$ $\Rightarrow 2x + 2 = 8$ $\Rightarrow 2x = 8 - 2$ $\Rightarrow x = \frac{6}{2}$ $\Rightarrow x = 3$ \therefore Another solution is $(3, 2)$</p> <p>b) Let $x = 2$ $\Rightarrow \therefore x = 4y$ $\Rightarrow 2 = 4y$ $\Rightarrow 4y = 2$ $\Rightarrow y = \frac{2}{4} = \frac{1}{2}$ \therefore One solution is $(2, \frac{1}{2})$ Let, $y = 1$ $\therefore x = 4y$ $\Rightarrow x = 4 \times 1$ $\Rightarrow x = 4$ \therefore another solution is $(4, 1)$</p>	Pupils will be able to solve the problems of linear eq ⁿ s in two variables.

• Closure:-

Step	Teacher's Activity	Pupil's Activity
C L O S U R E	Now, the teacher will sum up the day's lesson by explaining the teaching point briefly. Then the teacher will ask some questions to check pupils' acquired knowledge.	pupils will listen carefully and try to recall everything learnt in the class. They will try to answer.

• closure

Step	Teacher's Activity	Pupil's Activity
	i) What is $ax+by+c=0$ form of $2x=3y+7$	<u>Ans</u> $2x-3y-7=0$
	ii) Find a, b, c in $9x+3y-8=0$	<u>Ans</u> $a=9, b=3, c=-8$
	iii) Price of two cows and three goats is 30,000. Write in equation form.	<u>Ans</u> Let, the price of one cow = x one goat = y $\therefore 2x+3y=30,000.$
	<p>Now the teacher will give homework on the blackboard</p> <p><u>Home works-</u></p> <p>Q. Find the solutions for the following equations</p> <p>a) $4x+8y=9$ b) $7x+8y=3$</p> <p>Now, the teacher will clear the black board, thank the class and leave the class with smiling face.</p>	<p>pupils will note down the homework in their respective copies</p> <p>The students will also convey thanks to the teacher.</p>

Essorah

LESSON PLAN - 7

• Identification of Data:-

Name of the school:- Dawson
H.S & M.P. School.
Class:- VII (B)
No of students:- 43
Avg age of students:- 12⁺
Duration:- 45 minutes.
Date:- 2/5/2023

Subjects:- Mathematics.
Lessons:- Lines and Angles.
Topic:- Related Angles.
Textbook Name:- Ganit.
Name of the teacher:-
Shahnaz Begum.
Roll no:- 50

• General Objectives:-

- i) Pupils will acquire the knowledge of terms, concepts, symbols and definitions etc.
- ii) To develop pupils' skill in solving problems by various possible methods.
- iii) To develop thinking and reasoning power of the students.
- iv) To increase the power of concentration of students.
- v) To enjoy solving mathematical problems of everyday life.
- vi) To develop pupils' interest in mathematics.

• Teaching Aids:-

General:- Blackboard, chalk, duster, pointer.

Specific:- A chart showing related angles (complementary and supplementary angles)

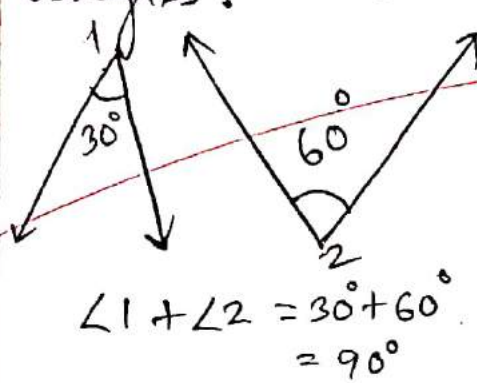
• Introduction -

Step	Assumed prev. knowledge	Teacher's Activity	Pupils' Activity
I N T R O D U C T I O N	Through questioning it is assumed that pupils have previous knowledge about lines and angles.	<p>After entering into the class, the teacher will first arrange the class properly then in order to motivate the students and to test their previous knowledge she will ask some questions →</p> <p>i) what is a line segment?</p> <p>ii) what is a ray?</p> <p>iii) what is a line?</p> <p>iv) what is angle?</p>	<p>Pupils will listen carefully and try to answer the questions asked by the teacher.</p> <p><u>Answer</u> A part of line with two end points is called a line segment.</p> <p><u>Answer</u> A part of a line that has one end point and goes on infinitely in one direction.</p> <p><u>Answer</u> If two points extended in either direction endlessly we get a line.</p> <p><u>Answer</u> An angle is formed when two rays originate from the same point.</p>

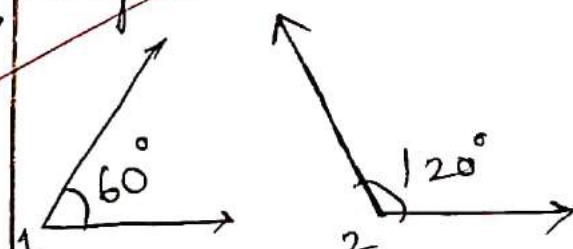
• Announcement of the topic -

Being satisfied with the answers the teachers will announce that today we will discuss about the "Lines & Angles", then she will write the topic's name on the board. She will ask the students to write down the name of topic and the pupils will listen carefully and write down the name of the topic on their respective copies.

