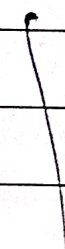
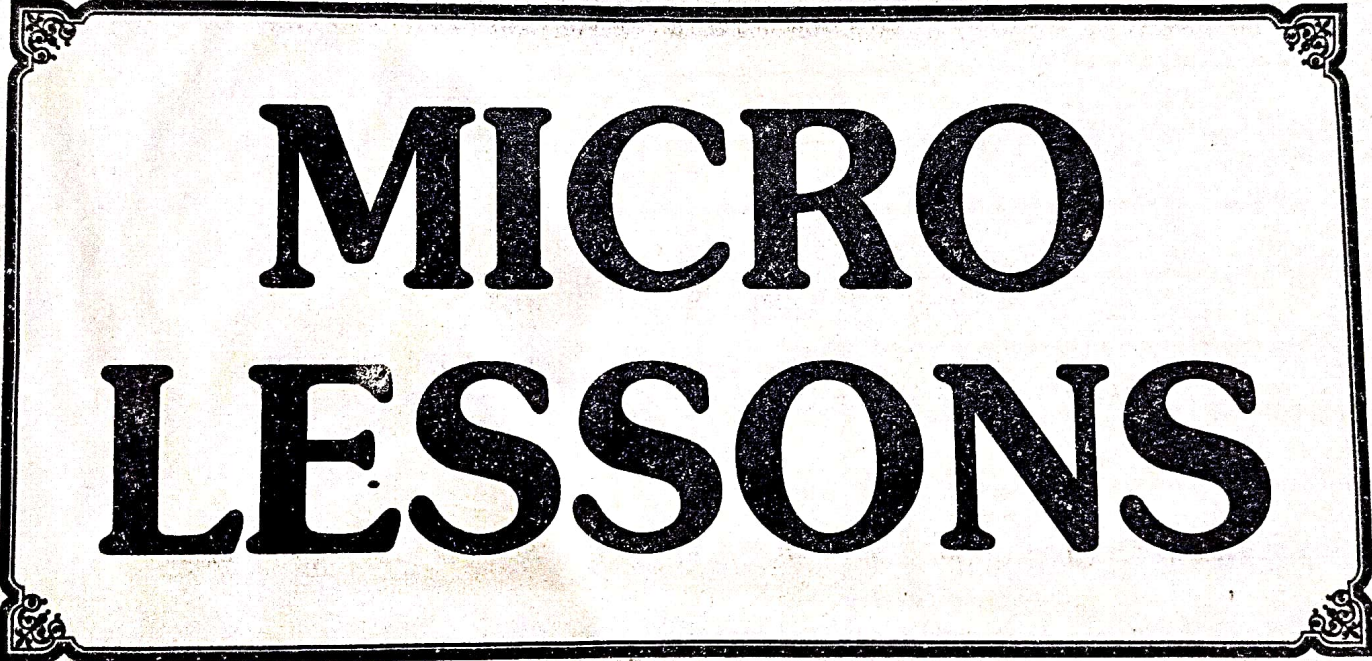


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MICRO LESSONS

LESSON No.

Date..... Duration of the Period.....5-6...minutes
 Pupil teacher's Name..Aditi..Deswal Pupil Teacher's Roll no.....
 Class.....VI..... Average Age of the pupils11...years....
 Subject..Teaching Of Mathematics Topic.....Numbers.....

SKILL OF → SKILL OF INTRODUCTION

<u>Teacher's Activity</u>	<u>Pupil's Activity</u>
Good Morning, Students	
Students, do you know about the counting?	Yes, ma'am
Students, Tell about the counting?	1, 2, 3, --- do on
What are even numbers?	2, 4, 6, 8, --- etc
So, even no. is divisible by 2?	Yes, Ma'am
What are odd numbers?	1, 3, 5, 7, --- etc
So, odd numbers are those numbers which are not divisible by 2?	yes, Ma'am

TEACHER'S ACTIVITY

Okay students, natural numbers are the numbers which don't include zero (0) (1, 2, 3, 4, ---)

Do you know about the whole numbers?

Whole numbers are the numbers which also include zero i.e. 0, 1, 2, 3, 4, ---

What are prime numbers?

So, prime numbers are the numbers which are divisible by itself and 1 only.

What are the composite numbers in counting?

So, composite numbers are positive integers with factors other than 1 and itself.

PUPILS ACTIVITY

No, Ma'am

7, 14, 41, ---

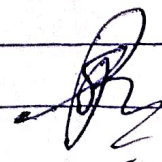
Yes, Ma'am

4, 6, 8, ---

Yes, Ma'am

OBSERVATION TABLE

S. No	Component	Rating scale				
		Very Poor	Poor	Below Average	Average	Good
1.	Skill of Questioning	1	2	3	4	5
2.	Skill of Introduction	1	2	3	4	5
3.	Skill of Stimulus Variation	1	2	3	4	5
4.	Skill of re-inforcement	1	2	3	4	5
5.	Skill of illustration with example	1	2	3	4	5



LESSON No.2.....

Date..... Duration of the Period.....5-6 minutes

Pupil teacher's Name..Aditi..Dewal Pupil Teacher's Roll no.....

Class.....VII..... Average Age of the pupils12 years

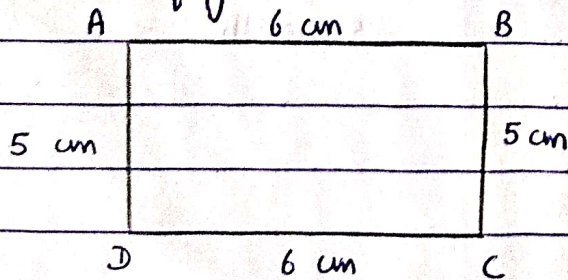
Subject..Teaching of Mathematics.. Topic.....Area of Rectangle.....

SKILL OF → SKILL OF STIMULUS VARIATION

TEACHING ACTIVITY

What is the area of any shape.

Students tell me about these figures and find the area of the given figure.



Students tell me how many lines are there and sides in figure?

PUPIL'S ACTIVITY

The area can be defined as the space occupied by a shape.

It contains four lines and sides AB, AC, BD, CD

TEACHER'S ACTIVITY

Tell me about the length of the figures?

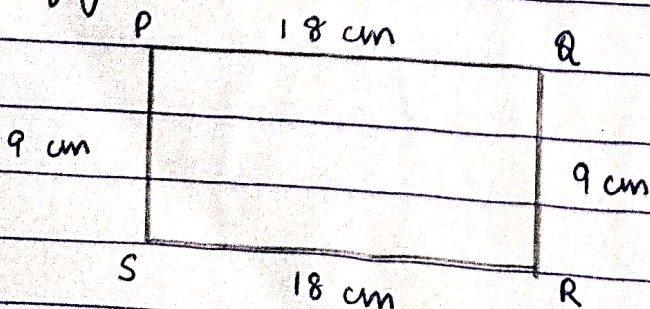
Tell me about breadth of the figure?

What is the formula of the area of rectangle?

So, Area of rectangle is $6 \text{ cm} \times 5 \text{ cm} = 30 \text{ cm}^2$

What is the unit of area?

Tell me about the length and breadth of figure?



PUPIL'S ACTIVITY

Length is
 $AB = CD = 6 \text{ cm}$

Breadth is
 $AD = BC = 5 \text{ cm}$

Area = Length $\times$ Breadth

Yes Ma'am

Unit²

Length = 18 cm
Breadth = 9 cm

OBSERVATION TABLE

S.No.	Component	Rating Scale				
		Very Poor	Poor	Below Average	Average	Good
1.	Skill of Questioning	1	2	3	4	5
2.	Skill of Introduction	1	2	3	4	5
3.	Skill of Reinforcement	1	2	3	4	5
4.	Skill of Stimulus Variation	1	2	3	4	5
5.	Skill of Illustration with example	1	2	3	4	5

LESSON No. ...3.....

Date..... Duration of the Period..... 5-6 minutes..

Pupil teacher's Name Aditi Deswal Pupil Teacher's Roll no.....

Class VII Average Age of the pupils 12 years

Subject Teaching Of Mathematics Topic..... Volume..... Of..... Cuboid.....

SKILL OF → Skill of Problem Solving

TEACHER'S ACTIVITY

What is Volume?

Can you give me an example of Volume?

What is Cuboid?

Give an example of the cuboid?

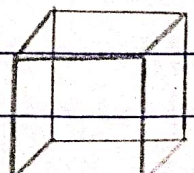
PUPIL'S ACTIVITY

The Capacity of an object is called Volume.

Like Capacity of taking/ holding water is the volume of glass.

A three dimensional figure which has different length, breadth and height are called cuboid.

Chalk Box



TEACHER'S ACTIVITY

What is a 3-D figure?

What is the difference between area and volume?

How many faces a cuboid have?

How many edges cuboid have?

What is the area of rectangle?

What is the volume of cuboid?

STUDENT'S ACTIVITY

A 3D shape can be defined as a solid figure or an object or shape that has three dimensions.

The volume is always defined for a 3-D object.

Area is always defined for 2-D or object in 2-D plane.

Cuboid has six rectangular faces.

Cuboid have 12 edges.

Area = length $\times$ Breadth

No response

OBSERVATION TABLE

S.No	Component	Rating Scale				
		Very Poor	Poor	Average	Good	Excellent
1.	Skill of Questioning	1	2	3	4	5
2.	Skill of Introduction	1	2	3	4	5
3.	Skill of re-inforcement	1	2	3	4	5
4.	Skill of Stimulus Variation	1	2	3	4	5
5.	Skill of illustration with example	1	2	3	4	5

LESSON No.4.....

Date..... Duration of the Period.....5....6...minutes
 Pupil teacher's Name/Acti...D.R. Sankh... Pupil Teacher's Roll no.....
 ClassVI..... Average Age of the pupils11....years..
 Subject Teaching...of...Mathematics Topic...Circumference...of...Circle..

SKILL OF → Skill of Reinforcement.

TEACHER'S ACTIVITY

Students, Can you tell me about the definition of Circle?

What is the circumference of circle?

Students, Can you tell me about the formula of perimeter of rectangle?

Response of Students is very good.

PUPIL'S ACTIVITY

A circle is a round shaped figure that has no corners or edges.

The circumference of circle is the perimeter of a circle. It is the arc length of the circle.

