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VIII

Signat



**MICRO TEACHING  
LESSONS**

# LESSON No. 1.....

Date.....

Duration of the period.....

Pupil Teacher's Name RENU BALA

Pupil Teacher's Roll No. ....

Class.....

Average Age of the pupils.....

Subject MATHEMATICS

Topic LINE, LINE SEGMENT, RAY

TEACHER'S ACTIVITY	STUDENT BEHAVIOUR	COMPONENT
Teacher shows a piece of chalk and asks the students, is it a line, line segment or a ray.	Teacher's instructions are listened carefully by the students	Use of previous knowledge
Teacher hold a piece of paper in her hand and asks whether the edge of the paper is a line, line segment or a ray.	Students give mixed responses.	Maintainence of Continuity
Teacher introduce the concept by telling that all these are the examples of line segment.	Students note-down the definition	Interestful
"A line segment is part of a line having two end points"		
Teacher shows a globe to the students and tells that the equator on the globe is an example of a line	students try to understand the concept	Use of appropriate devios

TEACHER'S ACTIVITY	STUDENT BEHAVIOUR	COMPONENT
Teacher explain the definition of line and write down it on blackboard.	Students try to understand the concept and note-down the definition of line on their notebooks.	Using appropriate concluding statements
A Line goes onto infinity in both the directions.		
Teacher draws a picture of the sun and tells that the rays coming out of the sun are examples of ray.		Relevant use of verbal and non-verbal behaviour
Teacher uses a torch turn off room lights and turn on torch light to explain the concept of ray more deeply.	Students try to understand the concept.	Use of appropriate devices.

TEACHER'S ACTIVITY	STUDENT BEHAVIOUR	COMPONENT
Teacher write down the definition of ray on the blackboard and explain it to students	Students note down the definition and examples.	using appropriate concluding statements.
A ray starts at one point and it continues out to infinity.		
So Teacher introduces the concept of ray, line and line segment using inductive method.		

LESSON No. 2.....

Date.....

Duration of the period.....

Pupil Teacher's Name RENU BALA

Pupil Teacher's Roll No. ....

Class.....

Average Age of the pupils.....

Subject MATHEMATICS

Topic QUADRILATERAL

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

In the skill of questioning the pupil teacher will ask the following questions-

Students will answer the questions

prompting

1) What do you mean by a closed figure?

A figure which is not open from any of the end point is known as closed figure.

Re-focusing

2) How many sides are there in a quadrilateral?

There are four sides in a quadrilateral.

3) Define the term quadrilateral?

Students will not be able to give proper response.

seeking Maximum information

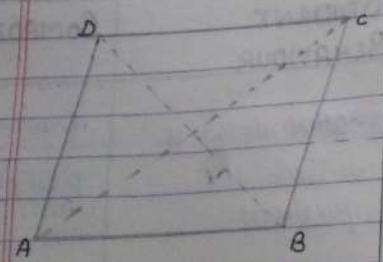
4) Define the quadrilateral in your own words?

It is a closed figure made up of four line segments.

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT



Such a figure, formed by joining four points in an order is called as a quadrilateral. A quadrilateral has four sides.

5) How many angles are there in a quadrilateral?

There are four angles in a quadrilateral

Critical Awareness

6) How many diagonals are there in a quadrilateral?

There are two diagonals in a quadrilateral

prompting

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

7) Is the black-board a quadrilateral or not?

Yes, it is a quadrilateral because it has four sides.

critical Awareness

8) What are the names of four sides of a quadrilateral?

AB, BC, CD and DA

Refocusing

9) Name the diagonals of a quadrilateral ABCD?

AC and BD are the names of the diagonals of the quadrilateral ABCD.

Date.....

Duration of the period.....

Pupil Teacher's Name RENU BALA

Pupil Teacher's Roll No. ....

Class.....

Average Age of the pupils.....

Subject MATHEMATICS

Topic TYPES OF QUADRILATERAL

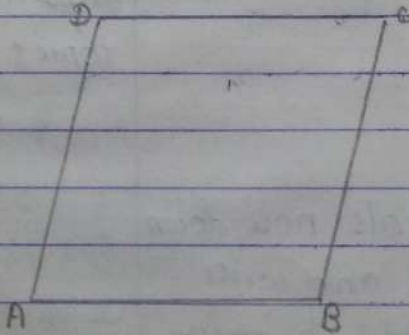
**TEACHER'S ACTIVITY**

**STUDENT BEHAVIOUR**

**COMPONENT**

Pupil teacher, firstly explains the types of quadrilateral.

**i) Parallelogram**



Students note down and try to understand carefully.

Parallelogram is a closed figure whose two sides are parallel to each other.

Pointing towards figure -  
 AB is parallel to CD  
 and BC is parallel to AD.  
 also angles of a parallelogram are also equal  
 i.e.

$$\angle A = \angle B = \angle C = \angle D$$

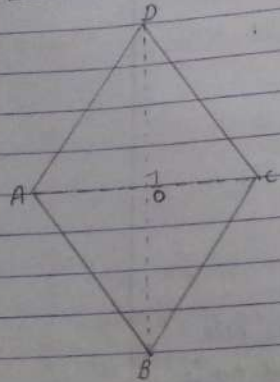
covering important points.

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

ii) RHOMBUS



It is a closed figure whose adjacent sides and adjacent angles are equal and diagonals of a rhombus bisect each other at right angle.

Students note-down figure and write definitions in their note-books.

Covering important topics

i.e

$$AB = AD \text{ and } BC = CD$$

$$\text{also } \angle B = \angle D$$

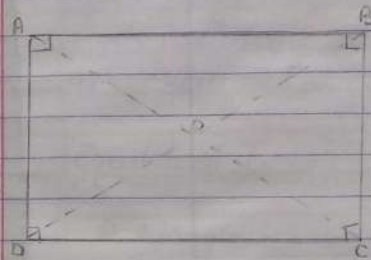
$$\text{and } \angle AOB = \angle DOC = 90^\circ$$

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

3) Rectangle



Pupil teacher draws the above figure on the blackboard and tell them that it is a rectangle.

Students listen carefully

Maintanance of continuity.

Rectangle is a closed figure which has two lengths AB and CD and two breadths AD and BC.

$$\text{Here } AB = CD$$

$$\text{and } AD = BC$$

also all interior angles of a rectangle are  $90^\circ$  opposite sides are parallel and equal.



Date.....  
 Pupil Teacher's Name RENU BALA  
 Class.....  
 Subject MATHEMATICS

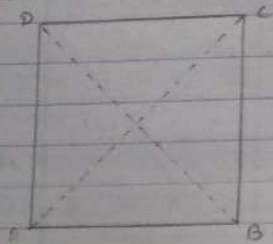
Duration of the period.....  
 Pupil Teacher's Roll No.....  
 Average Age of the pupils.....  
 Topic TYPES OF TRIANGLES

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

4) SQUARE



Pupil teacher draws the above figure on the blackboard and tell them it is a shape of square.

It is a closed figure in which all sides are equal and all angles are equal to  $90^\circ$ .

ie  
 $AB = BC = CD = DA$   
 and  
 $\angle A = \angle B = \angle C = \angle D$

Students draw figure in their note-books and notedown every concept carefully.

fluency in language.

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

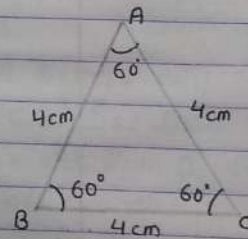
Pupil teacher shows one figure to students and asks, "What is this?"

Students Listen to the teacher carefully

Inductive Deductive Approach

Equilateral Triangle

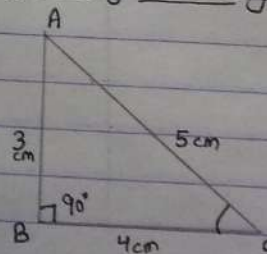
A triangle whose all



students note down very carefully and try to understand everything.

sides are equal and all angles are also equal to  $60^\circ$  is known as equilateral triangle. Then teacher will explain.

Right Angled Triangle



Students look at the figure

TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

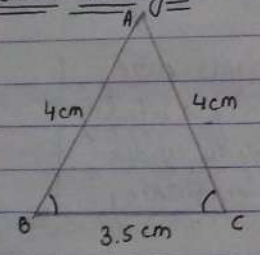
A triangle whose an angle is equal to  $90^\circ$  and opposite side to  $90^\circ$  is known as hypotenuse which is the greatest side.

Students note-down the definition of right angle triangle

formulating simple example.

AC = hypotenuse = 5cm  
 AB = Perpendicular = 3cm  
 BC = Base = 4cm

Isosceles Triangle



Students draw the figure and note-down each triangle's definition along with figure.

Inductive Deductive Approach.

A triangle whose two sides are equal and opposite angles are also equal to each other is known as Isosceles triangle.

i.e here in the figure  
 $\angle B = \angle C$  and  $AB = AC$

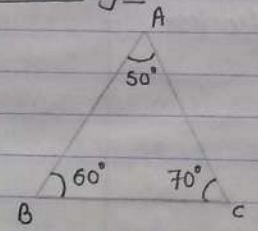
TEACHER'S ACTIVITY

STUDENT BEHAVIOUR

COMPONENT

Now pupil teacher will explain next type of triangle. i.e.

Acute Triangle



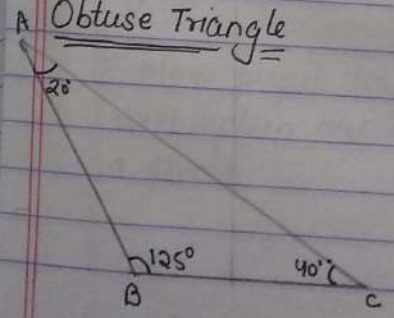
A triangle whose all angles are less than  $90^\circ$  but greater than  $0^\circ$  is known as acute triangle. i.e here in the above figure

$\angle A = 50^\circ$   
 $\angle B = 60^\circ$   
 and  $\angle C = 70^\circ$

Students draw figure of acute triangle along with explanation

formulating simple examples

Obtuse Triangle



Date.....

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Subject MATHEMATICS

Topic: CONCEPT OF CIRCLE

TEACHER'S ACTIVITY	STUDENT BEHAVIOUR	COMPONENT
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A triangle whose one angle is greater than  $90^\circ$  and rest of the two angles are less than  $90^\circ$  is known as obtuse triangle  
 i.e in the figure  
 $\angle A = 20^\circ$   
 $\angle B = 125^\circ$   
 $\angle C = 40^\circ$

Students listen carefully and note-down the definition

TEACHER'S ACTIVITY	STUDENT BEHAVIOUR	COMPONENT
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Pupil teacher will initiate the concept of a circle using a visual aid-chart on circles.

students will see the chart carefully

movements and gesture

Then she will explain the meaning of circle.

oral visual switching

The collection of all the points in a plane from one fixed point is called a circle.

students note down the definition carefully in their note-books.

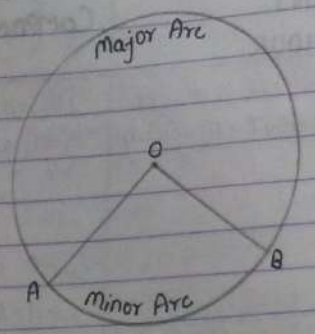
focusing

Now pupil teacher will draw a figure of the circle and explain more to students by showing figure of circle to students.

students listen carefully.

Now pupil teacher will explain arc of a circle.

TEACHER'S ACTIVITY



An arc is a portion of the circumference of a circle.

So in general an arc is any smooth curve joining two points. Length of an arc is known as arc length.

Now pupil teacher will explain two more points of a circle i.e. major arc and minor arc.

STUDENT BEHAVIOUR

Students draw the figure and note-down definition of arc.

COMPONENT

Oral-visual switching

TEACHER'S ACTIVITY

Minor Arc is the shortest distance linking two points, on a circle.

and Major Arc is the greatest distance joining two points on a circle.

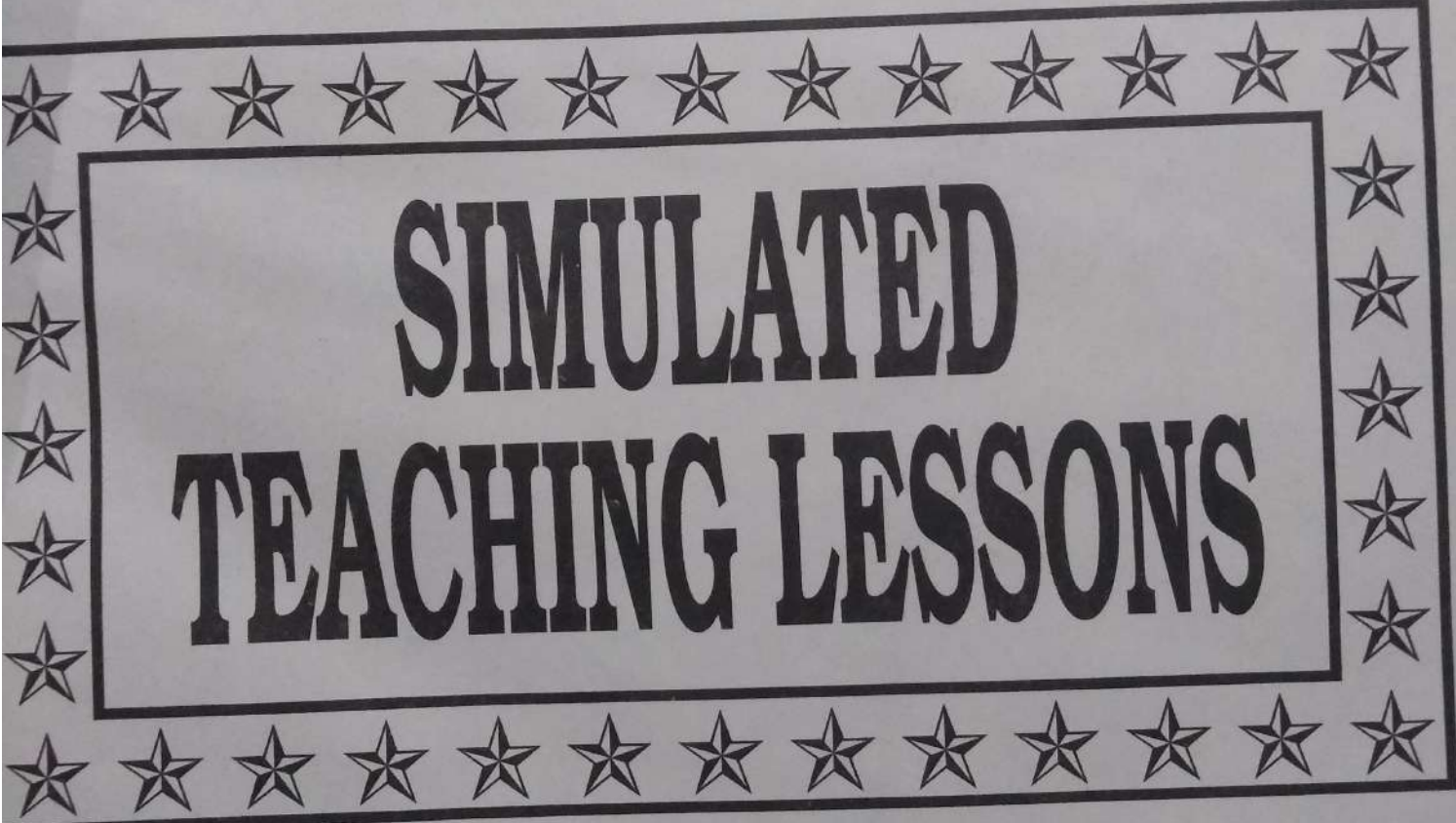
Now teacher explain that the fixed point 'O' in the centre of a circle is known as centre of a circle.