• Presentation:-

Step	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning outcome
P R E S E N T A T I O N	Complementary Angles	pupils will be able to define complementary angles	<p>Complementary Angles - when sum of the measures of two angles is 90°, the angles are called complementary angles.</p>  <p>$\angle 1 + \angle 2 = 30^\circ + 60^\circ = 90^\circ$</p> <p><u>Example:-</u> Find the complementary angle of a) 45° solⁿ $90^\circ - 45^\circ = 45^\circ$ // b) 50° solⁿ $90^\circ - 50^\circ = 40^\circ$ //</p>	Pupils will listen carefully and note down in their copies.	Pupils will be able to define complementary angles
			<p><u>Example:-</u> Find the complementary angle of a) 45° solⁿ $90^\circ - 45^\circ = 45^\circ$ // b) 50° solⁿ $90^\circ - 50^\circ = 40^\circ$ //</p>	Pupils will observe carefully and write down the examples in their copies.	

● Presentation 6 -

Step	Teaching point	Specific objective	Teacher's Activity	Pupils' Activity	Learning Outcome
P R E S E N T A T I O N	evaluation	Pupils will be able to solve the questions	<p>Now the teacher will ask the students to do the following questions to check their acquired knowledge -</p> <p>i) Find the complementary angles →</p> <p>a) 65°</p> <p>b) 35°</p>	<p>pupils will do the sum.</p> <p>a) $90^\circ - 65^\circ = 25^\circ$</p> <p>b) $90^\circ - 35^\circ = 55^\circ$</p>	Pupils will be able to solve the questions.
A T I O N	Supplementary Angles	pupils will be able to identify supplementary angles.	<p><u>Supplementary Angles</u> -</p> <p>When sum of the measure of two angles is 180°, the angles are called supplementary angles.</p>  <p>$\angle 1 + \angle 2 = 60^\circ + 120^\circ = 180^\circ$</p>	<p>pupils will listen carefully and write down in their copies.</p>	pupils will be able to identify supplementary angles.

• Closure :-

Step	Teacher's Activity	Pupil's Activity
C L	<p>The teacher will sum up the class highlighting the main points on the blackboard. Then she will ask some questions to the students -</p>	<p>Pupils will listen carefully and try to recall everything learnt in the class. They will try to answer -</p>
O	<p>1) What will be the measure of complementary angle of following angle - a) 43° b) 51°</p>	<p>1) a) $90^\circ - 43^\circ = 47^\circ //$ b) $90^\circ - 51^\circ = 39^\circ //$</p>
S	<p>2) What will be the supplementary angle of - a) 130° b) 145°</p>	<p>2) a) $180^\circ - 130^\circ = 50^\circ //$ b) $180^\circ - 145^\circ = 35^\circ //$</p>
U	<p>Now the teacher will give home work on the blackboard.</p>	<p>pupils will</p>
R	<p>Q. Identify the complementary and supplementary angles from the following:- a) $35^\circ, 55^\circ$ b) $120^\circ, 60^\circ$ c) $65^\circ, 25^\circ$ d) $145^\circ, 35^\circ$ e) $43^\circ, 47^\circ$ f) $115^\circ, 65^\circ$</p>	<p>write down the home work on their respective copies.</p>
E	<p>Then the teacher will clean the blackboard, thank the class and leave the class with smiling face.</p>	<p>The students will also convey thanks to the teacher.</p>

LESSON PLAN - 8

• Identification of Data :-

Name of the School :- Dawson H.S. & M.P. School.	Subjects :- Mathematics.
Class :- VIII (B)	Text book :- Ganit.
No. of students :- 47	Lesson :- Square and Square Roots.
Avg. age of students :- 13 ⁺ yrs	Topic :- Square root.
Duration :- 45 minutes.	Name of the Teacher :- Shahnaz Begum.
Date :- 3/5/2023	Roll no :- 50

• General Objectives :-

- 1) Pupils will acquire the knowledge of terms, concepts, symbols and definitions.
- 2) To develop pupil's skill in solving problems of various possible methods.
- 3) To develop thinking and reasoning powers of pupils.
- 4) To increase the power of concentration of students.
- 5) To gain confidence and competence in learning Mathematics by the students.
- 6) To enjoy solving mathematical problems of everyday life.

• Teaching Aids :-

General Aids :- Blackboard, chalk, duster, pointer.

Specific Aids :- chart containing square root of numbers.