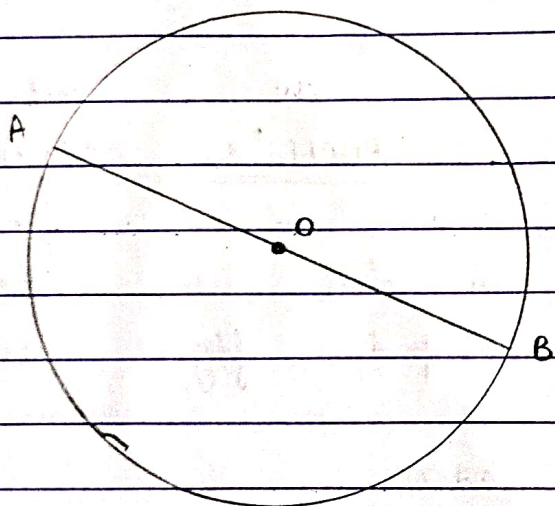
Yes Ma'am

Perimeter of rectangle
 $= 2(\text{length} \times \text{Breadth})$

TEACHER'S ACTIVITY

What are the examples of a circle?

The given figure of a circle with radius r and centre O .



Students, what is the diameter in the given figure?

Students, smile and laugh.
Response is not good.

STUDENT'S ACTIVITY

A wheel, A coin etc.

Ma'am, diameter is AB.

One student says

$$D = \frac{r}{2}$$

TEACHER'S ACTIVITY

Students, diameter is equal to double radius.

So, Students what is the definition of diameter of the circle?

STUDENT'S ACTIVITY

$$D = 2r$$

diameter = 2 x radius

A diameter of a circle is any straight line segment that passes through the center of the circle and whose end points lie on the circle.

OBSERVATION TABLE

S.No	Component	Rating Scale				
		Very Poor	Poor	Average	Good	Very Good
1.	Skill of Questioning.	1	2	3	4	5
2.	Skill of Introduction	1	2	3	4	5
3.	Skill of Reinforcement	1	2	3	4	5
4.	Skill of Stimulus Variation	1	2	3	4	5
5.	Skill of illustration with example.	1	2	3	4	5

LESSON No. ...5.....

Date..... Duration of the Period..... 5-6 minutes

Pupil teacher's Name Aditi... D... Pupil Teacher's Roll no.....

Class VIII Average Age of the pupils 13 Years...

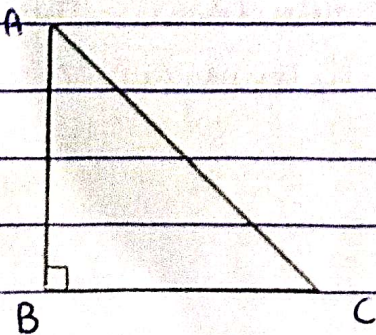
Subject Teaching of Mathematics Topic Area of Right angle triangle

SKILL OF → Skill of Explanation

TEACHER'S ACTIVITY

Student's, Can you tell me about the definition of triangle?

By showing a figure of right angle triangle.



which type of figure is this?

STUDENT'S ACTIVITY

A figure bounded by three line segment is called a triangle.

Right angle triangle

TEACHER'S ACTIVITY

How can you say that this figure is right angle triangle?

Now, we will find the area of right angle triangle.

Base = BC

Height = AB

90° angle is at B.

Area of Right angle triangle = $\frac{1}{2} \times B \times H$

$$= \frac{1}{2} \times BC \times AB$$

Example → If BC = 4cm and AB = 5cm then

Area of right angle triangle is

$$\frac{1}{2} \times 4 \times 5 = 10 \text{ cm}^2$$

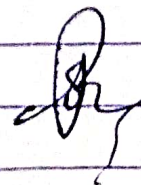
STUDENT'S ACTIVITY

Because in this figure one angle is of 90°, therefore it is called the right angle triangle.

Students are listening carefully.

OBSERVATION TABLE

S.No	Component	Rating Scale				
		Very Poor	Poor	Average	Good	Very Good
1.	Skill of Questioning	1	2	3	4	5
2.	Skill of Introduction	1	2	3	4	5
3.	Skill of Stimulus Variation	1	2	3	4	5
4.	Skill of reinforcement	1	2	3	4	5
5.	Skill of illustration with example	1	2	3	4	5





MEGA LESSONS

LESSON No.1.....

Date..... Duration of the Period..... 30-40 minutes

Pupil teacher's Name Aditi Deswal Pupil Teacher's Roll no.....

Class..... V..... Average Age of the pupils..... 10 years

Subject Teaching of Mathematics Topic..... Fraction

General Aim :-

- * To develop the interest of the students,
- * To develop the mathematics skill.
- * To develop the reasoning skill.
- * To develop the personality of the students.

Instructional Objective :-

The objectives of teaching mathematics may be classified as under

Knowledge :-

1. Students will be able to recognize about the fraction
2. Students will be able to recall about the fraction

Understanding :-

1. Students will be able to reason the practice of fraction.

2. They will be able to understand its types.

Specific Teaching Aids :-
Chart

Previous Knowledge Testing :-

Ques. What is numerator?

Ques. What is denominator?

Announcement of Topic :-

After finding students are unable to give an appropriate answer the pupil-teacher will announce the topic by saying, students today we are going to learn about "FRACTION".

Presentation :-

Teaching Point	Pupil - Teacher's Activity	Students Activity	C.B.W.
Define the fraction	Fraction means that a no. in which division the equal parts of a thing or a number	Students are listening	FRACTION
Types of fraction	Proper fraction Improper fraction Mixed fraction Like fraction		TYPES OF FRACTION
Define the proper fraction	Proper fraction is when the numerator is less than the denominator Example of Proper fraction $(\frac{2}{5}, \frac{1}{6}, \frac{3}{7})$	Students are writing in their notebook	PROPER FRACTION
Define the improper fraction	Improper fraction is that when the numerator is greater than the denominator	Students are listening carefully	IMPROPER FRACTION

Teaching Point

Pupil - Teacher's Activity

Student's Activity

C.B.W

Define the improper fraction

Improper fraction is that when the numerator is greater than the denominator.

Students are listening carefully

IMPROPER FRACTION

Example of improper fraction -

$$\left(\frac{3}{2}, \frac{5}{3}, \frac{7}{6} \right)$$

Define the mixed fraction.

Mixed fraction is that there is whole no. along with proper fraction.

Example of mixed fraction.

$$\left(2\frac{1}{4}, 5\frac{1}{6} \right)$$

MIXED FRACTION

Define the like fraction

Like fraction is that the denominator are equal its a group.

Example of like fraction

$$\left(\frac{1}{8}, \frac{7}{8}, \frac{3}{8} \right)$$

Students are listening carefully

LIKE FRACTION

Teaching Point	Pupil - Teacher's Activity	Student's Activity	C.B.W.
Define the unlike fraction	Unlike fraction is that the denominators are unequal. Example of unlike fraction $(\frac{1}{2}, \frac{2}{3}, \frac{3}{5})$	Students are writing in their notebook	UNLIKE FRACTION

Recapitulation Work →
Ques. $(\frac{2}{5}, \frac{3}{17}, \frac{4}{9})$ is a proper or improper fraction?

Ques. Solve $[17 - (\frac{51}{3} \times \frac{51}{7})]$

Ques. Convert the following improper fraction into mixed fraction.
(a) $\frac{37}{6}$ (b) $\frac{13}{2}$

Homework →

To revise and solve the question of exercise 1 of chapter fraction.

LESSON No. 2

Date..... Duration of the Period..... 35-40 minutes
 Pupil teacher's Name Aditi Deswal Pupil Teacher's Roll no.....
 Class VIII Average Age of the pupils 13 years
 Subject Teaching Of Mathematics Topic Algebra Formula

General Aims →

- To develop the interest of the students.
- To develop the personality of the students.
- To develop the mathematics skill.
- To develop the reasoning skill.

Instructional Objectives →

The objectives of teaching mathematics may be classified as under

Knowledge →

1. Students will be able to recognize about the formula.
2. Students will be able of recall the proof of formula.

Understanding →

1. Students will be able to give example of formula.
2. Students will be able to verify the proof of formula.

Specific Teaching Aids →
Chart

Previous Knowledge Teaching →

Ques. What is $(-x -)$ and $(+x +)$?

Ans. What is $(-x +)$ and $(+x -)$?

Announcement Of Topic →

After finding students are unable to give an appropriate answer the pupil teacher will announce the topic by saying, "students, today we are going to study about 'ALGEBRA'".

Presentation →

Teaching Point	Pupil - Teacher's Activity	Student's Activity	C.B.W.
Prove that $(a+b)(a-b)$ $= a^2 - b^2$	Taking LHS $(a+b)(a-b) = a(a-b) + b(a-b)$ $= a^2 - ab + ba - b^2$ $= a^2 - b^2$ $= R.H.S.$	Students are writing in their notebook	$a^2 - b^2 = (a+b)(a-b)$
Prove that $(a+b)^2 =$ $a^2 + b^2 + 2ab$	Taking LHS $(a+b)^2 = (a+b)(a+b)$ $= a(a+b) + b(a+b)$ $= a^2 + ab + ba + b^2$ $= a^2 + b^2 + 2ab$ $= R.H.S.$	Students are writing in their notebook	$(a+b)^2 = a^2 + b^2 + 2ab$
Prove that $(a-b)^2 =$ $a^2 + b^2 - 2ab$	Taking L.H.S. $(a-b)^2 = (a-b)(a-b)$ $= a(a-b) - b(a-b)$ $= a^2 - ab - ba + b^2$ $= a^2 + b^2 - 2ab$	Students are writing in their notebook	$(a-b)^2 = a^2 + b^2 - 2ab$
Prove that	Taking L.H.S. $(a+b)^3 = (a+b)(a+b)^2$	Students are	$(a+b)^3 = a^3 + b^3 + 3a^2b + 3ab^2$

Teaching Point

Pupil - Teacher's Activity

Student's Activity

C.B.W.

$$(a+b)^3 = a^3 + b^3 + 3a^2b + 3ab^2$$

$$\begin{aligned} &= a(a+b)^2 + b(a+b)^2 \\ &= a(a^2 + b^2 + 2ab) \\ &\quad + b(a^2 + b^2 + 2ab) \\ &= a^3 + ab^2 + 2a^2b \\ &\quad + ba^2 + b^3 + 2ab^2 \\ &= a^3 + b^3 + 3a^2b \\ &\quad + 3ab^2 \\ &= R.H.S. \end{aligned}$$

writing in their writing notebook

Prove that

$$(a-b)^3 = a^3 - b^3 - 3a^2b - 3ab^2$$

Taking LHS

$$\begin{aligned} (a-b)^3 &= (a+b)(a-b)^2 \\ &= (a-b)(a-b)^2 \\ &= a(a-b)^2 - b(a-b)^2 \\ &= a(a^2 + b^2 - 2ab) \\ &\quad - b(a^2 + b^2 - 2ab) \\ &= a^3 + 3ab^2 - 3a^2b - b^3 \end{aligned}$$

Students are writing in their notebook

$$(a-b)^3 = a^3 - b^3 - 3a^2b + 3b^2a$$

Recapitulation Work →

Ques. Solve : $\frac{(598 + 479)^2 - (598 - 479)^2}{598 \times 479} = ?$

Ques. Find $(105)^2$

Ques. If $(a+b+c) = 13$, $a^2 + b^2 + c^2 = 6$ then find $(ab + bc + ca) = ?$

Ques. Find $36x^2 - 49y^2$?