STUDENT BEHAVIOUR

Students note-down the definitions

COMPONENT

Focusing

A decorative border consisting of a double-line black frame with a row of small, five-pointed stars between the lines. The stars are arranged in a grid pattern, with 12 stars per row and 12 stars per column, forming a rectangular frame around the central text.

**SIMULATED  
TEACHING LESSONS**

Date.....

Duration of the period.....

Pupil Teacher's Name.....

Pupil Teacher's Roll No. ....

Class.....

Average Age of the pupils.....

Subject MATHEMATICSTopic CONCEPT OF ANGLES

GENERAL OBJECTIVES :- 1) To develop a positive attitude towards learning Mathematics.

- 2) To think and reason precisely, logically and critically in any given situation.
- 3) To develop investigation skills in mathematics.
- 4) To provide training in systematic manner.

SPECIFIC OBJECTIVES :-

- 1) KNOWLEDGE :- Students are able to recall the meaning of definition of angle.
- 2) UNDERSTANDING :- Students will be able to calculate the interior and exterior angles.
- 3) APPLICATION :- Students will be able to make a prediction angle of any object and would be able to name any angle.
- 4) SKILL :- Students would be able to make a model or draw certain angles.

PREVIOUS KNOWLEDGE ASSUMED :-

Pupil teacher will assume that students are familiar with the basic terms of angles.

SET INDUCTION/P.K. TESTING :-

PUPIL TEACHER ACTIVITY	STUDENT ACTIVITY
1) What is a ray?	It is a portion of a line.
2) From where a ray starts?	From a point
3) What does that point called?	Starting point
4) In which direction a ray travels?	Along a straight line.
5) How many rays can be drawn from a fixed point?	we can draw many rays.
6) If two rays from a common point are taken together what will they form?	NO response

STATEMENT OF AIM :- Well students, today we will discuss about angles.

PRESENTATION

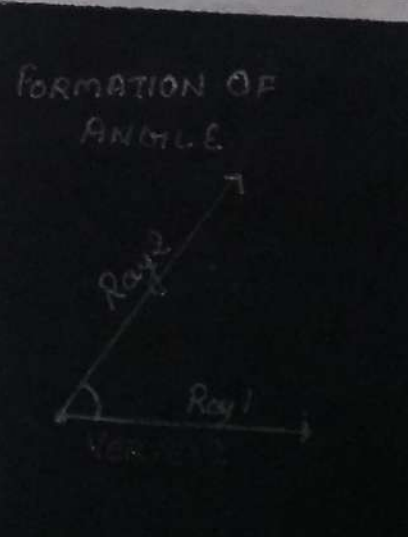
TEACHING POINTS	PUPIL TEACHER ACTIVITIES
FORMATION OF ANGLES	<p>Pupil teacher will introduce the concept of angles by asking students.</p> <p>Do you know how is an angle formed?</p> <p>In plane geometry, an angle is the figure formed by joining two rays at a point called the sides of angle, sharing a common end point called the vertex of the angle.</p>

STUDENT ACTIVITIES

Students will listen to question asked by the teacher.

Students try, but will not be able to give proper response

CHALK BOARD WORK



TEACHING POINTS

PUPIL TEACHER ACTIVITIES

Naming of Angle

Pupil teacher will further explain that for naming an angle, the vertex is always taken as centre.

The pupil teacher draws a diagram of an angle on the blackboard, and ask students- How will you name this angle?

At the end, pupil teacher will answer that angle is named as  $\angle POQ$

Exterior Points

and

Interior Points

Now the pupil teacher will draw a diagram of angle on blackboard and draw some points which are outside. She will ask students- do you know what are these points known as?

Then teacher will tell these are exterior points. So the points which are outside the angle are called exterior points and points inside angle are interior points

Examples of Interior and Exterior points

After drawing a figure on blackboard she will ask students to name interior and exterior points?

After listening to students she will repeat the right answer.

STUDENT ACTIVITIES

Students take interest in naming of an angle.

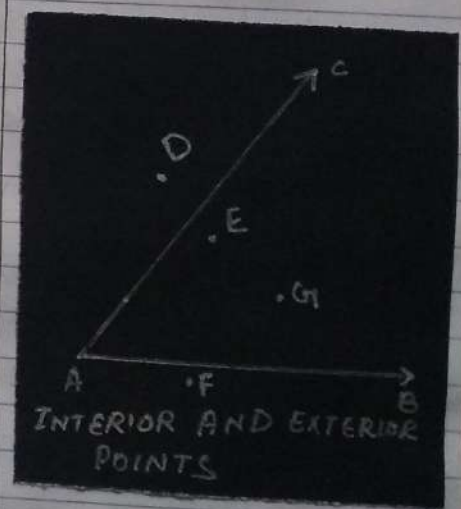
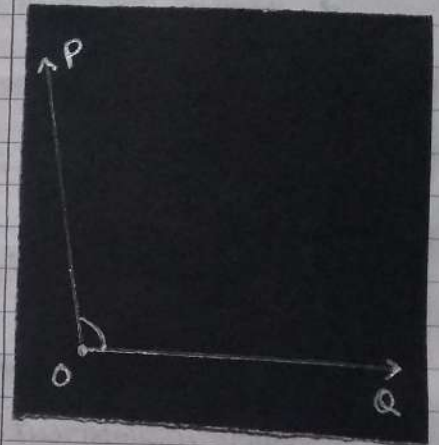
Students will also draw the figure on their note-books.

Students will give mixed response.

Students will write the definition of interior and exterior points

Students will tell that interior points are E and G and exterior points are - D and F.

CHALK-BOARD WORK



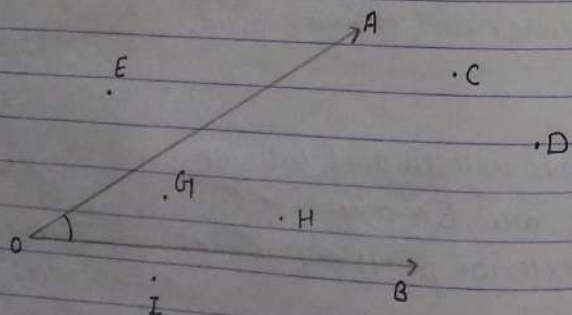


EVALUATION - Pupil teacher will ask the following questions to evaluate student's learning -

- what is an angle?
- How will you name an angle?
- What is a vertex?
- what are exterior points? Explain using examples.
- what are interior points? Explain using examples.

HOME ASSIGNMENT :- Pupil teacher will give a worksheet on angles as a home-assignment for the students.

- Pupil teacher will ask to explain the naming of an angle using a diagram.
- Pupil teacher will ask to explain the students to name the exterior angle points and Interior points in the figure.



Date.....

Duration of the period.....

Pupil Teacher's Name.....

Pupil Teacher's Roll No.....

Class.....

Average Age of the pupils.....

Subject MATHEMATICS

Topic RATIONAL NUMBERS

GENERAL OBJECTIVES :- 1) To develop a positive attitude towards learning mathematics.

- 2) To think and reason precisely, logically and critically in given situation
- 3) To develop investigation skills in mathematics.

SPECIFIC OBJECTIVES :- 1) KNOWLEDGE - Students will be able to recall and recognise the meaning of rational numbers.

2) UNDERSTANDING - Students will be able to recall and recognize and understand the concept of rational numbers.

3) APPLICATION - Students will be able to apply or predict the concept of rational numbers.

4) SKILL - Students are able to solve the problems and develop problem solving skills.

PREVIOUS KNOWLEDGE ASSUMED :- It is assumed that the students are familiar with the concept of natural no's, integers and fractions.

SET INDUCTION/P.K. TESTING

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
1) What are natural numbers?	Natural NO's are - 1, 2, 3, ... except 0.
2) What are whole numbers?	Whole numbers are 0, 1, 2, 3, ... ∞
3) Explain fractional numbers?	fractional number is written in the form of $\frac{p}{q}$ , where $q \neq 0$ .
4) What do you mean by rational numbers?	No Response.

STATEMENT OF AIM :- So students, today we will study about Rational No's

PRESENTATION

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

INTRODUCTION

The pupil teacher will introduce the topic by giving a simple definition of rational numbers.

WHAT IS RATIONAL NUMBER?

"A rational number can be made by dividing two integers."

Pupil teacher will ask the students that in the above definition a word integer is used.

Do you know what are integers?

The pupil teacher will appreciate student's response and will further define the rational numbers.

Definition of Rational numbers in formal terms.

Now pupil teacher will give formal definition of rational numbers:-

"A rational number is a number that can be in the form of  $\frac{p}{q}$ , where  $p$  and  $q$  are integers and  $q$  is not equal to zero."

Examples of Rational Numbers.

Example:-

1.5 is a rational number because

$$1.5 = \frac{15}{10}$$

STUDENT ACTIVITIES

CHALK BOARD WORK

Students will carefully listen and try to understand the concept of rational numbers.

Students will tell an integer is a number which has no fractional part.

Students will copy down the definition of rational number.

Students will list down the examples of rational number.

Rational Number  
"A number is a number that can be in the form of  $\frac{p}{q}$ , where  $p$  and  $q$  are integers and  $q$  is not equal to zero"

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

$15 = \frac{3}{10} \times 2$  [Here 3 and 2 both are integers]  
other examples are -  $\frac{5}{1}, \frac{7}{4}, \frac{1}{1000}$

Graphing Rational Numbers on a number line

The pupil teacher will firstly explain that a number line is a picture of a straight line on which every point corresponds to a real number

The way you graph the numbers on a number line is to place a dot on the place on a line. The steps to represent rational numbers -

- 1) Draw a straight line and make a point '0' on it to represent rational number 0.
- 2) Positive rational numbers will be lying on right side of point '0' and -ve numbers will be on the left side of the point '0'
- 3) Mark the points on the number line.

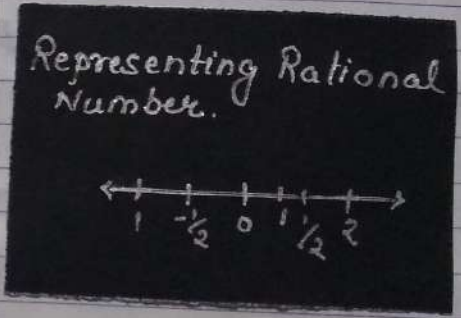
STUDENT ACTIVITIES

CHALK-BOARD WORK

Students will listen carefully

Students will list the steps to graph a rational numbers on a number line.

Students will draw the numbers on number line in their note-books.



EVALUATION:- If the pupil teacher will evaluate the students performance by asking the following questions:-

- 1) What is the formal definition of a rational number?
- 2) What are the examples of rational numbers?
- 3) Write down steps to graph a  $P/Q$  rational number on number line?

HOME ASSIGNMENT:- Pupil teacher will give a worksheet to the students on rational no.

1) Represent the following numbers as fraction and tell whether the numbers are rational or not?

- |         |         |          |
|---------|---------|----------|
| a) 5    | b) 8.30 | c) 0.001 |
| d) -0.1 | e) 5.25 | f) 9.1   |
| g) .12  | h) -0.8 | i) -0.10 |

Date.....

Duration of the period.....

Pupil Teacher's Name RENU BALA

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Subject MATHEMATICS

Topic Angles in Semicircle and segment

GENERAL OBJECTIVES:- 1) To develop a positive attitude towards learning mathematics

- 2) To think and reason precisely, logically and critically in any situation
- 3) To develop investigation skills in mathematics.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students will be able to define, recall and recognize the meanings of angles in semicircle and segment.

Understanding:- Students will be able to understand and describe the concept of angles in semicircle and segment.

Application:- Students will be able to evaluate and solve the problems on angles in semicircle and segment.

Skills:- Students will be able to draw angles in semicircle and segment.

PREVIOUS KNOWLEDGE ASSUMED:- Pupil teacher will assume that students are familiar with the concept of circle.

SET INDUCTION/P.K. TESTING:-

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
What is a circle?	Collection of all points with one fixed point O is called a circle.
What is the centre of circle?	It is the fixed point.
What is the radius?	fixed distance from fixed point to any point on the circle
What is diameter of a circle?	Double of radius
What is angle in semi circle and segment?	No response.

STATEMENT OF AIM:- We'll discuss and study about angles in semicircle and segment.

PRESENTATION

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

INTRODUCTION

The pupil teacher will start the concept of Angles in semicircle by drawing a circle on blackboard with radii  $OQ$  and  $PO$  as diameter.  $\Delta PS'O$  as the  $\Delta$  formed on the diagram diameter  $PO$ .

ANGLE IN SEMI CIRCLE AND SEGMENT

The pupil teacher will explain - The angle formed by two line segments drawn from any point on of semi-circle to the end point of its diameter.

Now pupil teacher will mark a point 's' on the semi-circle and join  $PS$  and  $QS$ . So  $\angle PSQ$  is called an angle in a semicircle.

ANGLE IN A SEMI CIRCLE IS A RIGHT ANGLE

Pupil teacher will explain that angle in a semicircle is a right angle so in the above example  $\angle PSQ = \angle PS'Q = 90^\circ$

ANGLE IN SEGMENT

The pupil teacher will now start to explain the concept of angles in segment.

The angle formed by two line segment drawn from any point in the arc of segment to the end points of its chord.