● Introduction:-

Step	Assumed Prev. Knowledge	Teacher's Activity	Pupil's Activity
I N T R O D U C T I O N	Through questioning it is assumed that pupils have previous knowledge about the topic.	<p>After entering into the class with smiling face, the teacher will first arrange the class room properly and then in order to motivate the pupils and to check their previous knowledge she will ask some questions:-</p> <ol style="list-style-type: none"> 1) what is a number? 2) what is an integer? 3) what is a square number? 4) Inverse operation of addition is subtraction, similarly for multiplication is division. So what is inverse operation of square of a number? 	<p>Pupils will greet the teacher, listen carefully and try to answer the questions asked by the teacher.</p> <p><u>Ans:</u> A no is a mathematical symbol represented by a set of digits.</p> <p><u>Ans:</u> Integers are the collection of whole numbers and negative numbers.</p> <p><u>Ans:-</u> when a number or integer is multiplied by itself, the resultant is a square number.</p> <p><u>Ans:</u> Square Root.</p>

• Announcement of the Topic :-

After getting satisfactory response from the pupils, the teacher will announce that today we will discuss about the topic "square Root". After announcing the topic, the teacher will write the topic on the blackboard. The pupils will write the name of the topic in their respective copies.

• Presentation :-

Step	Teaching point	Specific Objective	Teacher's Activity	Pupil's Activity	Learning Outcome
P R E S E N T A T I O N	Definition of square root	Pupils will be able to define square root	Now the teacher will explain square root as - A square root of a number is a value that, when multiplied by itself, gives the number. Eg. $4 \times 4 = 16$ So square root of 16 is 4.	pupils will listen carefully and note down in their copies.	pupils will be able to define square root.
	Finding square roots through repeated subtraction	pupils will be able to write the square root of a number through repeated subtraction	Every square number can be expressed as a sum of successive odd natural numbers starting from 1. Consider 81, Then, i) $81 - 1 = 80$ ii) $80 - 3 = 77$ iii) $77 - 5 = 72$ iv) $72 - 7 = 65$ v) $65 - 9 = 56$	Pupils will listen attentively and note down in their copies.	pupils are able to write the square root of a number through repeated subtraction.

• Presentation 5 -

Step	Teaching point	Specific objectives	Teacher's Activity	Pupil's activity	Learning Outcome
P R E S E N T A T I O N	Finding square roots through repeated subtraction	Pupils will be able to write the square root of a number through repeated subtraction.	vi) $56 - 11 = 45$ vii) $45 - 13 = 32$ viii) $32 - 15 = 17$ ix) $17 - 17 = 0$ From 81, we have subtracted successive odd numbers starting from 1 & obtain 0 at the 9th step $\therefore \sqrt{81} = 9$	Pupils will observe carefully.	pupils will be able to write the square root of a number through repeated subtraction.
	Finding square root through prime factorization	pupils will be able to write the square root of a number through prime factorisation	you will find that each prime factor in the prime factorisation of the square of a number, occurs twice the number of times it occurs in the prime factorisation of the no itself. For e.g. 324 $324 = 2 \times 2 \times 3 \times 3 \times 3$ $\quad \quad \times 3$ $= 2^2 \times 3^2 \times 3^2$ $= (2 \times 3 \times 3)^2$	pupils will observe carefully and note down in their respective copies	pupils will be able to write the square root of a number through prime factorisation.

• Presentation:-

Step	Teaching point	Specific objective	Teacher's Activity	Pupils activity	Learning outcome
P R E S E N T A T I O N	Questioning	Pupils will be able to recall, predict and examine.	$= 18^2$ $\therefore \sqrt{324} = 18$ i) what is square root? ii) Is 90 a perfect square? iii) why 90 is not a perfect square?	Ans A square root of a number is a value that, when multiplied by itself gives the number. Ans No. Ans We have $90 = 2 \times 3 \times 3 \times 5$ The prime factors 2 & 5 don't occur in pair. Hence 90 is not a perfect square.	Recall. Predict Examine

• Closure -

Step	Teacher's Activity	Pupil's Activity
C L O S U R E	Now the teacher will summarise the main points of the topic on the blackboard.	pupils will listen carefully and note down in their respective copies.

Closure

Step	Teacher's Activity	Pupils Activity.
C	Now the teacher will ask some questions to test their acquired knowledge -	
L	i) Find the square root of 100 by the repeated subtraction.	<p>Ans i) $100 - 1 = 99$ ii) $99 - 3 = 96$ iii) $96 - 5 = 91$ iv) $91 - 7 = 84$ v) $84 - 9 = 75$ vi) $75 - 11 = 64$ vii) $64 - 13 = 51$ viii) $51 - 15 = 36$ ix) $36 - 17 = 19$ x) $19 - 19 = 0$ $\therefore 0$ is found at 10th step $\therefore \sqrt{100} = 10 //$</p>
O		
S	ii) Find the square root of 400 by prime factorisation method.	<p>Ans $400 =$ $2 \times 2 \times 2 \times 2 \times 5 \times 5$ $= 2^4 \times 5^2$ $= (2 \times 2 \times 5)^2$ $= 20^2$ $\therefore \sqrt{400} = 20 //$</p>
U		
R	Now the teacher will give home work on the black-board	Pupils will write the home work on their copies.
E	i) Find the square root of the following numbers - 4096, 529.	
	Now the teacher will clean the blackboard, thank the class and leave the class with smiling faces.	Pupils will also convey thanks to teacher.

Shresh