Ques. Solve $(5x - \frac{1}{5x})^2$?

Homework →

To revise the proof of formula and solve problem of exercise 1 of chapter algebra.

LESSON No. 3

Date..... Duration of the Period..... 35-40 minutes
 Pupil teacher's Name Aditi Deswal Pupil Teacher's Roll no.....
 Class VII Average Age of the pupils 12 years
 Subject Teaching of Mathematics Topic Surds

General Aims →

- To develop the interest of the students.
- To develop their intelligence, proved and disciplining their mind.
- To develop mathematical skill.

Instructional Objectives →

The objectives of teaching mathematics may be classified as under

Knowledge →

1. Students will be able to define the surds.
2. Students will be able to measure the surds.

Understanding →

1. Students will be able to explain the surds.

2. Students will be able to classify the surds.

Previous Knowledge Testing →
Ques. What is a rational no.?
Ques. What is an irrational no.?

Announcement of Topic →
After finding students are unable to give an appropriate answer. The pupil teacher will announce the topic by saying that we are going to study about "SURDS".

Presentation →

Teaching Point	Pupil - Teacher's Activity	Student Activity	C.B.W.
What is Surds?	$n\sqrt[n]{a}$ is called surds, the positive n^{th} root of 'a' is called Surds.	Students are listening carefully	SURDS
Law of Surds	'a' is Positive rational no. $n\sqrt[n]{a}$ is an irrational number. $(n\sqrt[n]{a})^n = a$ Example → $(3\sqrt[3]{5})^3 = 5$	Students are listening carefully	LAW OF SURDS
	Suppose $n\sqrt[n]{a}$ and $n\sqrt[n]{a}$ are two variables of the same $(n\sqrt[n]{a} \times n\sqrt[n]{a})^n = (n\sqrt[n]{a})^n$ $n\sqrt[n]{a} \cdot n\sqrt[n]{b} = n\sqrt[n]{ab}$ Example → $\sqrt{18} = \sqrt{9 \times 2} = 3\sqrt{2}$	Students are listening carefully	$(n\sqrt[n]{a})^n = a$
	If $n\sqrt[n]{a}$ and $n\sqrt[n]{b}$ are two radicals of same orders	Students are listening carefully	

Teaching Point

Pupil - Teacher's Activity

Student Activity

C. B. W.

$$\left(\frac{n\sqrt[n]{a}}{n\sqrt[n]{b}} \right)^m = \left(\frac{n\sqrt[n]{a}}{n\sqrt[n]{b}} \right)^m$$

$$= \frac{n\sqrt[n]{a}}{n\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$$

Students are listening carefully

Example $\rightarrow 3\sqrt[3]{2}$

If m, n are positive integers, true for a rational number 'a'.

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

Example $\rightarrow (\sqrt[4]{8})^4 = 2^4 = 16$

Students are listening carefully and writing in their notebook

State with reasons which of the following are not

(a) $\sqrt{36}$

(b) $\sqrt{50}$

(c) $\sqrt{98}$

(d) $\sqrt{112}$

(e) $\sqrt{100 \times \sqrt{2}}$

(f) $\sqrt{25} - \sqrt{9}$

Students are writing in their notebook

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

Recapitulation Work →

Ques. State which of the following are surds, and which are not.

(a) $\sqrt{8} \times \sqrt{6}$

(b) $\sqrt{8} \times 2\sqrt{6}$

(c) $16\sqrt{2} \times 9\sqrt{3}$

(d) $\sqrt{24} \times \sqrt{3}$

(e) $\sqrt{123} \times \sqrt{5}$

Ques. Express the following with a rational denominator?

$$\frac{2}{\sqrt{5}}, \frac{2}{2\sqrt{3}}, \frac{1}{\sqrt{2}}, \frac{\sqrt{2}}{\sqrt{5}}, \frac{2\sqrt{7}}{\sqrt{11}}, \frac{3\sqrt{5}}{3\sqrt{9}}$$

Homework →

To revise and solve problem of exercise surds.

LESSON No. ⁴

Date..... Duration of the Period... 35-40 minutes..

Pupil teacher's Name. Aditi Deswal Pupil Teacher's Roll no.....

Class IX Average Age of the pupils 14 years ..

Subject. Teaching of Mathematics. Topic..... Line.....

General Aim →

- To develop the interest of the students
- To develop the mathematical skill.
- To develop the personality of students

Instructional Objectives →

The objectives of teaching mathematics may be classified as no.

Knowledge →

- Students will be able to explain the line.
- Students will be able to test the line.

Application →

- Students will be able to define the line.
- Students will be able to measure the line.

Understanding →
Students will be able to classify
the line.

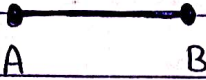
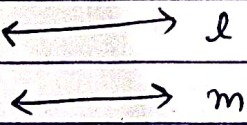
Previous Knowledge Testing →

Ques. What is scale?
Ques. What is straight line?

Announcement of Topic →

After finding students are unable to
give an appropriate answer. The
pupil-teacher will make an
announcement by saying students we
are going to study about
"LINE"



Teaching Point	Pupil - Teacher's Activity	Student's Activity	C.B.W.
What is a line?	A straight line may be represented by a straight thread or by the edge of a line, extended indefinitely in both direction. 	Students are listening carefully	LINE
What are parallel lines?	Two co-planar lines whose intersection is empty are said to be parallel lines  A line is parallel to line m.	Students are writing in their notebook	PARALLEL LINE
What are intersecting lines?	Two lines whose intersection is not empty are said to be intersecting line the common point of meeting is	Students are writing in their notebook	INTERSECTING LINE

Recapitulation Work →

Ques. How many least number of distinct points determine unique line?

Ques. In how many points two distinct line can intersect?

Ques. what are parallel line?

Ques. what are intersecting line?

Homework →

To revise and write on your fair notebook all the definition of

LESSON No. 5

Date..... Duration of the Period... 35-40 minutes
 Pupil teacher's Name... Aditi Deswal Pupil Teacher's Roll no.....
 Class... IV Average Age of the pupils... 9 Years
 Subject... Teaching of Mathematics Topic... Angle

General Aim →

- * To develop the personality of the students.
- * To develop the mathematics skill.
- * To develop the interest of the students.

Instructional Objectives →

The objectives of teaching mathematics may be classified as under

Knowledge →

- Students will be able to define the angle.
- Students will be able to measure the angle.

Application →

- Students will be able to solve

- the problem of angle.
students will be able to classify the angles.

Previous Knowledge Testing →

Ques. What is angle?

Ques. How angle is formed?

Announcement Of The Topic →

After finding students are unable to give an appropriate answer, the pupil-teacher will announce the topic by saying "Students we are going to learn about 'ANGLES'"

Teaching Point

Pupil - Teacher's Activity

Student's Activity

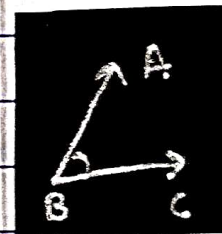
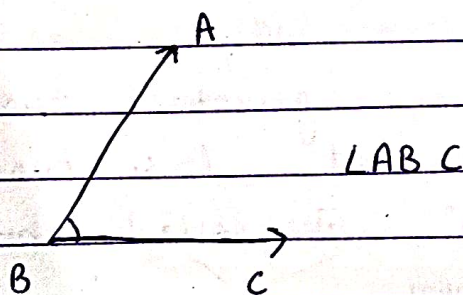
C.B.W.

What is an angle?

An angle is the figure formed by two rays called the sides of the angle, sharing a common end point called the vertex of the angle.

Students are writing in their notebook

ANGLE



What is a protractor?

A protractor is a measuring instrument for measuring angles.

Classification of Angles

- 1) Acute Angle
- 2) Right Angle
- 3) Obtuse Angle
- 4) Straight Angle
- 5) Reflex Angle
- 6) Complete Angle

Students are listening carefully

PROTR-
ACTOR

Teaching Point

Pupil - Teacher's Activity

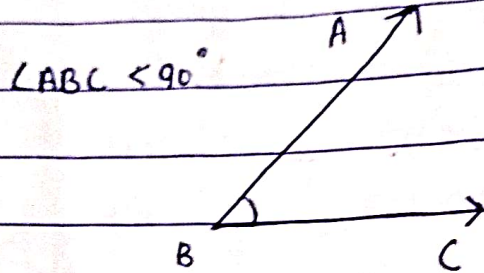
Student's Activity

C.B.

Acute Angle

Angles less than 90° but greater than 0° are acute angles

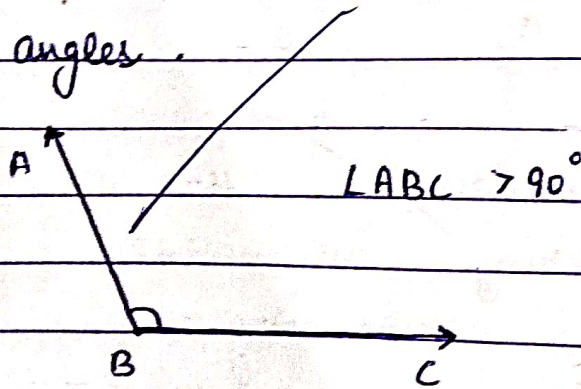
Students are listening carefully



Obtuse Angle

Angles greater than 90° but less than 180° are called obtuse angles.

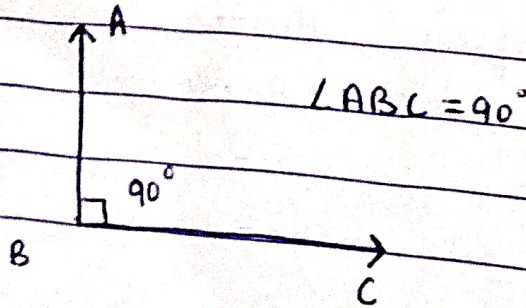
Students are writing in their notebook



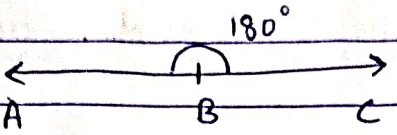
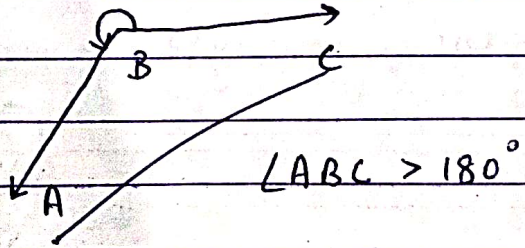
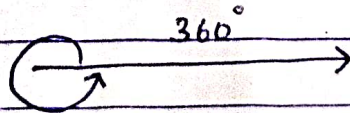
Right angle

An angle whose measure is 90° is called right angles.