STUDENT ACTIVITIES

Students will listen carefully to the explanation

Students will draw the diagram into their note-books

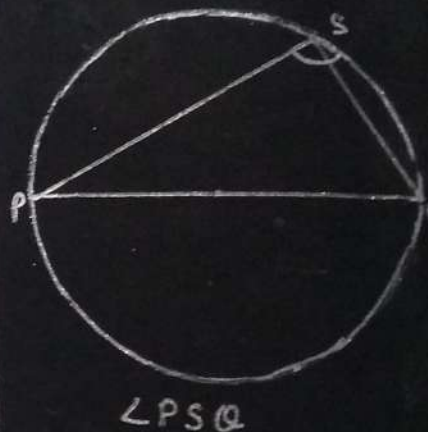
Students will listen and follow all their teacher's instructions.

Students will listen to the explanation carefully.

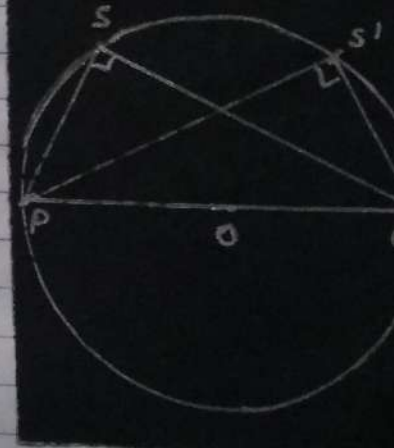
Students will draw the diagram of angle in segment.

CHALK-BOARD WORK

ANGLES IN SEMI-CIRCLE



$\angle PSQ = \angle PS'Q = 90^\circ$



TEACHING POINTS

PUPIL TEACHER ACTIVITY

ANGLE FORMED IN MINOR ARC

The pupil teacher will explain that the angle formed by drawing two points P and Q on the circle and join OP and OQ. Then angles formed on minor arc which is known as minor arc angle.

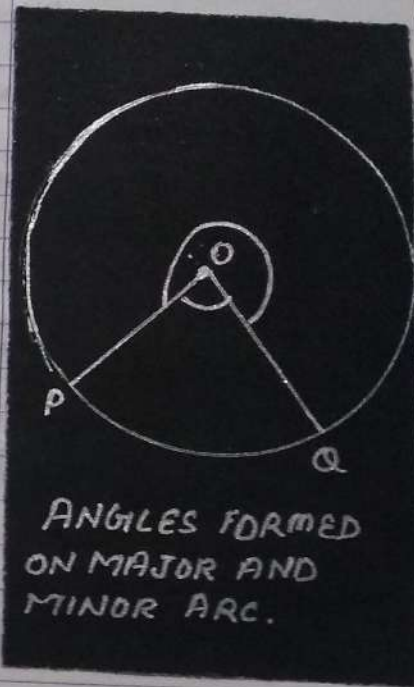
ANGLE FORMED IN MAJOR ARC

The pupil teacher will explain that P and Q is the major arc along major segment. An angle formed opposite side to the minor arc angle is known as Angle formed in major arc.

STUDENT ACTIVITIES

Students will note the explanations and will also draw diagrams.

CHALK BOARD WORK



EVALUATION - Pupil teacher will evaluate student's learning by question-answer method.

- 1) What is semicircle? Define with examples.
- 2) What is a segment of a circle? Explain with examples.
- 3) Explain the concept of angles in semicircle?
- 4) Explain angles in segment and major, minor arcs?

HOME ASSIGNMENTS - The pupil teacher will give a worksheet to students on today's topic.

- 1) Is angle formed in semicircle a right angle? Explain with proper angle.
- 2) What is the minor arc of a circle?
- 3) What is the major arc of a circle?
- 4) Explain the angle formed in major arc and minor arc.

Date.....  
Pupil Teacher's Name RENU BALA  
Class.....  
Subject MATHEMATICS  
Duration of the period.....  
Pupil Teacher's Roll No. ....  
Average Age of the pupils.....  
Topic AREA OF A QUADRILATERAL

- GENERAL OBJECTIVES -
- 1) To develop scientific attitude in students
  - 2) To lay foundation for higher studies in mathematics
  - 3) To develop logical and reasoning skills among the students.

SPECIFIC OBJECTIVES - KNOWLEDGE - Students will be able to recall and recognize the concept of area of Quadrilateral.

UNDERSTANDING - Students will be able to find the area of a quadrilateral with deep vision and clarity of concepts.

APPLICATION - Students will be able to apply the concept in coming real life problems.

SKILLS - Students will be able to make a model or chart related to area of quadrilateral.

PREVIOUS KNOWLEDGE ASSUMED - Pupil teacher will assume that students know about area of a rectangle.

SET INDUCTION / P.K. TESTING

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
What is rectangle?	A figure whose opposite sides are equal.
What is the area of rectangle?	Length x Breadth
Do you know what is quadrilateral?	It is a figure which is having four unequal sides.
What is the area of Quadrilateral?	No Response.

STATEMENT OF AIM - So students, today we will study about area of quadrilateral?

TEACHING POINTS

PUPIL TEACHER ACTIVITY

INTRODUCTION

Pupil teacher tells that today we will learn about the area of quadrilateral.

Students, do you know what is a quadrilateral?

Quadrilateral is a closed figure having four sides and four angles.

AREA OF QUADRILATERAL

A quadrilateral can be divided by a diagonal AC in two triangles ABC and ACD. The area of those triangles will be the area of a quadrilateral, i.e.

$$\begin{aligned} \text{Area of } \triangle ABC + \text{Area of } \triangle ACD &= \text{Area of Quadrilateral} \\ \frac{1}{2} \times AC \times h_1 + \frac{1}{2} \times AC \times h_2 & \\ = \frac{1}{2} \times \left( \frac{1}{2} \times AC (h_1 + h_2) \right) & \end{aligned}$$

So we can calculate the area of a quadrilateral by calculating areas of both triangles.

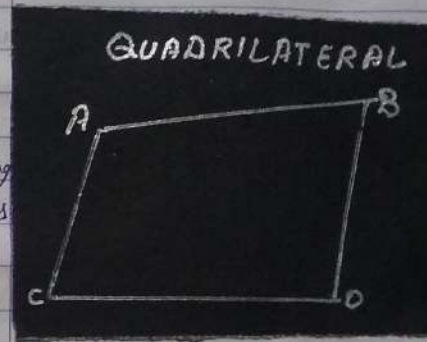
STUDENT ACTIVITIES

Students will listen to the pupil teacher with full attention.

Students will answer that a quadrilateral is a figure having two pair of opposite sides and 4 angles.

Students will note-down the explanation on the blackboard.

CHALK-BORD WORK





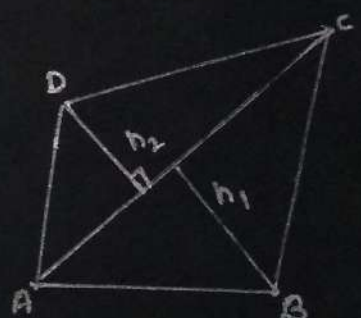
TEACHING POINT	PUPIL TEACHER ACTIVITY
<p>QUESTION-ANSWER METHOD</p>	<p>The pupil teacher will ask students to find the area of quadrilateral ABCD in which diagonal AC = 15cm and length of perpendiculars drawn on the diagonals from both the sides = 3cm, and 5cm. Pupil teacher will solve it on the blackboard.</p> <p>AC = 15 cm  <math>h_1 = 3\text{cm}</math> ; <math>h_2 = 5\text{cm}</math>  <math>\therefore</math> Area of quadrilateral ABCD  <math>= \frac{1}{2} \times 15 \times 3 + \frac{1}{2} \times 15 \times 5</math>  <math>= \frac{15}{2} (3+5)</math>  <math>= \frac{15 \times 8}{2}</math>  <math>= 60 \text{ cm}^2</math></p>

STUDENT ACTIVITIES

Students will try to solve the question first of all by themselves and if they find the solution then they look at the solution on the blackboard.

CHALK-BORD WORK

AREA OF QUADRILATERAL.



AREA OF ABCD QUADRILATERAL IS  
 $= \text{ar}(\triangle ACB) + \text{ar of } (\triangle ADC)$   
 $= \frac{1}{2} \times AC (h_1 + h_2)$

EVALUATION - Students are evaluated by the pupil teacher on the basis of following questions:-

- 1) Define a quadrilateral using proper examples.
- 2) Find the area of a quadrilateral in which diagonal  $AC = 30\text{cm}$ , first height of  $1$  is  $= 5\text{cm}$  and height  $2 = 7\text{cm}$
- 3) Find the area of a quadrilateral whose diagonal  $= 60\text{cm}$  height  $= 10\text{cm}$  and height  $2 = 20\text{cm}$ .

HOME ASSIGNMENT:- Students are given a worksheet on the area of a quadrilateral.

- 1) Explain in steps the procedure for finding out the area of a quadrilateral?
- 2) What is the formula for calculating the area of a quadrilateral?
- 3) Find the area of a quadrilateral whose one of the diagonal is  $12\text{cm}$ , height  $= 6\text{cm}$  and height  $2 = 7\text{cm}$ ?

Date.....  
Pupil Teacher's Name RENU BALA  
Class.....  
Subject MATHEMATICS  
Duration of the period.....  
Pupil Teacher's Roll No. ....  
Average Age of the pupils.....  
Topic PROPERTY OF ISOSCELES

- GENERAL OBJECTIVES:-
- 1) To develop scientific attitude in students
  - 2) To lay foundation for higher studies in mathematics
  - 3) To develop logical and reasoning skills among the students

SPECIFIC OBJECTIVES:- **KNOWLEDGE**:- Students are able to recall and recognise the meaning of properties of isosceles triangle.

**UNDERSTANDING**:- Students will be able to understand the concept of properties of isosceles

**APPLICATION**:- Students will be able to apply the properties of isosceles in various problems.

**SKILLS**:- Students will be able to evaluate properties

PREVIOUS KNOWLEDGE ASSUMED:- Students are familiar with the concept of triangle and its construction.

SET INDUCTION/P.K. TESTING:-

**PUPIL TEACHER ACTIVITY**  
What is triangle?  
How can we construct a triangle?  
Do you know what is an isosceles triangle and what are its properties?

**STUDENT ACTIVITY**  
A closed figure made up of three line segments.  
Using scale we join three line segments.  
No Response.

STATEMENT OF AIM:- Today we will study about an isosceles triangle and its properties

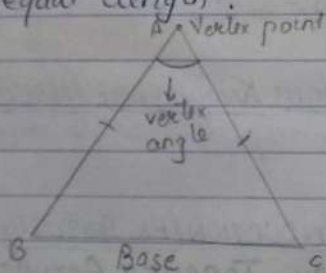
TEACHING POINTS

PUPIL TEACHER ACTIVITIES

MEANING OF ISOSCELES TRIANGLE

The pupil teacher will first explain the meaning of isosceles  $\Delta$ . In geometry, an isosceles  $\Delta$  is a triangle that has two sides of equal length.

Sometimes it is specified as having two and only two sides of equal length and sometimes as having at least two sides of equal length.



PROPERTIES OF AN ISOSCELES TRIANGLE

Now pupil teacher will discuss and explain the properties of isosceles triangle.

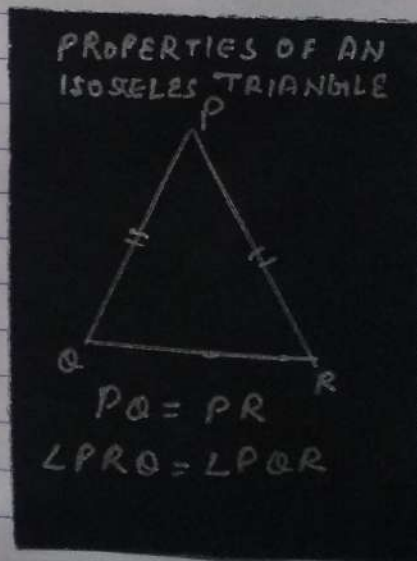
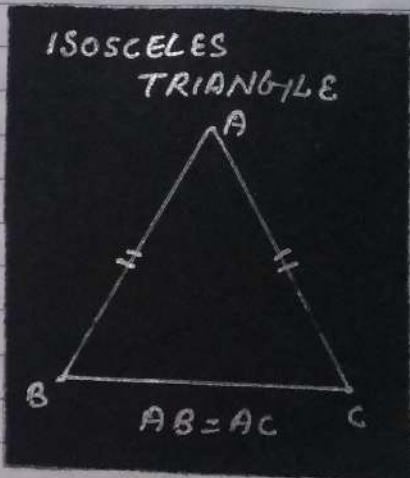
By isosceles triangle theorem, the two angles opposite the equal sides are themselves equal while if the third side is different then third angle is different.

STUDENT ACTIVITIES

Students will listen carefully.

Students will note-down the definition of isosceles triangle on their notebooks.

CHALK-BOARD WORK



Students note-down the properties of an isosceles triangle.

## TEACHING POINTS

PUPIL TEACHER ACTIVITIES

By the Steiner theorem, every triangle with two equal angles bisect of equal length is isosceles triangle.

An isosceles triangle has all angles less than  $180^\circ$

A  $\triangle POR$  is an isosceles triangle with  $PO = PR$  if  $\angle O = 70^\circ$  find other two angles

Sol<sup>n</sup> → In  $\triangle POR$ , we have

$$PO = PR \quad \dots (i)$$

$$\therefore \angle O = \angle R \quad [\text{opposite to equal sides}]$$

but

$$\angle O = 70^\circ$$

$$\text{hence } \angle R = 70^\circ$$

Now by angle sum property

$$\angle P + \angle O + \angle R = 180^\circ$$

$$\angle P + 70^\circ + 70^\circ = 180^\circ$$

$$\angle P = 180^\circ - 140^\circ$$

$$\angle P = 40^\circ$$

Hence the required angle is  $40^\circ$ .

## QUESTION

## ANSWER METHOD

## STUDENT ACTIVITIES

Students will write down the question asked by the teacher in their note-books.

Students will step by step solve the given problem on their notebooks.