Students are listening carefully



RIGHT ANGLE

Teaching Point	Pupil- Teacher's Activity	Student's Activity	C.B.W.
Straight Angle	An angle that measure 180° exactly.	Students are listening carefully	Straight Angle
			
	$\angle ABC = 180^\circ$		
Reflex Angle	An angle that measure greater than 180°	Students are writing in their notebook	Reflex Angle
			
Complete Angle	An angle that is exactly 360°	Students are writing in their notebook	Complete Angle
			

Recapitulation Work →

Ques. What is an angle?

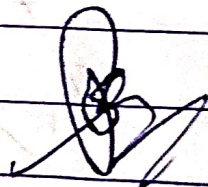
Ques. What is a right angle?

Ques. What is the shape and use of protractor?

Ques. What is the obtuse angle?

Home work →

To revise the definition of chapter angles and solve the examples of chapter angle.



DISCUSSION LESSON-I

LESSON No.1.....

Date..... Duration of the Period..... 35 - 40 minutes
 Pupil teacher's Name Aditi Deswal Pupil Teacher's Roll no.....
 Class VI Average Age of the pupils 11 years
 Subject Teaching of Mathematics Topic Inequalities in a triangle

General Aim →

- To develop the interest of the students.
- To develop the mathematical skill.
- To develop the reasoning skill.

Instructional Objective →

The object of teaching mathematics may be classified as under.

Knowledge →

1. Students will be able to know the inequalities in triangle.
2. Students will be able to define the inequalities of triangle.

Application →

1. Students will be able to explain the inequalities in triangle.

2. Students will be able to solve the problem of triangle.

General Aid →

Chalk, Chalk-board, duster, pointer

Previous Knowledge Testing →

Ques. What is side?

Ques. What is an angle?

Announcement of Topic →

After finding students are unable to give an appropriate answer the pupil-teacher will announce the topic by saying students today we are going to study about "INEQUALITIES IN A TRIANGLE".

Presentation →

Teaching Point	Pupil - Teacher's Activity	Students Activity	C.B.W.
Introduction	An introduction reflects two basic ideas, namely: (i) two qualities are not equal. (ii) One of the two qualities being comparatively greater The inequality symbols are $<$, $\leq$, $>$, $\geq$	Students are listening carefully	Intro-duction
Relation among sides and angles of a triangle	Some inequality relation among side and angles of triangle Side and angles of a triangle Take a $\triangle ABC$ with unequal sides say $AB = 4\text{cm}$, $BC = 5\text{cm}$	Students are listening carefully and writing in their notebook	

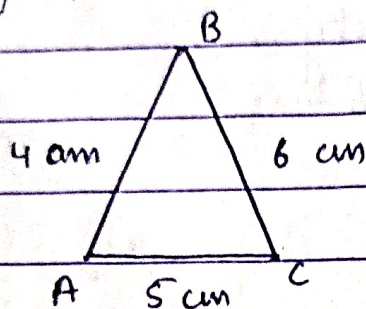
Teaching Point

Pupil - Teacher's Activity

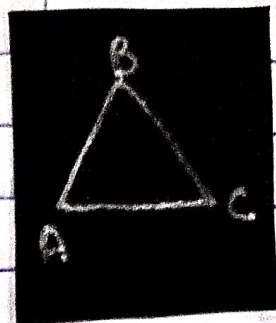
Student Activity

C.B.W.

and $AC = 6 \text{ cm}$.
Measure the three angles A, B and C with the help of properties.



Students are writing in their notebook



(i) $AC > AB$ and $\angle B > \angle C$
i.e. the longer side has greater angle opposite to it.

Students are writing in their notebook

$AC > AB$
 $\angle B > \angle C$

(ii) $AC < BC$ and $\angle B < \angle A$
i.e. the angle opposite the longer side is greater.

$AC < BC$
 $\angle B < \angle A$

(iii) $BC > AB$ and $\angle A > \angle C$ i.e. the angle opposite the

$BC > AB$
 $\angle A > \angle C$

Teaching
Point

Pupil - Teacher's Activity

Students
Activity

C.B.W.

longer side is
greater

Theorem 1

If two sides of
a triangle are
unequal, the longer
side has greater
angle opposite to it.

Students
are
writing
in
their
notebook

Given :- In $\triangle ABC$

$$AC > AB$$

To Prove :-

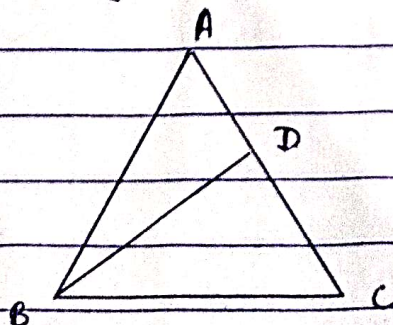
$$\angle ACB < \angle ABC$$

Construction :-

Mark point D on AC

such that $AB = AD$

and join BD



Teaching
Point

Pupil - Teacher
Activity

Students
Activity

C.O.B.O.W.

In $\triangle ABD$,

$$AB = AD$$

$$\therefore \angle ABD = \angle ADB$$

(angles opposite to
equal sides)

$\angle ADB$ is exterior
angle of $\triangle BCD$

$$\therefore \angle ADB > \angle ACB$$

(exterior angle theorem)

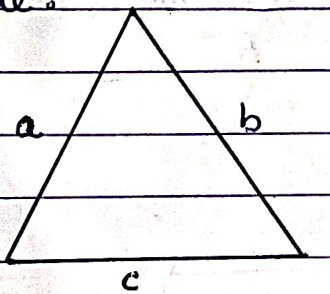
$$\angle ABD < \angle ACB$$

$$\text{But } \angle ABC > \angle ABD$$

$$\therefore \angle ABC > \angle ACB$$

Thus, the longer
side AC has
greater angle
 $\angle ABC$.

Hence Proved

Teaching Point	Pupil - Teacher's Activity	Students Activity	C.O.B.W.O.
Theorem 2	Triangle inequality theorem		
Triangle Inequality Theorem	The sum of the lengths of any two sides of a triangle is greater than the length of the third side.  $a + b > c$ $a + c > b$ $b + c > a$	Students are listening carefully	Triangle Inequality Theorem 
		Students are writing in their notebook	$a + b > c$ $a + c > b$ $b + c > a$
Theorem	In a triangle, the greater angle has longer side opposite to it.		

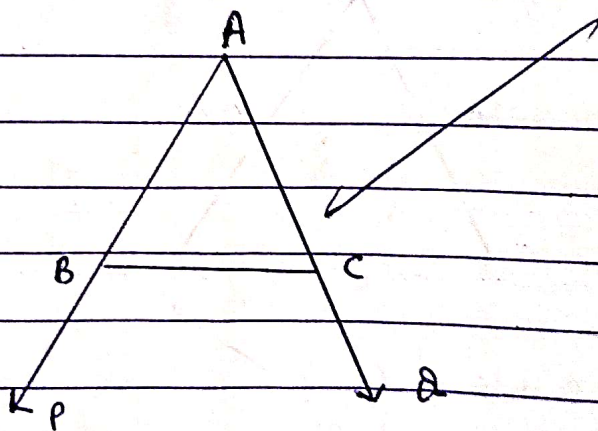
Recapitulation Work →

Ques. What is parallelogram?

Ques. What is the theorem?

Ques. What is triangle inequality theorem?

Ques. In figure, sides AB and AC of $\triangle ABC$ are extended to points P and Q respectively. Also, $\angle PBC < \angle QCB$. Show that $AC > AB$.



Homework →

To revise and write all three theorem in your notebook with proof.

**SCHOOL TEACHING
PRACTICE LESSONS**

LESSON No.1.....

Date..... Duration of the Period..... 35-40 minutes
 Pupil teacher's Name. Aditi Deswal Pupil Teacher's Roll no.....
 Class VIII Average Age of the pupils 13 years.
 Subject Teaching..... of Mathematics Topic..... Statistics.....

General Aims →

- To develop the interest of the students.
- To develop the mathematics skill.
- To develop reasoning skill.
- To develop the personality of the students.

Instructional Objectives →

The objective of teaching mathematics may be classified as under.

Knowledge →

- Students will be able to define the mean.
- Students will be able to understand mean.

Understanding →

1. Students will be able to explain the assumed mean method.
2. Students will be able to classify the mean.

Specific Teaching Aid →
Chalk, Chalk Board.

Previous Knowledge Testing →

Ques. - What is average?

Ques. - What is frequency?

Announcement of the Topic →

After finding students are unable to give an appropriate answer, the pupil-teacher will announce the topic by saying students we are going to study about "STATISTICS".

Presentation →

Teaching Point	Pupil - Teacher Activity	Student's Activity	C.B.W.
Statistics	Statistics deal with study of collection, presentation and analysis of numeric data.	Students are listening carefully	Statistics
What is mean?	Means means that that the sum of the value of all the observation is divided by the total number of observation.	Students are writing in their notebook.	Mean
	$\text{Mean} = \frac{\text{Sum of all observations}}{\text{Total No. of observations}}$		
Arithmetic Mean	Arithmetic mean of the values of $x_1, x_2, \dots, x_n$ of a variable x is denoted by $\bar{x}$.	Students are writing in notebook	Arithmetic Mean

Teaching Point

Pupil - Teacher's Activity

Students Activity

Co.B. W.

$$\bar{x} = \frac{x_1 + x_2 + \dots + x_n}{n}$$

$$= \sum_{i=1}^n \frac{x_i}{n}$$

$$\bar{x} = \frac{f_1 x_1 + f_2 x_2 + \dots + f_n x_n}{f_1 + f_2 + \dots + f_n}$$

$$\bar{x} = \frac{\sum_{i=1}^n f_i x_i}{\sum_{i=1}^n f_i}$$

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n f_i x_i$$

where

$$n = \sum_{i=1}^n f_i$$

Direct Method

$$\bar{x} = \frac{\sum_{i=1}^n f_i x_i}{\sum_{i=1}^n f_i}$$

Students

are writing in their notebook

DIRECT Method

Teaching
Point

Pupil - Teacher's Activity

Student's
Activity

C.B.W.

$$= \frac{\sum f_i x_i}{\sum f_i}$$

Assumed
Mean

Assumed mean is that
the number or lowest
number from the (x_i)

Students
are
writing
in
their
notebook

Assumed
MEAN

Assumed mean :-

$a, x_1, x_2, \dots, x_n$

What
is
deviation?

Deviation is equal
to the difference
between x_i and
 a

DEVIATION

- N

$$d_i = x_i - a$$

Mean of deviation

$$= \frac{\sum f_i d_i}{\sum f_i}$$

Recapitulation Work →

Ques. Find the mean number of wickets by all method?

No. of wickets	20-60	60-100	110-140	140-180
No. of Balls	7	5	1.6	12

Ques. What is formula of mean?

Ques. Given the pocket allowance is Rs-18.
Find the missing frequency?

Daily Pockets	11-13	13-15	15-17	17-19	19-21
No. of children	7	6	9	13	4

Homework →

To revise the question of exercise 1 of chapter statistics.

LESSON No.2.....

Date..... Duration of the Period....35-40 minutes

Pupil teacher's Name..Aditi...Deswal Pupil Teacher's Roll no.....

ClassVI..... Average Age of the pupils11 years....

Subject..Teaching...of Mathematics Topic....Polynomials.....

General Aim →

- To develop the interest of the students.
- To develop the mathematical skills.
- To develop the reasoning.

Instructional Objective →

The objectives of teaching mathematics may be classified as under.

Knowledge →

Students will be able to define the polynomials.

Students will be able to write the polynomials.

Understanding →

Students will be able to explain the polynomials.

Previous Knowledge Testing →
Ques. What is the formula of $(a+b)^2$?
Ques. What is the formula of $(a-b)^2$?

Specific Teaching Aids →
Chalk, Chalk Board

Announcement of Topic →
Students are unable to give an appropriate answer, the pupil-teacher will announce the topic by saying today we will study about the factorisation of polynomials

"FACTORIZATION OF POLYNOMIALS"

Presentation →

Teaching Point	Pupil - Teacher's Activity	Student's Activity	C.B.W.
Polynomial in one variable	In algebraic expression where one variable has power which can be expressed as whole number. For example, (i) $4x^3 + 3x + 7$ (ii) $t^2 + 3t + 2$	Students are listening carefully.	Polynomial
What is polynomial	A polynomial is an algebraic expression with two or more terms. For example, (i) $3x^2$ (ii) $3x^2 - 4x$ (iii) $3x^2 - 4x + 5$	Students are writing in their notebook	$ax^2 + by^2 + zx + c$
Common factor from two or more terms	Polynomial means a algebraic (i) $7mn - 21m^2n$ (ii) $46x^2 + 2xy + 10y^2$ (iii) $ab(x^2 + y^2) - xy(a^2 + b^2)$		

Teaching Point

Pupil - Teacher's Activity

Students Activity

CoB.W.

Factoring perfect square polynomial

$$(a+b)^2 = a^2 + b^2 + 2ab$$

$$(a-b)^2 = a^2 + b^2 - 2ab$$

For example,

$$1) 4x^2 + 4xy + y^2$$

$$2) 9x^2 - 6xy + y^2$$

$$3) x^2 - 2\sqrt{3}x + 3$$

$$4) 1 - 6x + 9x^2$$

Students are listening carefully

Factoring Perfect Square Polynomial

Factoring two different or two square

$$(a+b)(a-b) = a^2 - b^2$$

For example,

$$1) x^2 - 4y^2$$

$$2) 16x^2 - x^2$$

$$3) 9x^2 - 16y^2$$

$$4) 128ax^2 - 242ay^2$$

$$(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$$

Students are writing in their notebook

Factoring 2 different polynomial

Teaching Point	Pupil - Teacher's Activity	Students Activity	C. B. W.
Quadratic Polynomial	A quadratic polynomial is a polynomial of degree two. Example, $3x^2 + 2x + 4$	Students are listening carefully	Quadratic Polynomial
Cubic polynomial	A cubic polynomial is a polynomial of degree three. Example, 1) $x^3 - 6x^2 + 11x - 6$ 2) $27y^3 - 1$	Students are writing in their notebook	Cubic Polynomial
Zeros of the polynomial	A linear polynomial has one zero. A quadratic polynomial has two zeros	Students are writing in their notebook	Zeros of the polynomial

Recapitulation Work →

Ques. If $(x+a)$ is a factor of $2x^2 + 2ax + 5x + b$
Find a .

Ques. Write the zeros of the polynomial
 $x^2 - x - 6$.

Ques. Solve $3x^2 + 6x + 4x + 8$

Ques. Solve $6x^2 + 3x^2 + 8x + 4$

Ques. Solve the quadratic equation by splitting
the middle —

1) $x^2 - 55x + 750 = 0$

2) $x^2 - 45x + 324 = 0$

3) $2x^2 - 5x + 3 = 0$

4) $3x^2 + 11x + 1 = 0$

Homework →

To solve the questions of exercise 1
of chapter polynomials.

LESSON No. ...3.....

Date..... Duration of the Period.....35-40 minutes

Pupil teacher's Name Aditi Deswal Pupil Teacher's Roll no.....

ClassII..... Average Age of the pupils10 years..

Subject...Teaching...in...Mathematics Topic.....Quadrilaterals.....

General Aim →

- To develop the interest of the students
- To develop the mathematical skill.
- To develop the reasoning.

Instructional Objective →

The objectives of teaching mathematics may be classified as under.

Knowledge →

1. Students will be able to define quadrilaterals.
2. Students will be able to draw the quadrilaterals.

Understanding →

Students will be able to understand quadrilaterals.

Specific Teaching Aids →
Chalk, Chalk - Board, Duster

Previous Knowledge Testing →

Ques. What is rectangle?

Ques. What is quadrilateral?

Announcement of the Topic →
Students are unable to give an appropriate answer, the pupil - teacher will announce the topic by saying that today we will study about quadrilaterals.

Teaching Point	Pupil - Teacher's Activity	Student Activity	C.B.W.
Quadrilateral	A plane figure bounded by four sides of line segment AB, BC, CD and BA is quadrilateral.	Students listening carefully	Quadrilateral
Types of Quadrilateral	1) Rectangle 2) Square 3) Parallelogram 4) Trapezium 5) Rhombus 6) Kite		Types
Area of Quadrilateral	Area of quadrilateral $= \frac{1}{2} \times \text{diagonal} \times (\text{Sum of } \perp \text{ height})$	Students are writing in their notebook	Area of of Quad.
Perimeter	Sum of Sides of the quadrilateral.		Perimeter
Rectangle	A rectangle is a quadrilateral with four right angles. Also opposite sides are parallel.	Students are writing in their	Rectangle

Teaching Point

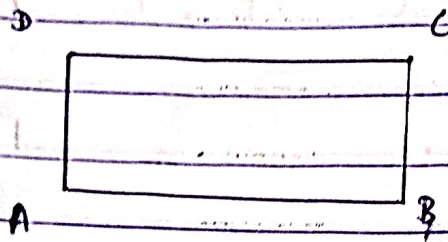
Pupil - Teacher's Activity

Students Activity

C. B. W. n

and of equal length

notebook



Square

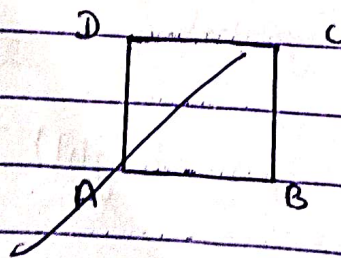
A square is a quadrilateral with their four right angles also all the sides are same.

Students

are writing in

their notebook

SQUARE



Parallelogram

A flat shape with four straight sides.

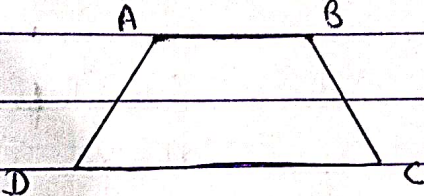
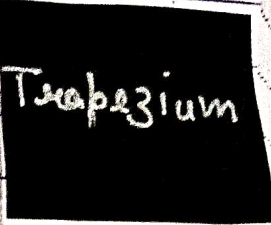
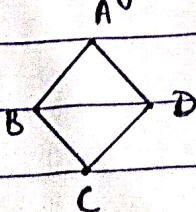
The opposite sides are parallel of and equal to each other.

Students

are writing in

their notebook

Paralle-
-logram

Teaching Point	Pupil - Teacher's Activity	Student's Activity	Co Bole
Trapezium	A flat shape with four straight sides, one pair of opposite sides being parallel and the other pair not parallel. 	Students are writing in their notebook	
Kite	A Kite is a quadrilateral whose four sides can be grouped into two pairs of equal length. 	Students are writing in their notebook	

Recapitulation work →

Ques. Find all the angles of a parallelogram if one angle is 80° ?

Ques. Is it possible to draw a quadrilateral whose all angles are obtuse angles?

Ques. Calculate all the angles of a quadrilateral if they are in the ratio $2 : 5 : 4 : 1$?

Ques. Prove that the angle bisector of a parallelogram form a rectangle?

Homework →

To learn definitions and write all the

LESSON No.4.....

Date.....
 Pupil teacher's Name. Aditi Deswal Duration of the Period.....35-40 minutes
 ClassVI Pupil Teacher's Roll no.....
 Subject.....Teaching of Mathematics Topic.....Probability
 Average Age of the pupils11 years

General Aim →

- To develop the interest of the students.
- To develop the reasoning skill.

Instructional Objective →

The objective of teaching mathematics may be classified as under

Knowledge →

1. Students will be able to define probability.
2. Students will be able to classify the probability.

Application :-

1. Students will be able to solve the problems of probability.

Specific Teaching Aids →
Chalk , Chalk - Board

Previous Knowledge Testing →

Ques. What is card? How many cards
in a deck?

Ques. How many faces a coin have?

Ques. What is a dice?

Announcement Of the Topic →
After finding students are
unable to give an appropriate
answer the pupil-teacher will
announce the topic that today
we are going to study
about the topic "PROBABILITY".

Teaching Point	Pupil - Teacher's Activity	Student's Activity	C.O.B.W.
What is Probability?	Probability is the branch of mathematics concerning numerical descriptions of how likely an event is to occur or how likely it is that a proposition is true.	Students are listening carefully	Probability
Formula of Probability	Probability of events to happen $P(E) = \frac{\text{No. of favourable outcomes}}{\text{Total No. of outcomes}}$	Students are writing in their notebook	$P(E) = \frac{\text{Fav. Out.}}{\text{Total Out.}}$
Types of Probability	There are three major types of probability	Types	
	1) Theoretical Probability 2) Experimental Probability 3) Axiomatic Probability		

Teaching Point

Pupil - Teacher's Activity

Student's Activity

C.O.B.W.

Probability of an event

$$P(E) + P(E') = 1$$

This means that the total of all the probabilities in any random test is equal to 1.

Students are writing in their notebook

$$P(E) + P(E') = 1$$

Examples of Probability

- 1) There is a 2% chance of rain tomorrow.
- 2) When fighting, there is 50% probability that one will win.
- 3.) In my closet are 5 pair of shoes, 4 of which are black. The chances of picking of black pair of shoes are 4 out of 5.