## CHALK-BOARD WORK

110

Find  $\angle P$ ?

$$\angle O = 70^\circ$$

$$\therefore \angle R = 70^\circ \quad [ \because PO = PR ]$$

ANGLE SUM Property

$$\angle O + \angle P + \angle R = 180^\circ$$

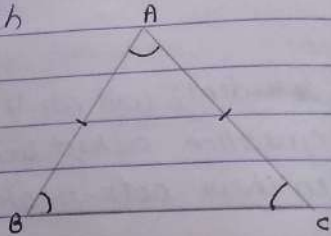
$$\angle P = 180^\circ - 70^\circ - 70^\circ$$

$$= 180^\circ - 140^\circ$$

$$\angle P = 40^\circ$$

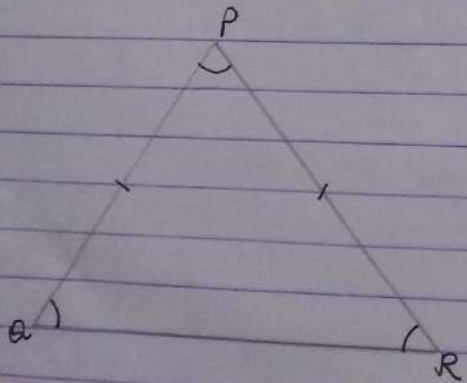
EVALUATION:- Students will be evaluated on the basis of some questions

- 1) What is an isosceles triangle?
- 2) Explain any two properties of an isosceles triangle?
- 3) In the figure given below if  $AB = AC$  then  $\angle ABC$  is equal to which angle in the triangle?



HOME-ASSIGNMENT: The pupil teacher give a worksheet on isosceles triangle.

- 1) If  $PQ = 5\text{cm}$ , what will be the length of  $PR$ .
- 2) If  $\angle QPR = 70^\circ$  then what is the measure of  $\angle PQR$  and  $\angle PRQ$ .



**DISCUSSION  
LESSON**

LESSON No. 1.....

Date.....

Duration of the period.....

Pupil Teacher's Name RENU BALA

Pupil Teacher's Roll No. ....

Class.....

Average Age of the pupils.....

Subject: MATHEMATICS

Topic: ANGLE SUM PROPERTY OF  $\Delta$

- GENERAL OBJECTIVES :-
- 1) To develop scientific attitude in students.
  - 2) To develop logical reasoning skills in the students.
  - 3) To enable students to apply mathematical principals in their lives.

SPECIFIC OBJECTIVES :- KNOWLEDGE :- Students will be able to recall and recognize the concept of angle sum property of triangle.

UNDERSTANDING :- Students will be able to understand the concept of angle sum property with depth of knowledge.

APPLICATION :- Students will be able to apply the concept of angle sum property of triangle on various problems.

SKILLS :- Students develop skills of using this concept.

PREVIOUS KNOWLEDGE ASSUMED :- Pupil teacher assumes that pupils are aware about triangles.

SET INDUCTION / P.K. TESTING :-

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
What is a triangle?	It is a geometrical figure having three sides and three angles.
If one angle of a triangle is $80^\circ$ , another is $70^\circ$ can you tell the third angle?	No Response.
Do you know about angle sum property.	No Response.

STATEMENT OF AIM :- We will discuss about angle sum property.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

ANGLE SUM PROPERTY OF A TRIANGLE

The pupil teacher explains the angle sum property by testing student's knowledge about triangle.

Do you know how many angles are there in a triangle?

Do you know what is the sum of the measures of all three angles of any triangle?

The pupil teacher tells that for knowing the answers of this question, we need to study about the angles sum property of triangle.

STUDENT ACTIVITIES

Students reply that there are three angles in a triangle.

Students are not able to respond to this question.

Students carefully listen to teacher's explanation.

CHALK-BOARD WORK

ANGLE SUM PROPERTY OF A  $\Delta$

Sum of all three angles of a  $\Delta = 180^\circ$

$\angle A + \angle B + \angle C = 180^\circ$

## TEACHING POINTS

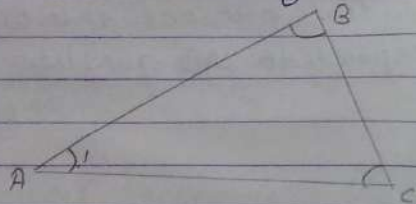
WHAT IS ANGLE SUM PROPERTY of a triangle?

## PUPIL TEACHER ACTIVITIES

The sum of interior angles of a triangle is equal to  $180^\circ$ .

In the figure given below.

measure of  $\angle A$  + measure of  $\angle B$  + measure of  $\angle C = 180^\circ$



$$m\angle A + m\angle B + m\angle C = 180^\circ$$

In a  $\Delta$  given above if  $\angle A = 30^\circ$ ,  $\angle B = 50^\circ$  what is the measure of  $\angle C$

Sol<sup>n</sup> →

$$m\angle A + m\angle B + m\angle C = 180^\circ$$

$$30^\circ + 50^\circ + m\angle C = 180^\circ$$

$$80^\circ + m\angle C = 180^\circ$$

$$m\angle C = 180^\circ - 80^\circ$$

$$m\angle C = 100^\circ$$

$$\therefore \angle C = 100^\circ$$

## STUDENT ACTIVITIES

Students note-down the angle sum property of triangle in their note-books.

Students will write the question and try to solve the question by their own effort.

## CHALK-BOARD WORK

Q Given  $\Delta ABC$   
With  $\angle A = 30^\circ$   
and  $\angle B = 50^\circ$   
Find  $\angle C$ .

$$\angle A + \angle B + \angle C = 180^\circ$$

$$30^\circ + 50^\circ + \angle C = 180^\circ$$

$$\angle C = 180^\circ - 80^\circ$$

$$= 100^\circ$$

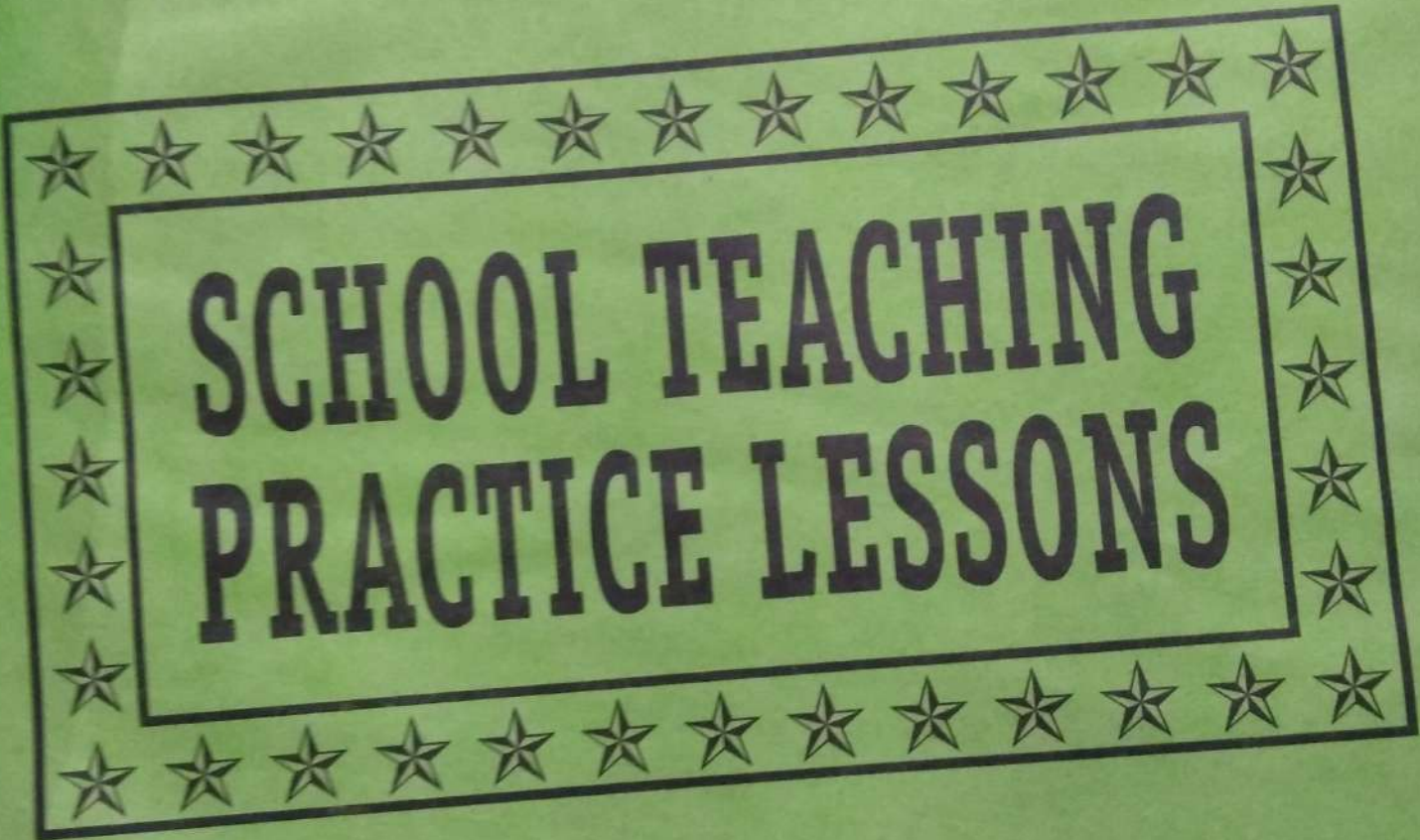


EVALUATION:- Students are evaluated on the topic of angle sum property by the following questions:-

- 1) What is the angle sum property of a triangle?
- 2) Explain the angle sum property using diagram?
- 3) What is an interior angle of a triangle?
- 4) What is the sum of measure of interior Angles?

HOME-ASSIGNMENT:- Pupil teacher will give a worksheet on "angle sum property of angle."

- 1) In a triangle PQR, if  $\angle P = 100^\circ$ ,  $\angle Q = 70^\circ$ ,  $\angle R = 50^\circ$ . What is the measure of  $\angle R$ ?
- 2) In a triangle ABC, if  $\angle A = 50^\circ$ ,  $\angle B = 70^\circ$ , what is the measure of  $\angle C = ?$
- 3) In a triangle MNO, if  $\angle M = 20^\circ$ ,  $\angle N = 45^\circ$  what is the measure of  $\angle O$ ?



**SCHOOL TEACHING  
PRACTICE LESSONS**

Date.....

Duration of the period.....

Pupil Teacher's Name RENU BALA

Pupil Teacher's Roll No. ....

Class.....

Average Age of the pupils.....

Subject MATHEMATICSTopic AREA OF RECTANGULAR PATH

GENERAL OBJECTIVES:- 1) To provide training to students in systematic manner.

- 2) To develop scientific attitude in the students.
- 3) To develop logical reasoning and ability to comprehend among the students.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students will be able to recall and recognize concept of area of rectangular path.

UNDERSTANDING:- Students will be able to apply/understand the concept of rectangular path.

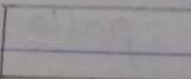
APPLICATION:- Students will be able to apply the knowledge of concept of rectangular path in daily life.

SKILLS:- Students will be able to develop skills of solving problems on area.

PREVIOUS KNOWLEDGE ASSUMED:- Pupil teacher assumes that the students are familiar with the concept of rectangles.

SET INDUCTION/P.K. TESTING:-

PUPIL TEACHER ACTIVITY

What is this  figure known as?

Define a rectangle.

Do you know how to calculate area of rectangular path.

STUDENT ACTIVITY

This is a rectangle.

It is a geometrical <sup>figure</sup> whose opposite sides are equal.

No Response.

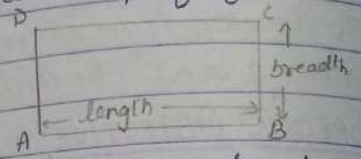
STATEMENT OF AIM:- We'll discuss about area of rectangle.

## TEACHING POINTS

### INTRODUCTION

### Pupil Teacher Activities

Pupil teacher explains the basic concept of rectangle with the help of flashcard.



### PERIMETER OF A RECTANGLE

Perimeter of a rectangle is equal to twice of the sum of length and breadth  
i.e.  $Perimeter = 2(l+b)$

### AREA OF A RECTANGLE

Area of rectangle is equal to multiplication of length and breadth. i.e.  $area = l \times b$

### Meaning of Area of Rectangular path

Now pupil teacher steps towards area of rectangular path with the help of model.

Some space in the form of path is left inside or outside & also in b/w or crosspath in the parks to enable people to walk.

### STUDENT ACTIVITIES

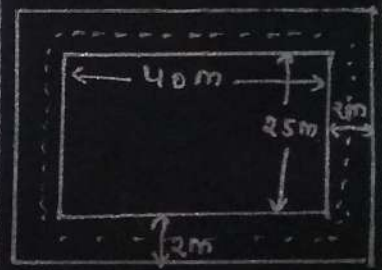
Students will listen to the teacher carefully.

Students will note down the formulae for perimeter and area of a rectangle

Students will listen carefully to understand the concept of rectangular path.

### CHALK-BOARD WORK

### RECTANGULAR PATH



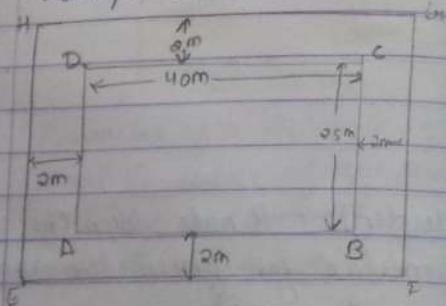
Area of path = Shaded (dotted) Region

## TEACHING POINTS

## PUPIL TEACHER ACTIVITIES

AREA OF  
RECTANGULAR  
PATH

Pupil teacher will explain the concept with the help of an example and model



A rectangular lawn of length  $l = 40\text{ m}$  and base  $= 25\text{ m}$  is to be surrounded externally by path, which is  $2\text{ m}$  wide. Find area of path

$$EF = (40 + 2 + 2)\text{ m} = 44\text{ m}$$

$$FG = (25 + 2 + 2)\text{ m} = 29\text{ m}$$

$$\text{Area of path} = \text{Area of } EFGH$$

$$- \text{Area of } ABCD$$

$$= (44 \times 29 - 40 \times 25)\text{ m}^2$$

$$= (1276 - 1000)\text{ m}^2$$

$$= 276\text{ m}^2$$

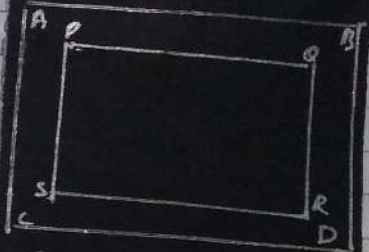
Thus area of path is  $276\text{ m}^2$

## STUDENT ACTIVITIES

## CHALK-BORD WORK

Students will draw a sketch of the model in their note-books.

## Area of Rectangular Path



$$\begin{aligned} \text{Area of Rect. Path} &= \text{Area of } \square ABCD \\ &\quad - \text{Area of } \square PQRS \end{aligned}$$

Students will write the question along with its solution.

EVALUATION:- Student's learning is evaluated by the pupil teacher through these questions

- 1) What is the formula for calculating the perimeter of rectangle?
- 2) What is the formula for calculating area of rectangle?
- 3) How do we calculate the area of a rectangular path? Explain the concept using an example.

HOME ASSIGNMENT:- Pupil teacher will give a worksheet to the students as home-assignment.

- 1) Find the area of the rectangular path, whose length is 50 m and breadth is 30 m to be surrounded externally by path which is 2 m wide.
- 2) A rectangular lawn of length 20 m and breadth 10 m is surrounded externally by a path which is 3 m wide. Find the area of rectangular lawn.

## LESSON No. ...2.....

Date.....

Duration of the period.....

Pupil Teacher's Name RENU BALA

Pupil Teacher's Roll No. ....

Class.....

Average Age of the pupils.....

Subject MATHEMATICSTopic QUADRILATERAL

GENERAL OBJECTIVES:- 1) To provide training to students in systematic manner

- 2) To develop scientific attitude in students.
- 3) To develop logical reasoning and ability to comprehend among the students.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students will be able to recall and recognise about quadrilateral.

UNDERSTANDING:- Students are able to comprehend the concept of quadrilateral and are able to explain well.

APPLICATION:- Students are able to apply and use the mathematical concepts in everyday life.

SKILLS:- Students will be able to develop mathematical skills

PREVIOUS KNOWLEDGE ASSUMED:- It is assumed that students have basic knowledge of quadrilateral.

SET INDUCTION / P.K. TESTING:-

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
1) Can you name some geometrical figures.	Yes, circle, triangle, square, rectangle etc.
2) Have you heard of any other mathematical figure?	No ma'am.
3) Do you know about Quadrilateral?	No Response.

STATEMENT OF AIM:- So students, today we will discuss about quadrilateral in detail.

TEACHING POINTS

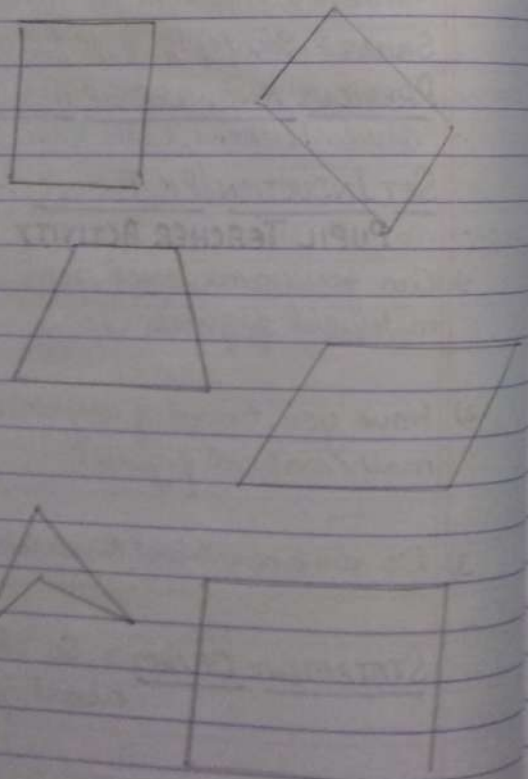
PUPIL TEACHER ACTIVITIES

QUADRILATERAL

Pupil teacher will explain the concept of quadrilateral as in mathematics, a quadrilateral is a four sided closed figure lying in a plane.

See around the class, the table top, the ceiling, the doors the floor all the examples of quadrilateral.

Example of Quadrilateral



STUDENT ACTIVITIES

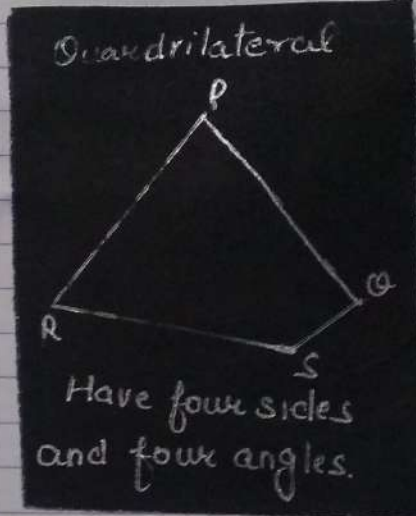
students will listen carefully.

students will note down the definition of quadrilaterals.

students will look around in the class to find the examples of quadrilateral.

Students will draw these different shapes of a quadrilateral in their notebooks

CHALK-BOARD WORK

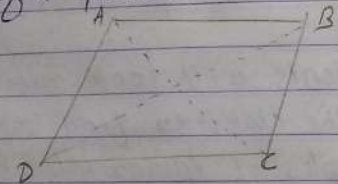


TEACHING POINTS

PUPIL TEACHER ACTIVITIES

VERTICES.

A quadrilateral is a polygon that has four vertices, the points A, B, C, D are called the vertices of a quadrilateral.



Sides.

The line segment AB, BC, CD and DA are the sides of a quadrilateral.

Angles.

The four angles formed by the line segments at vertices are called angles of a quadrilateral.

Diagonals

The two line segments AC and BD joining opposite vertices are known as diagonals.

Adjacent sides

Two sides that have the common vertex are known as adjacent sides.

STUDENT ACTIVITIES

Students will comprehend about the properties of a quadrilateral.

Students note-down about the vertices, angles, sides, adjacent sides and diagonals in their notebooks.

CHALK-BOARD WORK

Vertex - ABCD

Sides - AB  
BC  
CD  
DA

Angles - LA, LB  
LC, LD

Diagonals - AC,  
BD



EVALUATION:- Pupil teacher will ask the students to fill the following blanks on the chart in order to revise the topic

fill in the blanks:-

- 1) A quadrilateral has \_\_\_\_\_ sides
- 2) A quadrilateral has \_\_\_\_\_ pairs of adjacent sides
- 3) A quadrilateral has \_\_\_\_\_ angles
- 4) A quadrilateral has \_\_\_\_\_ diagonals

HOME ASSIGNMENT:- Pupil teacher will give a worksheet to students as home-assignment

- 1) What is quadrilateral?
- 2) Draw the different shapes of the quadrilateral.
- 3) What do you mean by the diagonals?  
A diagonals has how many sides?  
A quadrilateral has how many diagonals?

Date \_\_\_\_\_ Duration of the period \_\_\_\_\_  
Pupil Teacher's Name RENU BALA Pupil Teacher's Roll No. \_\_\_\_\_  
Class \_\_\_\_\_ Average Age of the pupils \_\_\_\_\_  
Subject MATHEMATICS Topic AREA OF CROSS ROADS

GENERAL OBJECTIVES:- 1) To provide training to students in systematic manner

- 2) To lay foundation for higher studies in mathematics.
- 3) To develop various skills in the students.
- 4) To develop scientific attitude in students.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students are able to recall and recognize the concept of area of cross roads.

UNDERSTANDING:- Students are able to understand the concept of Area of cross roads and explain it to others

APPLICATION:- Students will be able to apply the knowledge of area of cross roads in daily life

SKILLS:- Students are able to develop skills to solve problems of area of cross roads

PREVIOUS KNOWLEDGE ASSUMED:- Students are assumed to know about the area of rectangular path.

SET INDUCTION/P.K. TESTING:-

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
1) What is a rectangle?	Geometrical figure with opposite sides are equal
2) What is the perimeter of rectangle?	$2(\text{length} + \text{Breadth})$
3) What is the area of rectangle?	$\text{length} \times \text{Breadth}$
4) Do you know about cross roads?	No Response.

STATEMENT OF AIM:- So students today we will discuss about the area of cross roads.

TEACHING POINTS

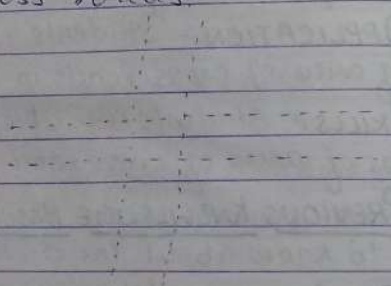
PUPIL TEACHER ACTIVITIES

Introduction

First of all pupil teacher will explain the meaning of cross-roads with the help of examples. Road is a passage we walk or running our vehicles.

Meaning of Cross-roads

When two roads bisect each other, they are called as cross roads.



Area of Cross Roads

Pupil teacher explains how to calculate the area of cross roads using an example.

Two cross-roads each 2 m wide run at right angle through the centre of rectangular park of length 72 m and

STUDENT ACTIVITIES

Students will listen carefully to the teacher's explanation

Students will write down question in their notebooks.

CHECK-BOARD WORK

**Cross-Roads**

When two roads bisect each other they are called cross-roads.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

breadth 48 m such as each is parallel to one of the sides of a rectangle. Find the area of remaining portion of the park.

Now the pupil teacher shall explain its solution.

Solution of given question

ABCD represents park, rectangle PQRS and EFGH represents roads.

$$\begin{aligned} \text{Area of roads} &= \text{Area of PQRS} \\ &+ \text{Area of EFGH} \\ &- \text{Area of } \square \text{LMN} \end{aligned}$$

$$\begin{aligned} &= [48 \times 2 + 72 \times 2 - 2 \times 2] \text{ m}^2 \\ &= [96 + 144 - 4] \text{ m}^2 \\ &= 236 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{Area of remaining portion is} \\ &= 72 \times 48 - 236 \\ &= 3220 \text{ m}^2. \end{aligned}$$

STUDENT ACTIVITIES

Students will understand the concept and then copy down the steps of the answer in their notebooks

CHALK-BOARD WORK

Area of cross roads.

Area of cross roads  
= Area of ABCD  
+ Area of PQRS  
- area of DEFG

EVALUATION:- Pupil teacher will ask the following questions to evaluate student's learning.

1) A rectangular field is 30m in length and 22m in width. Two mutually perpendicular roads, each 2.5m wide, are drawn inside the field so that one road is parallel to the length of the field and the other road is parallel to its width. Calculate the area of cross roads.

HOME ASSIGNMENT:- Teacher will give a worksheet to solve as a home-assignment to students:-

1) Two cross roads, each of width 8m run at right angles through the centre of a rectangular garden of length 50m and breadth 25m and parallel to its sides. Find the area of cross roads.

2) The veranda is 1.25m in length is constructed all along outside of a room 7.5m long and 5m wide. Find the area of veranda.

Date.....  
Pupil Teacher's Name RENU BALA  
Class.....  
Subject MATHEMATICS  
Duration of the period.....  
Pupil Teacher's Roll No.....  
Average Age of the pupils.....  
Topic CONSTRUCTION OF  $\Delta$  (SAS)

GENERAL OBJECTIVES :- 1) To provide training to students in systematic manner.

- 2) To develop scientific attitude in students.
- 3) To develop logical reasoning and ability to comprehend among the students.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students will recall and recognize how to construct triangle using SAS.

UNDERSTANDING:- Students will understand the concept of construction of  $\Delta$  using side angle side.

APPLICATION:- Students will be able to apply the knowledge of construction of triangle.

SKILLS:- Students will construct triangles themselves.

PREVIOUS KNOWLEDGE ASSUMED:- Students are familiar with the concept of construction of triangles.

SET INDUCTION/P.K. TESTING:-

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
What is a triangle?	It is a closed figure made up of three sides.
Define angle sum property of triangle?	Sum of all angles of a triangle is equal to $180^\circ$ .
How can we construct the triangle?	No Response.

STATEMENT OF Aim: So students, today we will study about construction of triangles.

## TEACHING POINTS

## PUPIL TEACHER ACTIVITIES

Introduction

Pupil teacher will introduce the topic firstly by giving the conceptual definition of construction of triangle.

Meaning of construction of triangle

Construction of a triangle is diagrammatical representation of all measurements of sides and angles of triangle.

SAS  
[Side Angle Side]

triangle construction

In this concept of triangle formation, a triangle can be constructed when two of its sides and one angle is given.

Now for more clarification of the concept, pupil teacher will solve the question on notebooks.

## STUDENT ACTIVITIES

## CHALK-BOARD-WORK

Students will listen carefully to the introduction given by the teacher.

Students will note down the definition in their notebooks.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

Question

length of two sides of a triangle POR where PR = 5cm, PO = 3cm and  $\angle P = 70^\circ$ . Construct a triangle using the given measurements.

Steps of construction of a triangle (SAS)

The pupil teacher will explain and write simultaneously the steps involved in the construction of a triangle  
1) Draw a line segment PR of length 5cm

2) At point P, draw an angle formed whose measure is  $70^\circ$ .

3) From the ray Py, cut off line segment PO of length 3cm and joint OR.

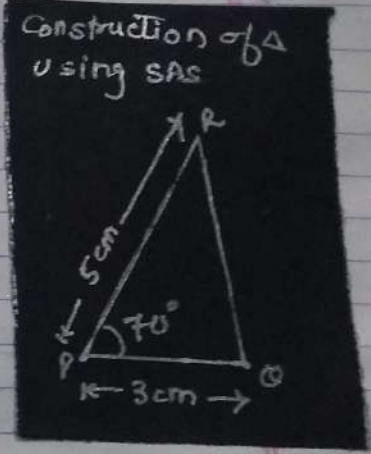
Thus POR  $\Delta$  is the required triangle

STUDENT ACTIVITIES

CHALK-BOARD WORK

Students will write down the question in their notebooks

Students will listen to the explanation carefully and will write down the points in their note-books



EVALUATION:- Pupil teacher will put some questions in order to recall and recognise the student's concept clarity on the topic.

- 1) Construct a triangle  $POQ$  in the notebook whose one side  $PO = 4.5$  cm and other side  $OQ = 4$  cm and the including angle is equal to  $\angle O = 90^\circ$
- 2) Construct a triangle  $MNR$  in the notebook, whose one side  $MN = 9$  cm and other side  $NR = 7$  cm and including angle is equal to  $\angle N = 85^\circ$

HOME-ASSIGNMENT:- Pupil teacher will give homework to students on note-books by writing questions on note blackboard.

- 1) Construct a triangle  $ABC$  in your note-books whose one side  $AB = 4$  cm and  $BC$  other side =  $6$  cm in length and including angle is equal to  $\angle B = 70^\circ$
- 2) What do you mean by SAS property of triangle? Explain using suitable examples.

Date.....  
 Pupil Teacher's Name RENU BALA  
 Class.....  
 Subject MATHEMATICS  
 Duration of the period.....  
 Pupil Teacher's Roll No.....  
 Average Age of the pupils.....  
 Topic CONST. OF  $\Delta$  (USING ASA, RHS)

GENERAL OBJECTIVES:- 1) To provide training to students in a systematic manner.