Students are listening carefully

Examples

Teaching Point	Pupil - Teacher's Activity	Students Activity	C.O.B.O.
Objective in Probability	* 0 indicates impossibility of event * 1 indicates the certainty	students are writing in their notebook	Objectives in Probability

Recapitulation work →

Ques. Sanita and Swati are friends. What is the probability that both will have different birth date?

Ques. A coin is thrown 3 times. What is the probability that atleast one head is obtained.

Homework →

To revise the formula and solve the problem of chapter probability.



LESSON No. ...5.....

Date..... Duration of the Period...35-40...minutes
 Pupil teacher's Name. Aditi Deswal Pupil Teacher's Roll no.....
 ClassVIII..... Average Age of the pupils13 years...
 Subject...Teaching...in...Mathematics Topic...Profit...and...Loss.....

General Aim →

- To develop the interest of the students
- To develop the mathematical skill.

Instructional Objective →

The objective of teaching mathematics may be classified as under

Knowledge →

1. student will be able to define the profit and loss.
2. student will be able to know about profit and loss.

Application →

- Student will be able to explain about selling Price (SP) and cost Price (CP)

Specific Teaching Aids →
Chalk, chalkboard.

Ques. Previous Knowledge Testing →
Hindi meaning of profit and purchase?

Ques. What is the difference between SP and CP?

Announcement of Topic →
After finding students are unable to give an appropriate answer, the pupil - teacher will announce the topic by saying students today we are going to study about topic "PROFIT AND LOSS".

Teaching Point	Pupil - Teacher Activity	Student Activity	Co. B. W. o.
What is cost Price?	The price at which an article is purchased is called cost price.	Students are listening carefully	Cost Price
What is selling Price?	The price at which an article is sold is called selling price.		Selling Price
	$CP \rightarrow$ cost Price $SP \rightarrow$ selling Price		
What is Profit and gain?	If the selling price of an article is more than their profit. $Profit = SP - CP$ If $SP > CP$	Students are listening carefully	Profit \$ Gain
What is loss?	If the selling price of an article is less than their profit.	Students are writing in	Loss

Teaching
Point

Pupil - Teacher's
Activity

Students
Activity

C. Balu

$$\text{Loss} = \text{CP} - \text{SP}$$

If $\text{SP} < \text{CP}$

Profit and Loss are
expressed as

$$\text{Profit \%} = \frac{\text{Profit} \times 100}{\text{CP}}$$

$$\text{Loss \%} = \frac{\text{Loss} \times 100}{\text{CP}}$$

SP and CP with
Profit

$$\text{SP} = \left(\frac{100 + \text{Profit \%}}{100} \right) \text{CP}$$

SP and CP with Loss

Students

are

writing
in

their

notebook

Teaching Point

Pupil - Teaching Students

Students Activity

C.B.W.

$$SP = \left(\frac{100 - \text{Loss \%}}{100} \right) CP$$

$$SP = \frac{(100 - Lt)}{100} \times CP$$

Examples of Profit and Loss

1.) If a shopkeeper bring a cloth for Rs 100 and sells it for Rs 120 then he has made a profit of Rs 20.

Students are writing in their notebook

2.) A bat is bought for Rs 75 and sold at a profit of its SP.

Recapitulation work →

Ques. Gurdeep loss 20% by selling a bicycle for Rs. 1536. What % shall the gain by selling it for Rs. 2040?

Ques. By selling a chair for Rs. 572. A man gains 30% the CP of the chair?

Homework →

To learn and revise all the formulas and do examples.

LESSON No.6.....

Date..... Duration of the Period.....35-40 minutes

Pupil teacher's Name Aditi Deswal Pupil Teacher's Roll no.....

ClassVI..... Average Age of the pupils11 years...

Subject Teaching.....of Mathematics Topic.....Simple Interest.....

General Aim →

- To develop the personality of the students.
- To develop the mathematical skills.

Instructional Objective →

The objective of mathematics may be classified as under →

Knowledge →

1. Students will be able to define the principle of interest.

Application →

1. Students will be able to explain about simple interest.

Specific Teaching Aids →
Chalk, chalk-board

Previous Knowledge Testing →

Ques. What is borrow?

Ques. What is sent?

Announcement of Topic →
After finding students are unable
to give an appropriate answer
the pupil-teacher will announce
the topic by saying well
we will study about
" SIMPLE INTEREST "

Teaching Point	Pupil - Teacher's Activity	Student's Activity	C. B. W.
What is Principal?	The money borrowed or is called Principal amount.	Students are listening carefully	Principal
	Principal amount on a loan is the amount borrowed.		
What is interest	Interest is a fee paid for borrowing money or other assets.	Students are writing in their notebook	Interest
	$I = \frac{P \times R \times T}{100}$		
	I = Interest P = Principal R = Rate T = Time		

C.B.W.

Teaching Point

Pupil - Teacher's Activity

Student Activity

Wh: is simple Interest?

Simple Interest is determined by multiplying the daily interest rate by the number of days that elapse between payments

Students are writing in their notebook

Simple Interest

$$S.I. = \frac{P \times R \times T}{100}$$

P = Principal

R = Rate

I = Interest

Amount

The total money paid back after the given time is called the amount

Amount

Teaching Point	Pupil - Teacher's Activity	Student Activity	C.B.W.
Time Period	Time for which money is borrowed is called the time period.	Students are writing in their notebook	Time Period
Some examples of simple interest	1.) Find S.I. on Rs 5600 at 6% P.a. for 9 months 2.) Find S.I. on Rs. 1.6250 at 8% P.a. for 73 days	Students are writing in their notebook	Example

Recapitulation work →

Ques. At what rate percent per annum will a sum of money available in 8 years?

Ques. How much simple interest will Rs 2000 earn in 18 months at 6% P.a?

Homework →

To solve the questions of exercise 1 of chapter ~~simple~~ Interest

LESSON No.7.....

Date..... Duration of the Period...35-40 minutes...
 Pupil teacher's Name...Aditi...Deswal Pupil Teacher's Roll no.....
 ClassV..... Average Age of the pupils10 years.....
 Subject...Teaching...Of...Mathematics Topic.....Area.....

General Aim →

- To develop the interest of the students
- To develop the future of the students.

Instructional Objective →

The objectives of teaching mathematics may be classified as under.

Knowledge →

Students will be able to define the area of square and rectangle.

Understanding →

Students will be able to explain the area.

Specific Teaching Aids →
Chalk, Chalk Board.

Previous Knowledge Testing →

Ques. How area is formed?

Ques. What is a closed figure?

Announcement of Topic →
After finding students are unable to give answers the pupil-teacher will announce the topic by saying that today we are going to study about the topic "AREA".

Teaching Point

Pupil - Teacher's Activity

Students Activity

Co.B.o.W.

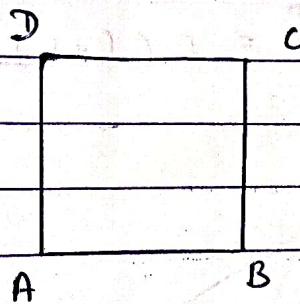
What is an area?

The area can be defined as the space occupied by a flat shape or the surface of an object

Students are listening carefully

Area

Area of Square



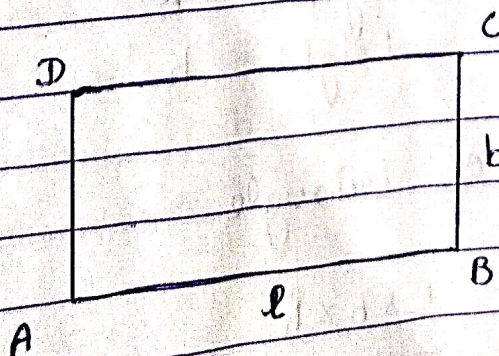
Students are writing in their notebook

Area of Square

ABCD is a square where l is the length of each side.

Area of Rectangle

Area of rectangle = $l \times b$



Area of Rectangle

Teaching Point

Pupil - Teacher's Activity

Student's Activity

C.B.W.

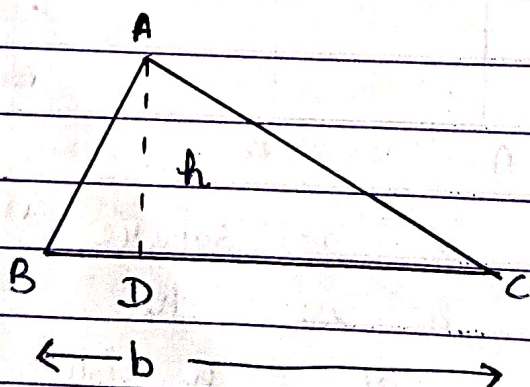
ABCD is a rectangle having length l and breadth b .

Students are listening carefully

Area of rectangle = $l \times b$

Perimeter of the rectangle = $2(l+b)$

Area of triangle



Students are writing in their notebook

Area of triangle

ABC is a triangle having base length b and height h .

Area of triangle

$$= \frac{1}{2} \times b \times h$$

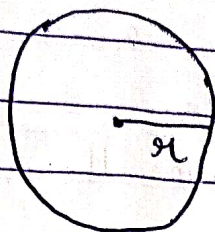
Teaching Point

Pupil - Teacher's Activity

Students Activity

C.O.B.W.

Area of circle



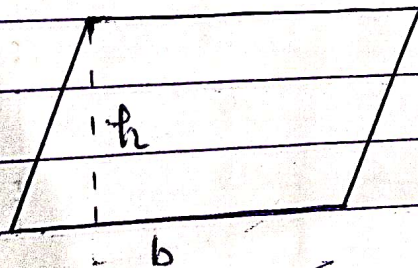
r is the radius of circle.

$$\text{Area of circle} = \pi r^2$$

Students are listening carefully

Area of circle

Area of parallelogram



$$\text{Area of parallelogram} = b \times h$$

where h is perpendicular height and b is the base

Students are writing in their notebook

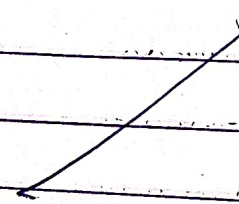
Area of 11 gm

Recapitulation work →

Ques. The perimeter of a rectangle is 60 cm. If its length is twice its breadth then its area is ?

Homework →

Learn and write all the formulas of the area.



LESSON No. 8

Date.....

Pupil teacher's Name.. Aditi Deswal

Duration of the Period..... 35-40 minutes

Class VI

Pupil Teacher's Roll no.....

Subject... Teaching Of Mathematics

Average Age of the pupils 11 years

Topic..... Compound Interest

General Aim →

- To develop the interest of students
- To develop mathematical skill

Instructional Objective →

The objective of teaching mathematics may be classified under

Application →

1. Students will be able to explain the compound interest.
2. Students will be able to solve the problems.

Previous Knowledge Testing →

Ques. what is simple interest?

Ques. what is principal?

Specific Teaching Aid →
Chalk, chalk - Board

Announcement of Topic →
After finding students are unable
to give an appropriate answer
the pupil teacher will announce
the topic by saying about
compound interest.

Teaching Point

Pupil - teacher Activity

Student Activity

Co.B.W.

What is amount?

The sum of the principal and the interest called amount.

Students are listening carefully

Amount

$$\text{Amount} = P + I$$

What is interest?

Interest is a fee paid for borrowing money or other assets.

Interest

$$I = \frac{P \times R \times T}{100}$$

What is compound interest?

~~Compound interest~~ is the addition of interest to principal sum of a loan i.e. interest on interest.

Students are writing in their notebook

Compound Interest

Formula of compound Interest

According to amount

$$A = P + I$$

Students are listening carefully

$$A = P + I$$

Teaching
Point ✓

Pupil - Teachers
Activity

Student
Activity

C.B.W.

Amount after Ist
period,

$$A = P + \frac{P \times R \times T}{100}$$

$$A = P \left(1 + \frac{R \times T}{100} \right)$$

Amount for IInd
period,

$$A = P \left(1 + \frac{R}{100} \right) + P \left(1 + \frac{R}{100} \right)$$

$$A = P \left(1 + \frac{R}{100} \right)^2$$

So,

Amount for IIIrd
Period

$$A = P \left(1 + \frac{R}{100} \right)^3$$

Students

are
writing
in ✓

their
notebook

$$A = P \left(1 + \frac{R}{100} \right)^t$$

Teaching Point	Pupil - Teacher Activity	Student Activity	C.O.B.W.O
Compound Interest	When interest is compounded annually, $A = P \left(1 + \frac{R}{100} \right)^t$	Students are listening carefully	
	2.) When interest is half yearly, $A = P \left(1 + \frac{R/2}{100} \right)^{2t}$		$I = \frac{R \times P \times T}{100}$
	3.) When interest is quarterly, $A = P \left(1 + \frac{R/4}{100} \right)^{4t}$		
Examples of Compound Interest	Find C.I. on Rs 6250 at 8% P.a. for 2 years	Students are writing in their notebook	

Recapitulation Work →

Ques. Find the C.I. on Rs. 3500 for 1 year at 20% p.a. when the interest is compounded.

- (i) Annually
- (ii) Semi - annually
- (iii) Quarterly

Homework →

To revise all the formulas of compound interest.

LESSON No. 9

Date.....
 Pupil teacher's Name Aditi Deswal Duration of the Period 35-40 minutes
 Class VIII Pupil Teacher's Roll no.....
 Subject Trigonometry Average Age of the pupils 13 years
 Topic Trigonometry

General Aim →

- To develop the interest of the students.
- To develop mathematical skill.

Instructional Objective →

The objectives of teaching mathematics may be classified as under.

Knowledge →

Students will be able to define the trigonometry.

Understanding →

Students will be able to see relationship between trigonometric functions.

Specific Teaching Aid →
Chalk, chalk - Board

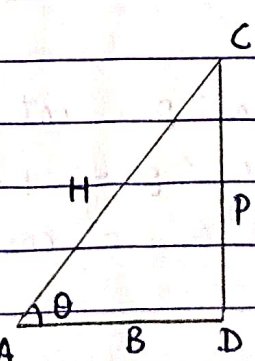
Previous Knowledge Testing →

Ques. What is angle?

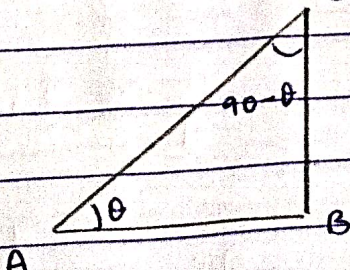
Ques. What is measurement?

Announcement of Topic →
After finding students are unable
to give an appropriate
answer students - teacher will
announce the topic by saying
that today we are going
to study about trigonometry.

Presentation →

Teaching Point	Pupil - Teacher Activity	Students Activity	C.O.B.W.O
Trigonometry	Trigonometry is that branch of mathematical in which we study about trigonometry function and their relation	Students are listening carefully	Trigno- -metry
Trigonometry Functions	$\sin \theta$, $\cos \theta$, $\tan \theta$, $\sec \theta$, $\cot \theta$, $\operatorname{cosec} \theta$ are called trigonometry functions		$\sin \theta$, $\cos \theta$, $\tan \theta$, $\cot \theta$ etc.
Trigno- -metry Ratio	$\sin \theta = \frac{P}{H}$ $\cos \theta = \frac{B}{H}$ $\tan \theta = \frac{P}{B}$ $\operatorname{cosec} \theta = \frac{H}{P}$, $\sec \theta = \frac{H}{B}$ $\cot \theta = \frac{B}{P}$	 Students are writing in their notebook	$\sin \theta = \frac{P}{H}$

Teaching Point	Pupil - Teachers Activity	Student Activity	C.B.W.
Relationship between Trigno-metric Ratio	$\operatorname{cosec} \theta = \frac{1}{\sin \theta}$ $\sec \theta = \frac{1}{\cos \theta}, \tan \theta = \frac{\sin \theta}{\cos \theta}$ $\cot \theta = \frac{1}{\tan \theta}, \cot \theta = \frac{\cos \theta}{\sin \theta}$	Students understand and learn these identities	$\cos \theta = \frac{B}{H}$
Identities in Trigno-metry	1) $\sin^2 \theta + \cos^2 \theta = 1$ $\Rightarrow \sin^2 \theta = 1 - \cos^2 \theta$ 2.) $\sec^2 \theta - \tan^2 \theta = 1$ $\sec^2 \theta = 1 + \tan^2 \theta$ $\tan^2 \theta = \sec^2 \theta - 1$ 3.) $\operatorname{cosec}^2 \theta - \cot^2 \theta = 1$ $\operatorname{cosec}^2 \theta = 1 + \cot^2 \theta$ $\cot^2 \theta = \operatorname{cosec}^2 \theta - 1$	Students note down all the identities	$\tan \theta = \frac{P}{B}$
Trigno-metric Ratio of	In right angled $\triangle ABC$ if $0 \leq \theta \leq 90^\circ$ then		$\operatorname{cosec} \theta = \frac{1}{\sin \theta}$

Teaching Point	Pupil - Teacher Activity	Students Activity	Cobol
complementary angles.	1) $\sin \theta (90 - \theta) = \frac{AB}{AC}$ $= \cos \theta$	Students will note down in their notebook	
	2) $\cos (90 - \theta) = \frac{BC}{AC}$ $= \sin \theta$		$\sin(90-\theta) = \cos \theta$
	3) $\tan (90 - \theta) = \frac{AB}{BC}$ $= \cot \theta$		
	4) $\cot (90 - \theta) = \frac{AC}{AB}$ $= \tan \theta$		$\cot(90-\theta) = \tan \theta$
	5) $\operatorname{cosec} (90 - \theta) = \frac{AC}{AB}$ $= \sec \theta$		
	6) $\sec (90 - \theta) = \frac{AC}{BC}$ $= \operatorname{cosec} \theta$		
			

Recapitulation Work →

Ques. What is the relationship between $\cos \theta$ and $\sec \theta$?

Ques. What are the identities in trigonometry?

Ques. Given $\sin A = \frac{12}{27}$, Find $\cos A$ and $\tan A$?

Ques. What are trigonometric ratios?

Homework →

Learn and write all these trigonometric rules in notebook.



LESSON No. 10

Date.....
 Pupil teacher's Name. Aditi Deswal
 Class TX
 Subject Teaching of Mathematics
 Duration of the Period 35-40 minutes
 Pupil Teacher's Roll no.....
 Average Age of the pupils 14 years
 Topic Triangle

General Aim →

- To develop the interest of the students
- To develop the mathematical skill.

Instructional Objectives →

The objectives of teaching mathematics may be classified as under

Knowledge →

Students will be able to recall and recognize triangle.

Application →

Students will be able to apply and develop a good speed and neatness in figure.

Specific Teaching Aids →
Chalk, chalk - Board

Previous Knowledge Testing →

Ques. what is triangle?

Ques. How many types of triangles?

Ques. what is the sign of triangle?

Announcement of the Topic →
After finding students are
unable to give an appropriate
answer the pupil-teacher
will announce the topic by
saying that today we will
study about "TRIANGLE".

Presentation →

Teaching Point

Pupil - Teacher's Activity

Student's Activity

C.O.B.W.O

Triangle

A figure bounded by three line segment is called a triangle.

Students are listening

Triangle

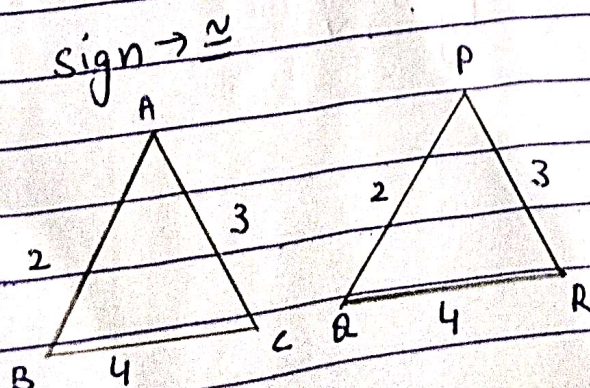
Sides of a triangle are called line segments and point of intersection are called vertices.

Congruence of triangles

Two triangles are said to be congruence if they have same angles and sides.

Students are writing in their notebook

Congruence of triangle



Teaching Point

Pupil - Teacher Activity

Student Activity

C.B.W.

In $\triangle ABC$ and $\triangle PQR$

$$AB = PQ$$

$$AC = PR$$

$$BC = QR$$

$$\triangle ABC \cong \triangle PQR$$

Students are listening carefully

Similar Triangles

Two triangles are said to be similar if they have same shape only (not necessarily) same size

Similar triangles

$\therefore$ we can say that two congruence triangle are similar but reverse is not true

Students are writing in their notebook

Similar triangles are denoted by $\sim$

Teaching Point	Pupil - Teacher Activity	Student Activity	C. B. W.
Condition of congruence of triangles	1) SSS (Side - Side - Side)	Students are writing in their notebook	Condition of Congruence
	2) SAS (Side - Angle - Side)		
	3) ASA (Angle Side Angle)		
	4) AAS (Angle Angle Side)		
	5) RHS (Right angle hypotenuse side)		
Condition of similarity	1) Their corresponding sides are in same ratio.		Condition of Similarity
	2) Their corresponding angles are equal		

Recapitulation Work →

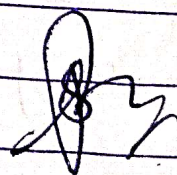
Ques. What is the sum of angles of a triangle?