To develop scientific attitude in students  
 To develop logical reasoning and ability to comprehend among students.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students will recall and recognise the construction of triangles using RHS and ASA.

UNDERSTANDING:- Students will be able to comprehend the concept.

APPLICATION:- Students will be able to apply the concept of construction of triangles using ASA and RHS.

SKILLS:- Students will be able to construct a number of triangles using RHS and ASA.

PREVIOUS KNOWLEDGE ASSUMED:- Teacher assumes that students are familiar with the concept of construction of triangles using SAS.

SET INDUCTION/P.K. TESTING:-

PUPIL TEACHER ACTIVITY	STUDENT ACTIVITY
Do you know how to construct of triangle using SAS?	Yes Ma'am.
What is SAS?	Side Angle Side
Do you know how to construct a $\Delta$ using RHS, and ASA?	No Ma'am.

STATEMENT OF Aim:- Puj So students, today we will discuss and learn how to construct a  $\Delta$  using RHS and ASA.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

Construction of triangle using Angle side Angle (ASA)

Pupil teacher will explain that in a triangle, when two of its angles and the included side is given, it is known as ASA.

Pupil teacher will explain through a question.

The measure of two angles of a triangle ABC are given  $\angle A = 50^\circ$  and  $\angle B = 70^\circ$  and side  $AB = 4\text{cm}$

Pupil teacher will now explain the steps involved:-

- 1) Draw a line AB of 4cm.
  - 2) At point A, draw an angle of  $50^\circ$  measures.
  - 3) At B, draw another angle of measure  $70^\circ$ .
  - 4) let AX and BY intersect at point C.
- Thus  $\Delta ABC$  is the required  $\Delta$ .

STUDENT ACTIVITIES

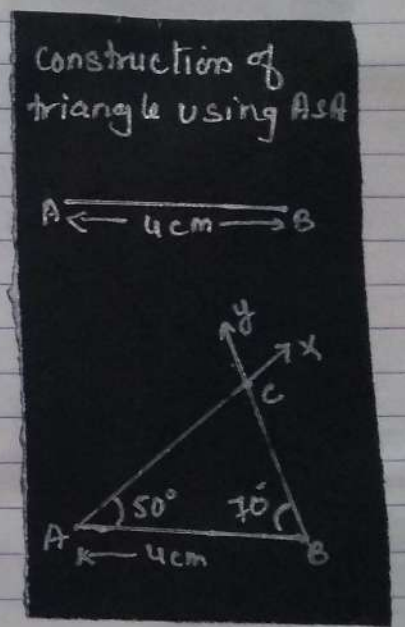
Students will copy down the main points in their notebooks

Students will construct the triangle, following the teacher's explanation.

Here in the figure

- $\angle A = 50^\circ$
- $\angle B = 70^\circ$
- $AB = 4\text{cm}$

CHALK-BOARD WORK





TEACHING POINTS PUPIL TEACHER ACTIVITIES

Pupil teacher will tell students that right angle, hypotenuse, and side are the properties of a right angle triangle.

Construction of triangle using RHS (Right hand Hypotenuse side)

Suppose we have to draw a right angled  $\Delta$  at B whose sides are 3cm, 4cm and 5cm.

- 1) We will firstly draw a line BC of 4cm.
- 2) From point B, we will draw an angle of  $90^\circ$
- 3) Then we shall draw side AB = 3cm and AC = 5cm

The  $\Delta ABC$  formed a right angled at B.

STUDENT ACTIVITIES

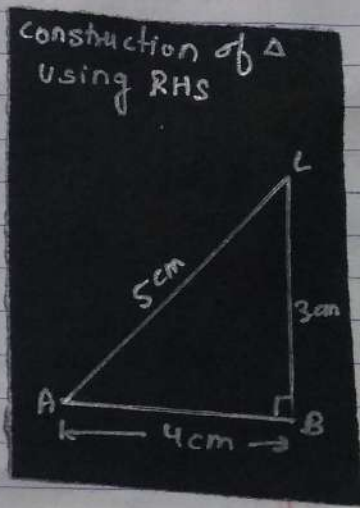
Students will construct a right angled triangle whose  $\angle B = 90^\circ$

AB = 3cm perpendicular

BC = 4cm Base

AC = 5cm Hypotenuse

CHALK-BOARD WORK



EVALUATION:- Pupil teacher will put some questions in order to recall and revise the topics of construction of  $\Delta$ 's.

1) Construct a right angled triangle ABC with  $\angle B = 90^\circ$ , base  $4\text{cm}$ , perpendicular =  $3\text{cm}$  and hypotenuse =  $5\text{cm}$ .

2) Construct a  $\Delta PQR$  of which the side  $PQ$  is of the length  $4.5\text{m}$ , side  $QR$  is of the length  $4\text{m}$  and angle included is equal to  $40^\circ$ .

HOME ASSIGNMENT:- Pupil teacher will give a worksheet to students as homework.

1) What is RHS? Explain with examples.

2) Construct a right angled triangle  $MNB$  with  $\angle B$  measured at  $90^\circ$  where  $MN = 3\text{cm}$ ,  $NB = 4\text{cm}$  and  $MB = 5\text{cm}$ .

3) Construct a  $\Delta PQR$  in which side  $PQ = 5\text{cm}$ , side  $QR = 6\text{cm}$  and included angle is  $50^\circ$ .

Date .....  
Duration of the period .....  
Pupil Teacher's Name RENU BALA  
Pupil Teacher's Roll No. ....  
Class .....  
Average Age of the pupils .....  
Subject MATHEMATICS  
Topic CONSTRUCTION OF  $\Delta$ 'S (SSS)

GENERAL OBJECTIVES:- 1) Students will develop scientific attitude in solving various mathematical problems.

2) Students will develop logical reasoning and ability to comprehend among the students.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students will recall and recognise the concept of construction of triangles.

UNDERSTANDING:- Students will comprehend the concept of SSS in construction of triangles.

APPLICATION:- Students will be able to apply the concept of construction of  $\Delta$ 's using side, side, side.

SKILLS:- Students will develop skills in solving problems related to construction of  $\Delta$ 's using SSS.

PREVIOUS KNOWLEDGE ASSUMED:- Students are assumed to know about the meaning of construction of  $\Delta$ 's (using RHS, SAS).

SET INDUCTION / P.K. TESTING:-

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
What is triangle?	It is a closed figure made up of 3 line segments.
How can we construct the triangle through SAS.	We can construct it with the help of protector, scale and compass.
Can you construct SSS triangles	No Response.

STATEMENT OF AIM:- Well students, today we will learn how to construct a SSS triangle.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

Introduction -

After announcing the topic, the pupil teacher will do introduction of the concept of construction of SSS triangles.

She will explain it using a chart.

Question on construction of triangle.

Students, there is a triangle with sides of length 5cm, 8cm and 11cm respectively.

Now how will we construct a triangle using all these measurements?

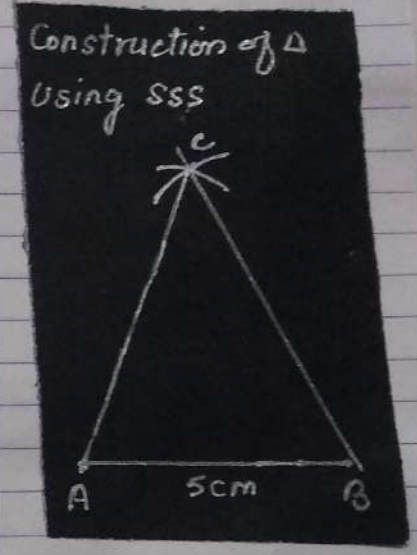
So students after trying for sometime, now pupil teacher will explain the steps to construct a triangle using given measurements.

STUDENT ACTIVITIES

Students will listen to teacher's introduction part very carefully.

Students will copy down the examples from the chart shown by the teacher.

CHALK-BOARD WORK



## TEACHING POINTS

## PUPIL TEACHER ACTIVITIES

Steps for constructing SSS triangle.

Students, the first step is to draw the base <sup>line</sup> of the triangle.

Here it's length is 8 cm. Using scale we make 8 cm on the note-books.

Now similarly with B as centre and radius draw an arc of 5 cm on side BC. Now with C as centre and radius 11 cm draw another arc intersecting the first arc at A. Joint points A and B or A and C. Thus triangle ABC is the required  $\triangle ABC$ .

Here we use compass and scale to make the arcs of radius. This is how the side, side, side (SSS) triangle is formed.

## STUDENT ACTIVITIES

## CHALK-BOARD WORK

Students will firstly note-down the steps of constructing SSS triangle.

Students will simultaneously draw the side-side-side triangle.

Date \_\_\_\_\_  
Pupil Teacher's Name RENU BALA  
Class \_\_\_\_\_  
Subject MATHEMATICS

Duration of the period \_\_\_\_\_  
Pupil Teacher's Roll No. \_\_\_\_\_  
Average Age of the pupils \_\_\_\_\_  
Topic TYPES OF TRIANGLE

EVALUATION - Pupil teacher will put some questions from students in order to revise the topic of construction of SSS conditions of triangles

- 1) Draw a triangle ABC, whose sides are of lengths 6 cm, 10 cm and 7.5 cm respectively.
- 2) Draw a triangle PQR whose sides are of lengths 12 cm, 13 cm and 10 cm. Write the steps to construct a triangle using SSS conditions

HOME ASSIGNMENT: Teacher will provide the students with a worksheet to some questions as home-assignment.

- 1) Draw a Triangle RST whose sides are of your own choice. Write down steps of construction of triangle using SSS conditions.
- 2) Draw a triangle XYZ, whose sides are of length 5 cm, 7 cm and 7.5 cm respectively. Write steps of construction.

- GENERAL OBJECTIVES :-
- 1) Students will develop scientific attitude in solving various mathematical problems.
  - 2) Students will develop logical reasoning and ability to comprehend among students
  - 3) Develop positive attitude in students.

SPECIFIC OBJECTIVES :- KNOWLEDGE - Students will recall and recognise the different types of triangles along with their properties.

UNDERSTANDING - Students will comprehend the types of triangle.

APPLICATION - Students will be able to apply the understanding in their life.

SKILLS - Students will be able to develop skills of solving mathematical problems on their own.

PREVIOUS KNOWLEDGE ASSUMED :- Students are aware about what a triangle is.

SET INDUCTION

<u>PUPIL TEACHER ACTIVITY</u>	<u>STUDENT ACTIVITY</u>
What is a triangle?	Triangle is a closed figure that have three sides and 3 $\angle$ s.
Have you heard about equilateral triangle.	Mix response.
Do you know different types of $\Delta$ 's?	No Ma'am.

STATEMENT OF AIM - So students, today we will study about different types of triangles.

## PRESENTATION

### TEACHING POINTS

Types of triangles on the basis of lengths of sides.

Equilateral triangle

Isosceles triangle

### PUPIL TEACHER ACTIVITIES

Pupil teacher will introduce the concept by telling that, there are three types of triangles that we shall study today.

Teacher shows a chart to students on the types of triangle.

The first type of triangle is equilateral triangle.

It has three equal sides and three equal angles. Each angle of an equilateral triangle measures  $60^\circ$ .

The second type of triangle is isosceles triangle.

By showing figure of isosceles triangle, on the chart, the pupil teacher will tell that an isosceles triangle has two equal sides and two equal angles.

The two angles of the same measure, namely the angles opposite to the sides of the same length.

### STUDENT ACTIVITIES

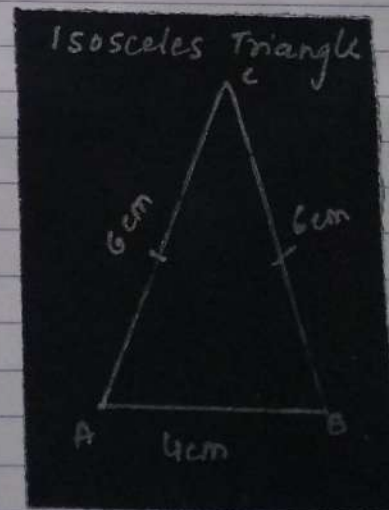
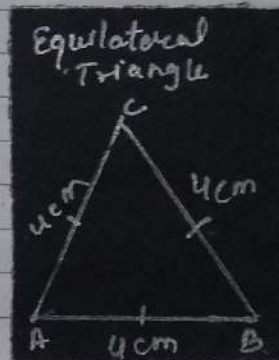
Students will listen to the pupil teacher's introduction carefully.

Students will note down the properties of an equilateral triangle.

Students will listen carefully and will attentively observe the chart.

Students will note down the properties of isosceles triangle.

### CHECK BOARD WORK



TEACHING POINTS

PUPIL TEACHER ACTIVITIES

Scalene Triangle

Third type of triangle is scalene triangle. It has all its sides of different lengths

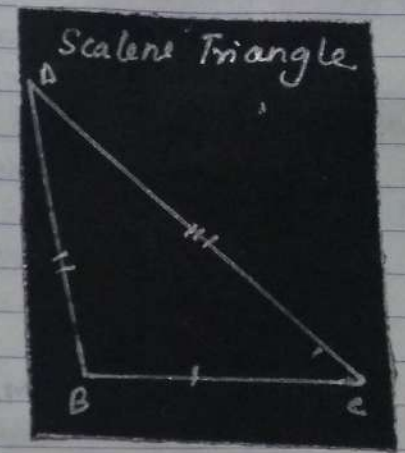
Equivalently, it has all angles of different measures.

Thus we can say that on the bases of lengths of sides of triangles there are three types of triangles i.e.  
equilateral triangle  
isosceles triangle  
Scalene triangle.

STUDENT ACTIVITIES

Students will write down the definition and properties of scalene triangle in their notebooks

CHALK BOARD WORK



Date.....

Duration of the period.....

Pupil Teacher's Name.....

Pupil Teacher's Roll No.....

Class.....

Average Age of the pupils.....

Subject **MATHEMATICS**

Topic: **PROPERTIES OF ISOSCELES**

Evaluation - Pupil teacher will evaluate the student's reasoning on the topic and will ask the following questions

- 1) A triangle has three sides whose length is 3cm, 4.5cm and 6 cm respectively. Which type of  $\Delta$  is it?
- 2) What is a scalene triangle? Explain its properties.
- 3) What is an equilateral triangle? Explain its properties?

HOME-ASSIGNMENT - Pupil teacher will give worksheet to the students as home-assignment.

- 1) Name the  $\Delta$  whose each of the angle is  $60^\circ$ ?
- 2) Name the triangle whose all the sides are of different length?
- 3) Name the triangle whose only two sides are equal?

- GENERAL OBJECTIVES →
- 1) Students will develop scientific attitude in solving various mathematical problems.
  - 2) Students will develop logical reasoning and thinking.
  - 3) Students will develop positive attitude towards learning mathematics

SPECIFIC OBJECTIVES - KNOWLEDGE - Students will recall and recognize the properties of isosceles triangle.

UNDERSTANDING - Students will comprehend the properties of isosceles triangle.

APPLICATION - Students will be able to apply the understanding in practical life

SKILLS - Students will be able to develop the skills of solving mathematical problem based on isosceles triangle

PREVIOUS KNOWLEDGE ASSUMED :- Students are aware of an isosceles triangle.

SET INDUCTION :-

PUPIL TEACHER ACTIVITY	STUDENT ACTIVITY
What is a triangle?	A closed figure made up of three line segments.
What is an isosceles triangle?	A type of triangle whose two sides are equal
Do you know some other properties of isosceles triangle.	No Ma'am.

STATEMENT OF Aim :- So students today we will study about different properties of an isosceles triangle.



TEACHING POINTS

PUPIL TEACHER ACTIVITIES

INTRODUCTION

Pupil teacher will introduce the topic by linking it with students previous knowledge. Then after that she will herself define an isosceles triangle.

An isosceles triangle is a triangle with two congruent sides and congruent base angles.

Do you know students, in the above definition what does congruent mean?

Congruent means equal

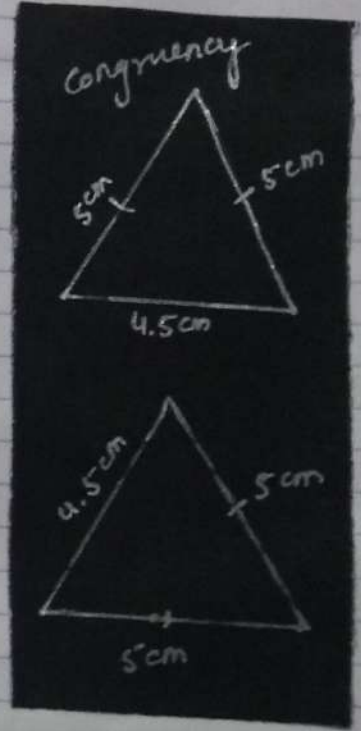
For Ex. - No matter which direction the triangle's point points, it's an isosceles triangle if its two sides are congruent.

STUDENT ACTIVITIES

Students will listen to the pupil teacher explanation carefully.

Students will not do down the important points in their notebooks

CHALK-BOARD WORK



TEACHING POINTS

PUPIL TEACHER ACTIVITIES

STUDENT ACTIVITIES

CHALK-BOARD WORK

PROPERTIES OF ISOSCELES TRIANGLE

Pupil teacher will tell students about the properties of an isosceles triangle.

Students will comprehend all the properties of an isosceles triangle.

An isosceles triangle has two sides congruent sides.

In addition, all isosceles triangles have congruent base angles.

Students will also write down the properties in their notebooks and draw the required figures.

If we know the measure of either of base angle, then we can determine the measure of the third angle. Since the angles add up to 180°, the third angle is 180° minus two times a base angle.

i.e Third angle =  $180^\circ - 2 \times \text{base angle}$

EVALUATION - Pupil teacher will ask questions to evaluate students learning.

- 1) State one important property of an isosceles triangle.
- 2) If the base angle in an isosceles triangle measured as  $58^\circ$  then find the measures of the open angle using angle sum property.
- 3) How many sides are congruent in an isosceles  $\Delta$ .

HOME ASSIGNMENT - Pupil teacher will give work sheet to students as their home assignment.

Q Find the measures of the following angles of an isosceles triangle.

- a) base angle =  $42^\circ$  then open angle = ?
- b) open angle =  $87^\circ$  then base angle = ?
- c) base angle =  $38^\circ$  then open angle = ?

Date.....

Duration of the period.....

Pupil Teacher's Name.....

Pupil Teacher's Roll No.....

Class.....

Average Age of the pupils.....

Subject **MATHEMATICS**

Topic **PYTHAGORAS THEOREM**

- GENERAL OBJECTIVES :-
- 1) Students will develop scientific attitude in solving mathematical problems
  - 2) Students will develop logical reasoning and ability to comprehend among the students.

SPECIFIC OBJECTIVES :- KNOWLEDGE :- Students will recall and recognise the concept of pythagoras theorem.

UNDERSTANDING :- Students will & be explain the concept of pythagoras theorem.

APPLICATION :- Students will be able to apply the concept in solving mathematical problems.

SKILLS :- Students will develop competency skills.

PREVIOUS KNOWLEDGE ASSUMED :- Students are familiar with R.H.S sss conditions of triangle.

SET INDUCTION / P.K. TESTING :-

PUPIL TEACHER ACTIVITY	STUDENT ACTIVITY
What is right angle?	Triangle made up of right angle, hypotenuse and side
Do you know about R.H.S. condition of triangle.	No Madam.
Explain the pythagoras theorem?	No Response

STATEMENT OF AIM :- Today we will learn about pythagoras theorem

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

MEANING OF PYTHAGORAS THEOREM

Pupil teacher will explain the meaning of pythagoras theorem

"In a right angle triangle, the square of hypotenuse is equal to the sum of squares of its two other sides.

ACTIVITY

Pupil teacher will ask students to draw three right triangles name as ΔPQR, with right angle at Q.

measure the length of sides P, Q, R in each case.

compare  $p^2$ ,  $q^2$  and  $r^2$  and tabulate the result.

Right Δ	Measurement			Squares			Difference $q^2 - (p^2 + r^2)$
	p	q	r	p	q	r	
1							
2							
3							

what do we observe?  
The difference  $q^2 - (p^2 + r^2)$  in each case is nearly 0.

STUDENT ACTIVITIES

students will pay attention

students will understand the meaning and will write down it in their note-books.

students will perform the instructions given by the teacher.

students will find out the concerned values.

CHALK-BOARD WORK

Pythagoras Theorem

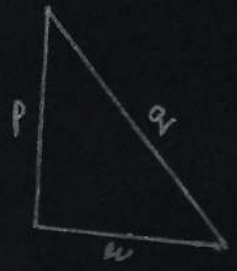
$$p^2 + r^2 = q^2$$

where

q = hypotenuse

p = perpendicular

r = Base.



### TEACHING POINTS

### PUPIL TEACHER ACTIVITIES

In a right angle triangle, the square of hypotenuse equals to the sum of the squares of its sides.  
If  $PQR$  is a right angle triangle at  $Q$ . So  $PR$  is hypotenuse and  $PQ$  and  $QR$  are the perpendicular and base.

$$(PR)^2 = (PQ)^2 + (QR)^2$$

$$(PR)^2 > (PQ)^2 ; (PR)^2 > (QR)^2$$

$$PR > PQ ; PR > QR$$

Thus in right angle  $\Delta$ , the hypotenuse is the longest side

The lengths of side  $BC$  and  $AC$  of a right angled  $\Delta ABC$  at  $C$ , be  $6\text{ cm}$  and  $8\text{ cm}$ . What is the length of its hypotenuse.

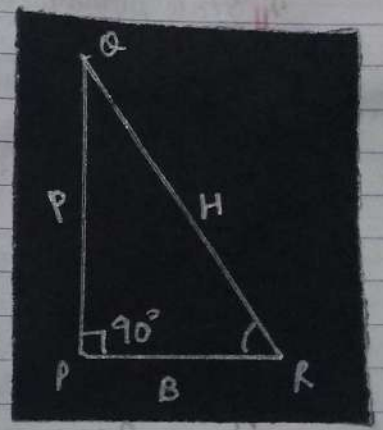
$$\begin{aligned} AB^2 &= AC^2 + BC^2 \\ &= 8^2 + 6^2 \\ &= 64 + 36 \\ AB &= 10\text{ cm} \end{aligned}$$

### STUDENT ACTIVITIES

Students will write down the steps properly.

Students will write down the question and the steps of the answer.

### CHALK-BOARD WORK



EVALUATION:- Pupil teacher will ask questions to evaluate students learning.

- 1) State pythagoras theorem with examples.
- 2) The length of side BC and AC of  $\triangle ABC$  right angled at C, be 10cm and 9cm respectively, what is the length of its hypotenuse.
- 3) The lengths of a right angled  $\triangle$ 's perpendicular and base be 3cm and 4cm respectively. what is the length of its hypotenuse.

HOME-ASSIGNMENT:- Pupil teacher will give worksheet to the students as home assignment.

- 1) If perpendicular and base of a right angled  $\triangle$  are given, find the hypotenuse
  - (a) Perpendicular = 5cm Base = 12cm  
Hypotenuse = ?
  - (b) Perpendicular = 9cm, Base = 12cm  
Hypotenuse = ?

Date .....  
Pupil Teacher's Name .....  
Class .....  
Subject MATHEMATICS  
Duration of the period .....  
Pupil Teacher's Roll No .....  
Average Age of the pupils .....  
Topic CONGRUENT TRIANGLES

GENERAL OBJECTIVES:- 1) To lay foundation for higher studies in Mathematics.

To provide training in a systematic manner.  
To develop scientific attitude in the students.

SPECIFIC OBJECTIVES:- KNOWLEDGE:- Students will be able to recall and recognise the term congruent triangle.

UNDERSTANDING:- Students will be able to understand the concept of congruent triangles.

APPLICATION:- students will be able to apply the knowledge of congruent triangles in their lives.

SKILLS:- students will be able to evaluate term congruency.

PREVIOUS KNOWLEDGE ASSUMED:- Students are assumed to be familiar with the concept of triangles.

SET INDUCTION:-

PUPIL TEACHER ACTIVITY	STUDENT ACTIVITY
Define term triangle	A closed figure made up of three line segments
What do you mean by similar?	It means two things are same to each other
What is congruency?	It mean two things are same in shape and size
Define congruency in triangle	No Response

STATEMENT OF Aim:- Students today we will learn about congruent triangles

## TEACHING POINTS

## MEANING OF CONGRUENCY

## PUPIL TEACHER ACTIVITIES

Pupil teacher will explain that the subjects which have same shape and same size are known as congruent objects, and so the relation of two objects being congruent is known as congruency.

Pupil teacher explains about the congruency of figures with the help of two figures.

## CONGRUENCY OF FIGURES

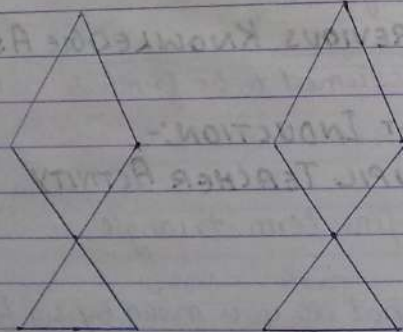


Fig 1

Fig 2

In this case, figure 1 is said to be congruent to figure 2 if fig 1 covers fig 2 exactly.

This method of comparing figures is called as method of superposition.

## STUDENT ACTIVITIES

## CHALK-BOARD WORK

Students will write down the meaning of congruency.

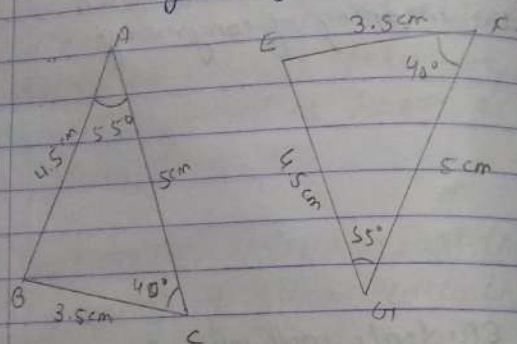
Students will draw the figures in their note-books.

**Congruency**  
Figures that have same shape and size are called as congruent figures.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

Thus when fig 1 is congruent to fig 2 we write it as  
 $\text{Fig 1} \cong \text{Fig 2}$ .



EXPLANATION WITH EXAMPLE

From the above figures we must note that

$$\angle A = \angle E; \quad \angle B = \angle E$$

$$\angle C = \angle F$$

also  $AB = EF$

$AC = FG$

$BC = EF$

Hence the corresponding triangles  $\triangle ABC$  and  $\triangle EFG$  give us a congruency so

$$\triangle ABC \cong \triangle EFG$$

This is how we prove congruency

STUDENT ACTIVITIES

CHALK-BOARD WORK

Students will write down the example into their note-books

Students will carefully write down the steps of congruency and will understand the concept.

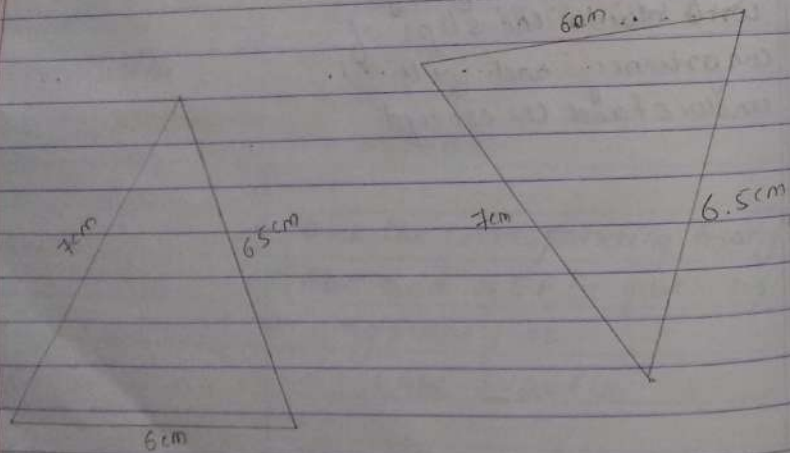


Evaluation:- Pupil teacher will evaluate the understanding of the students by following questions

- 1) What do you mean by congruent?
- 2) How can we compare the congruent figures?
- 3) Explain proper steps for congruency of triangle?

Home-Assignment:- Pupil teacher will provide the worksheet to the students as home-assignment:-

- 1) Name the triangles as per their congruency.



LESSON No. 11  
Date.....  
Pupil Teacher's Name RENU BALA  
Duration of the period.....  
Class.....  
Pupil Teacher's Roll No.....  
Subject MATHEMATICS  
Average Age of the pupils.....  
Topic EQUILATERAL TRIANGLE

- GENERAL OBJECTIVES:-
- 1) To lay foundation for higher studies in mathematics
  - 2) To provide training in a systematic manner.
  - 3) To develop reasoning skills among students.

SPECIFIC OBJECTIVES - KNOWLEDGE:- Students will be able to recall and recognize the equilateral triangles.

UNDERSTANDING:- Students shall explain the concept of equilateral triangle.

APPLICATION:- Students will apply the concept in their daily life.

SKILLS:- Students will develop skills in solving mathematical problems.

PREVIOUS KNOWLEDGE ASSUMED:- Students are assumed to be aware about the concept of  $\Delta$ 's.

### SET INDUCTION

PUPIL TEACHER ACTIVITY	STUDENT ACTIVITY
What is a triangle?	Three sided closed figure made up of three lines segment
What is an equilateral triangle?	No Response.
Do you know any property of equilateral triangle?	No Response

STATEMENT OF Aim:- We'll today learn about equilateral triangle.

## TEACHING POINTS

### INTRODUCTION TO EQUILATERAL TRIANGLE

## PUPIL TEACHER ACTIVITIES

Pupil teacher will introduce the concept of Equilateral triangle by performing an activity :-

She will draw three different triangles and will ask students to do the same in their note-books. Students can draw the triangles of any length

then the pupil teacher will ask students of her class to measure the lengths of sides of each triangle.

If any student draw the triangle whose each side is equal in length then it is known as equilateral triangle.

## STUDENT ACTIVITIES

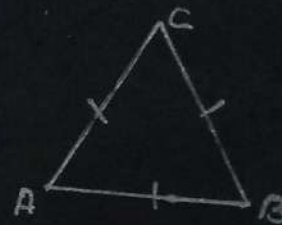
Students will listen carefully and attentively.

Students measure the length of sides of the triangles drawn.

Students note-down important points

## CHALK-BOARD WORK

Equilateral  
triangle.



$$AB = BC = CA$$

All sides are equal in an equilateral triangle.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

Pupil teacher will now discuss the properties of an equilateral triangle

PROPERTIES OF AN EQUILATERAL TRIANGLE

In an equilateral triangle all three sides are equal i.e. they are of same length.

and therefore all three sides angles of the equilateral triangle are also equal.

The three angles of an equilateral triangle are measured as  $60^\circ$ .

Perimeter of an equilateral triangle is the sum of all its sides.

i.e. perimeter =  $3 \times \text{side}$

STUDENT ACTIVITIES

CHALK-BOARD WORK

Students will note-down the properties of the equilateral triangle.

Perimeter of an equilateral triangle =  $3 \times \text{side of triangle}$ . and all angles =  $60^\circ$

EVALUATION - Pupil teacher will evaluate the students learning by asking questions.

- 1) If a triangle has all three sides of length 4cm, then which type of triangle is it known as?
- 2) If the side of an equilateral triangle is of 8cm in length, what will be the perimeter of triangle.
- 3) Write down the formula for calculating the perimeter of triangle.

HOME-ASSIGNMENT - Pupil teacher will provide a worksheet to the student and ask the following questions

- (1) Explain any two properties of an equilateral triangle.
- (2) Calculate the perimeter of triangle in each case.
  - a) Side = 8cm
  - b) Side = 4cm
  - c) Side = 10cm

Date.....

Pupil Teacher's Name.....

Class.....

Subject.....

Duration of the period.....

Pupil Teacher's Roll No.....

Average Age of the pupils.....

Topic: FINDING SQUARE OF A NUMBER

MATHEMATICS

GENERAL OBJECTIVES

- 1) Students will develop scientific attitude towards solving of problems.
- 2) Students will develop interest towards mathematics for higher studies.
- 3) Students will develop logical and analytical skills.

SPECIFIC OBJECTIVES

- KNOWLEDGE :- Students will be able to recall and recognize the square numbers and finding the square.

UNDERSTANDING :- Student will develop comprehend skills about the concept of square of numbers.

APPLICATION :- Students will be able to apply the concept in solving day to day problems.

SKILLS :- Students will develop analytical skills.

PREVIOUS KNOWLEDGE ASSUMED :- Students are assumed to know about the basic concept of Number.

P.K. TESTING/SET INDUCTION

PUPIL TEACHER ACTIVITY	STUDENT ACTIVITY
How many types of numbers do you have heard about in mathematics?	whole no's, natural numbers, rational and irrational numbers
Do you know what are integers?	Integers are positive and negative numbers.
What is the square of an integer?	No Response.

STATEMENT OF AIM :- So students today we will discuss and study about square of a number.

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

SQUARE OF AN INTEGER

Pupil teacher will introduce the concept by telling about what is the meaning of square of an integer.

DEFINITION

A square of an integer is the product of same integer with itself.

EXAMPLE

If an natural number  $m$  can be expressed as  $n^2$  where  $n$  is also a natural number then  $m$  is known as a square number.

let  $m = 36$   
then  $n^2 = ?$

Now  $m$  can be expressed as  $n^2$  i.e.

$$m = (6)^2 = 6 \times 6$$

$$= 36$$

STUDENT ACTIVITIES

CHALK BOARD WORK

Students will listen to the introduction given by teacher carefully.

Students will write down the definition of square of a number along with examples.

Square of an integer

$$m = n^2$$

If  $n = 6$

then  $m = 6^2$

$$= 6 \times 6$$

$$= 36$$

TEACHING POINTS

PUPIL TEACHER ACTIVITIES

FINDING SQUARES OF A NUMBER

Pupil teacher will discuss the basic one digit squares of a natural number.

$$1^2 = 1 \quad ; \quad 6^2 = 36$$

$$2^2 = 4 \quad ; \quad 7^2 = 49$$

$$3^2 = 9 \quad ; \quad 8^2 = 64$$

$$4^2 = 16 \quad ; \quad 9^2 = 81$$

$$5^2 = 25 \quad ; \quad 10^2 = 100$$

Now we find the squares of two digit numbers

$$11^2 = 121 \quad ; \quad 16^2 = 256$$

$$12^2 = 144 \quad ; \quad 17^2 = 289$$

$$13^2 = 169 \quad ; \quad 18^2 = 324$$

$$14^2 = 196 \quad ; \quad 19^2 = 361$$

$$15^2 = 225 \quad ; \quad 20^2 = 400$$

For calculating  $=(12)^2$

$$\begin{array}{r} (12)^2 \\ \hline 144 \end{array}$$

$$(13)^2 = 1(3+3)(3 \times 3)$$

$$= 169$$

STUDENT ACTIVITIES

CHALK BOARDWORK

Students write down squares of one digit numbers in their notebooks.

Students will draw the table for two digit numbers square.

EVALUATION:- Pupil teacher will evaluate students understanding of the concept by asking few questions:-

1) What is a square number? Explain using suitable examples.

2) Fill in the blanks with appropriate squares.

a)  $(4)^2 =$

b)  $(9)^2 =$

c)  $(8)^2 =$

d)  $(10)^2 =$

e)  $(7)^2 =$

f)  $(7)^2 =$

HOME-ASSIGNMENT :- Pupil teacher will give worksheet to students as home assignment.

1) If values of  $n$  are given find the values of  $m$ , when the relation between them is  $m = n^2$ .

a)  $n = 14$  ;  $m = ?$

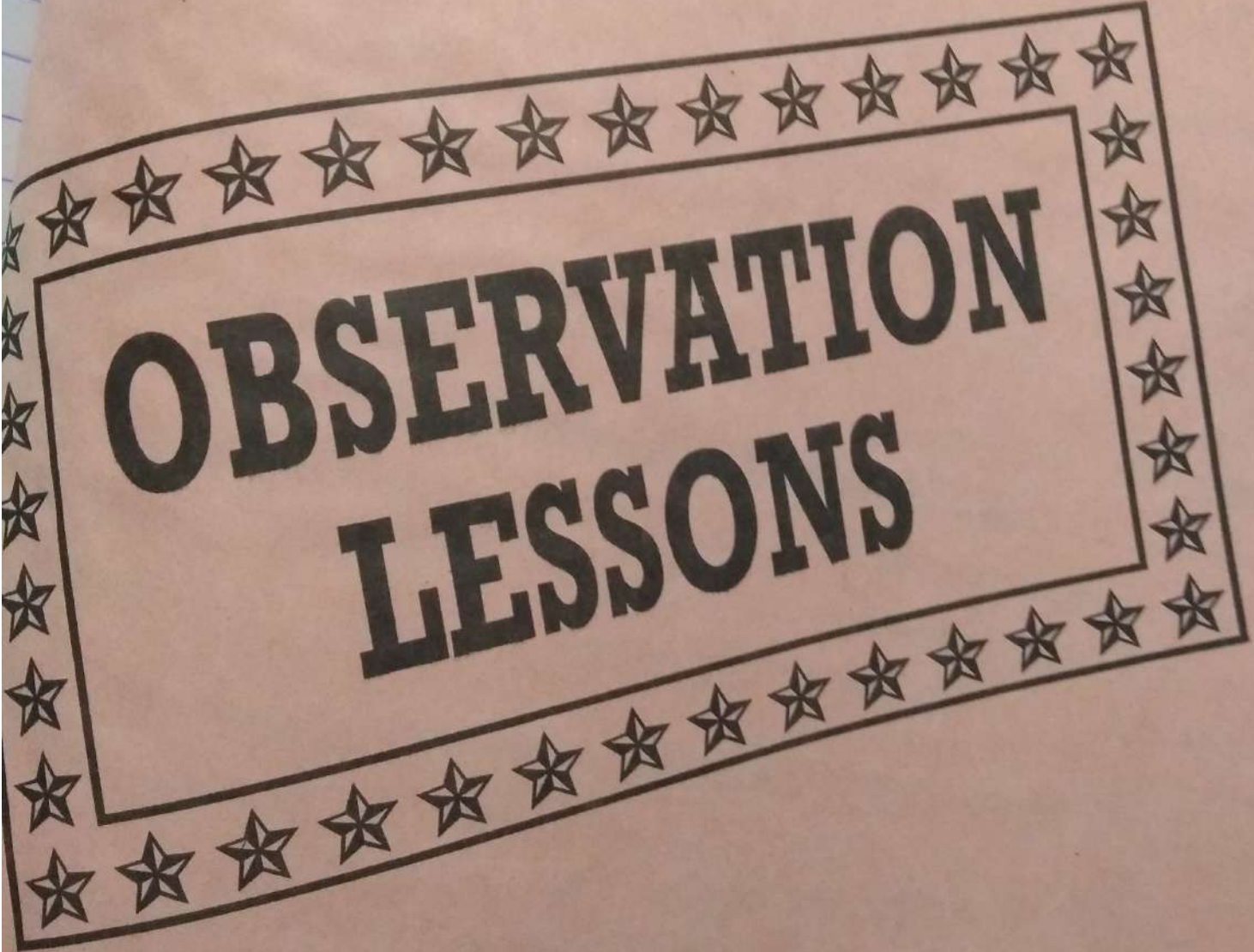
b)  $n = 12$  ;  $m = ?$

c)  $n = 18$  ;  $m = ?$

d)  $n = 9$  ;  $m = ?$

e)  $n = 19$  ;  $m = ?$

f)  $n = 17$  ;  $m = ?$



**OBSERVATION  
LESSONS**



## Observation Lesson No. : 1

Pupil Teacher's Name.....

Subject..... Social Science

Topic..... Means of Transport

Class.....

Duration.....

Date.....

- The lesson plan was good.
- Blackboard was also used by the pupil teacher.
- Teaching aids were not properly used by the pupil teacher.
- Students were involved with teacher in developing the lesson.
- Voice of pupil teacher was loud and clear.
- Home work was also given by the pupil teacher.

Sign. of Pupil Teacher

Sign. of Supervisor

## Observation Lesson No. : 2

Pupil Teacher's Name.....

Subject..... हिंदी

Topic..... कहानी पढ़ना

Class.....

Duration.....

Date.....

- 1) Voice of pupil teacher was loud and very clear.
- Lesson plan was good.
- Teaching aids were used by the pupil teacher.
- Topic of the lesson was announced by the pupil teacher at proper time.
- Students were fully involved in the lesson with pupil teacher.
- Home work was also given by the pupil teacher.

Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No. : 3.....

Pupil Teacher's Name..... Class.....  
Subject..... Home Science..... Duration.....  
Topic..... Balanced Diet..... Date.....

- The lesson plan was very good.
- Teaching aids were not very effective.
- Pupil teacher announced the topic at proper time.
- Blackboard was also used by the pupil teacher.
- Home work was given by the pupil teacher.
- Pupil teacher was confident.

Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No. : 4.....

Pupil Teacher's Name..... Class.....  
Subject..... Maths..... Duration.....  
Topic..... Angle Sum property of  $\Delta$ ..... Date.....

- The lesson plan was very good.
- Voice of pupil teacher was loud and clear.
- Topic of the lesson was announced by the pupil teacher at proper time.
- Class was not in full control of the pupil teacher.
- Teaching aids were used by pupil teachers effectively.

Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No. : 5.....

Pupil Teacher's Name..... Class.....  
Subject..... English..... Duration.....  
Topic..... Articles..... Date.....

- The lesson plan was very good.
- Blackboard was also used by the pupil teacher.
- Teaching aids were not very effective.
- Topic was announced by the pupil teacher at a proper time.
- voice was loud and clear.
- Blackboard work was not good.

Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No. : 6.....

Pupil Teacher's Name..... Class.....  
Subject..... Computer..... Duration.....  
Topic..... Uses of Internet..... Date.....

- The lesson plan was good.
- Students were involved in the topic.
- Teaching aids were used by pupil teacher.
- Lesson plan was effective.
- Previous knowledge was checked by the pupil teacher.
- Voice was loud and clear.
- Home work was given by pupil teacher.

Sign. of Pupil Teacher

Sign. of Supervisor

## Observation Lesson No. : 7

Pupil Teacher's Name.....

Class.....

Subject..... Commerce

Duration.....

Topic..... Partnership

Date.....

- lesson plan was good.
- Blackboard was also used by the pupil teacher
- Topic was announced by the pupil teacher out of time
- Teaching aids were used by the pupil teacher.
- Voice of the pupil teacher was loud and clear.

Sign. of Pupil Teacher

Sign. of Supervisor

## Observation Lesson No. : 8

Pupil Teacher's Name.....

Class.....

Subject..... Economics

Duration.....

Topic.....

Date.....

- lesson plan was not very effective
- Voice of pupil teacher was loud and clear.
- Blackboard was also used by the pupil teacher.
- Previous knowledge of pupils of the class was also checked by the pupil teacher
- Topic was announced by the pupil teacher at proper time.

Sign. of Pupil Teacher

Sign. of Supervisor