Ques. What are similar triangle?

Ques. What are the conditions for the congruence of two triangles?

Homework →

Learn class work and write the condition for triangle to similarity and congruence.



LESSON No. 11

Date..... Duration of the Period..... 35-40 minutes
 Pupil teacher's Name.. Aditi Deswal Pupil Teacher's Roll no.....
 Class VIII Average Age of the pupils 13 years..
 Subject.. Teaching.. in.. Mathematics Topic..... Ratio..... And..... Proportion

General Aim →

To develop the interest of the students.
 To develop the mathematical skills.

Instructional Objectives →

The objectives of teaching of mathematics may be classified as under

Knowledge →

Students will be able to define the term of ratio and proportion.

Students will be able to know about the relation ratio and proportion.

Application →

Students will be able to apply
knowledge of ratio and proportion
in day to day life.

Specific Teaching Aid →

Chalk, chalk - Board, duster

Previous Knowledge Testing →

Ques. What does this sign (:) indicates?

Ques. What do you mean by proportion?

Announcement of the topic →

After finding students are unable to
give answer the pupil - teacher
will announce the topic
"RATIO AND PROPORTION".

Teaching Point

Pupil - Teacher Activity

Student's Activity

C.B.W.

What is Ratio?

The relation between two numbers which shows how much bigger one quantity is than another.

Students are listening carefully

Ratio

Ratio represent as

$$p : q$$

Types of Ratio

Types of ratio

Students are

writing in their notebook

Types of Ratio

1) A ratio $a : b$ is said to be greater inequality if $a > b$

2.) A Ratio $a : b$ is said to be less inequality if $a < b$

3.) Reciprocal ratio b/a is the inverse of a/b

Teaching Point	Pupil - Teacher Activity	Students Activity	C.B.W.
Composition of Ratio	1) Compound Ratio Ratio involving $3:4$, $8:9$, $2:3$ $\frac{3}{4} \times \frac{8}{9} \times \frac{2}{3} = 4:9$ 2) Duplicate Ratio $a^2 : b^2$ is the duplicate ratio. 3) Triplicate Ratio $a^3 : b^3$ is the triplicate ratio. 4) Sub-duplicate Ratio $\sqrt{a} : \sqrt{b}$	Students are writing in their notebook	Composition of Ratio
What is proportion	Proportion is a statement of equality between two ratios such as $a:b = c:d$	Students are writing in their	Proportion

Teaching Point	Pupil - Teacher Activity	Student Activity	Co B. W. o
	Thus, four quantities are related as $\frac{a}{b} = \frac{c}{d}$	notebook	
	First and fourth terms are called extremes where as second and third terms are called means		$\frac{a+b}{b} = c+d/d$
Componendo	$a:b = c:d$, then $\frac{a+b}{b} = \frac{c+d}{d}$	students are writing in their notebook	$\frac{a-b}{b} = c-d/d$
Dividendo	$a:b = c:d$, then $\frac{a-b}{b} = \frac{c-d}{d}$		$a:c = b:d$
Alternando	If $a:b = c:d$ then $a:c = b:d$		

Recapitulation Work →

Ques. If $4a : 5b$ and $3b : 9c$. Find $a : b : c$?

Ques. Find the ratio 75 cm to 1.5 cm?

Ques. Give two equivalent ratio of $3 : 5$?

Ques. Divide 60 in the ratio of $2 : 3$?

Homework →

To solve the question and examples of chapter ratio and proportion.

LESSON No. 12

Date..... Duration of the Period... 35-40 minutes
 Pupil teacher's Name... Aditi Dasgupta Pupil Teacher's Roll no.....
 Class ... VIII ... Average Age of the pupils ... 13 Years ...
 Subject... Teaching in mathematics Topic... Circle

General Aim →

- To develop the interest of the students.
- To develop the mathematical skills.

Instructional Objectives →

The objectives of teaching of mathematics may be classified as under.

Knowledge →

- Students will be able to recall and recognize circle.
- Students will be able to define circle.

Application →

Students will be able to apply and develop a good speed and neatness of drawing circle and its parts.

Specific Teaching Aids :-

Chalk, chalk - Board, duster

Previous Knowledge Testing →

Ques. What is the fixed point called in circle?

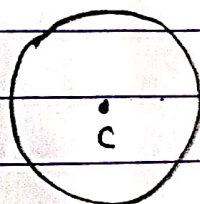
Ques. What is circle?

Announcement of the topic →

After finding students are unable to give an appropriate answer, the pupil-teacher will announce the topic by saying today we are going to study about "CIRCLE".

Teaching Point	Pupil - Teacher's Activity	Students Activity	C.O.B.W.O.
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circle	The collection of all points in plane which all have in a constant distance from a fixed point.	Students are writing in their notebook	Circle
--------	---	--	--------



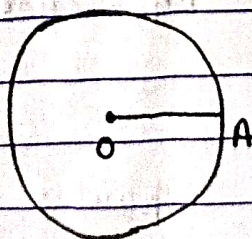
circle

Radius

The word radius is also used to mean the line segment of joining any point at the circle to its centre of circle.

Students are writing in their notebook

Radius

 $OA = \text{radius}$

Diameter

A diameter is a line

Diameter

Teaching Point

Pupil- Teacher Activity

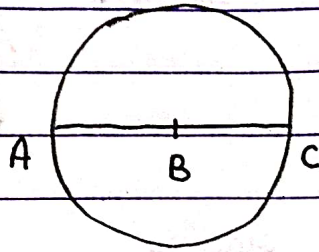
Student Activity

C.B.W.

of circle

A diameter is a line segment passing through the centre of the circle and having its end point on circle

Students write down about diameter

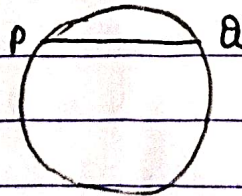


$AC = \text{Diameter}$

Chord of circle

A line segment joining two points PQ of a circle is called chord.

Students are writing in



$PQ = \text{chord}$

their notebook

Chord of circle

Arc of circle

The smaller part is called minor arc and bigger part is called major arc.

Students are writing in their notebook

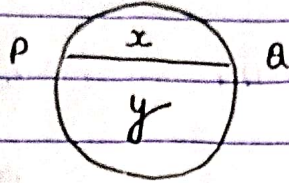
Arc of circle

Teaching Point

Pupil - Teacher Activity

Students Activity

C.O.B.W.



Interior and exterior of circle

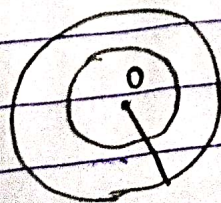
1) Part of plain containing all points such as P of the plain enclosed by the circle. Thus, point is called interior of circle.

Students are writing in their notebook

Interior & exterior of circle

2.) The collection of all points such as R of the plain lying on circle itself. This point is called radius.

3.) The collection of all points such are not enclosed by circle is called exterior of circle.



Recapitulation Work →

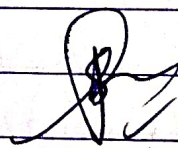
Ques. What are concentric circle?

Ques. What is chord of circle?

Ques. What is diameter?

Homework ↔

Draw and learn different parts of the circle.





DISCUSSION LESSON- II

LESSON No.1.....

Date.....

Duration of the Period.....35-40 minutes

Pupil teacher's Name. Aarti Deswal

Pupil Teacher's Roll no.....

ClassVIII.....

Average Age of the pupils13 years.....

Subject Teaching.....Of Mathematics

Topic.....Surface area of cube and cuboid

General Aim →

- To develop the interest of the students.
- To develop the reasoning a mathematical skill.

Instructional Objectives →

Students will be able to recall and recognise cube and cuboid as under

Knowledge →

Students will be able to recall and recognise cube and cuboid.

Understanding →

Students will be able to set examples of cube and cuboid.

Application →

Students will be able to find area of each fact of cube and cuboid.

Skill →

Students will be able to evaluate the surface area of cube and cuboid.

Teaching Aids →

1.) General Aids →

Chalk, Board, duster, pointer

2.) Specific Aids →

A chart of surface area of cube and cuboid, some real objects related to cube and cuboid.

Previous Knowledge Testing →

Ques. What is the area of rectangle?

Ques. What is the area of square?

Ques. What is the shape of each face of cuboid?

Announcement of Topic →

After finding students are unable to give an appropriate answer the pupil-teacher will announce the topic by saying that today we are going to study about

"SURFACE AREA OF CUBE AND CUBOID"

Presentation →

Teaching Point	Pupil - Teacher Activity	Student Activity	Co B.W.
Area of Rectangle	A rectangle is a figure bounded by four sides in which opposite sides are equal. Suppose length of rectangle is 'l' and breadth 'b' of rectangle then area of rectangle $l \times b$.	Students are writing down in their notebook	Area of Rectangle
Area of Square	A square is figure bounded by four sides in which all sides are equal. Suppose length of square is 'a' then Area of square $= a^2$	Students are writing down in their notebook	Area of Square

Teaching Point

Pupil - Teacher Activity

Student Activity

C.B.W.

Area of cuboid

If we take the length, of cuboid as 'l' and breadth as 'b' and height as 'h' then

Students are writing in their notebook

Area of cuboid

Sum of area of six rectangles =
Surface area of cuboid

Surface area of cuboid =
 $2(lb + bh + hl)$

Ques: If we have a cuboid whose length, breadth and height are 15, 10 and 20 cm respectively.

Find surface area of cuboid.

Teaching
Point

Pupil - Teachers Activity

Students
Activity

Co.B.W.

$$\text{Surface area of cuboid} = 2(lb + bh + hl)$$

$$= 2 [150 + 300 + 200]$$

$$= 2 \times 650$$

$$= 1350 \text{ cm}^2$$

Area
of
Cube

A cuboid whose length, breadth and height, all are equal is called cube.

Students are writing in their notebook

Area
of
Cube

Suppose the length, breadth and height of cube is 'a'

Surface area of
cube =

$$2 [axa + axa + axa]$$

Teaching Point	Pupil - Teacher Activity	Student's Activity	Co Bo Wo
	$= 2(3a^2)$ $= 6a^2$		
	Surface area of cube $= 6a^2$	students are writing in	
	Ques : What is the surface area of cube if side 5cm?	their notebook	
	Surface area of cube $= 6a^2$ $= 6 \times (5)^2$ $= 150 \text{ cm}^2$		

Recapitulation Work →

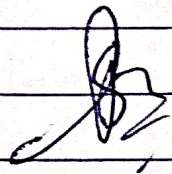
Ques. What is the finding of formula of surface area of cuboid?

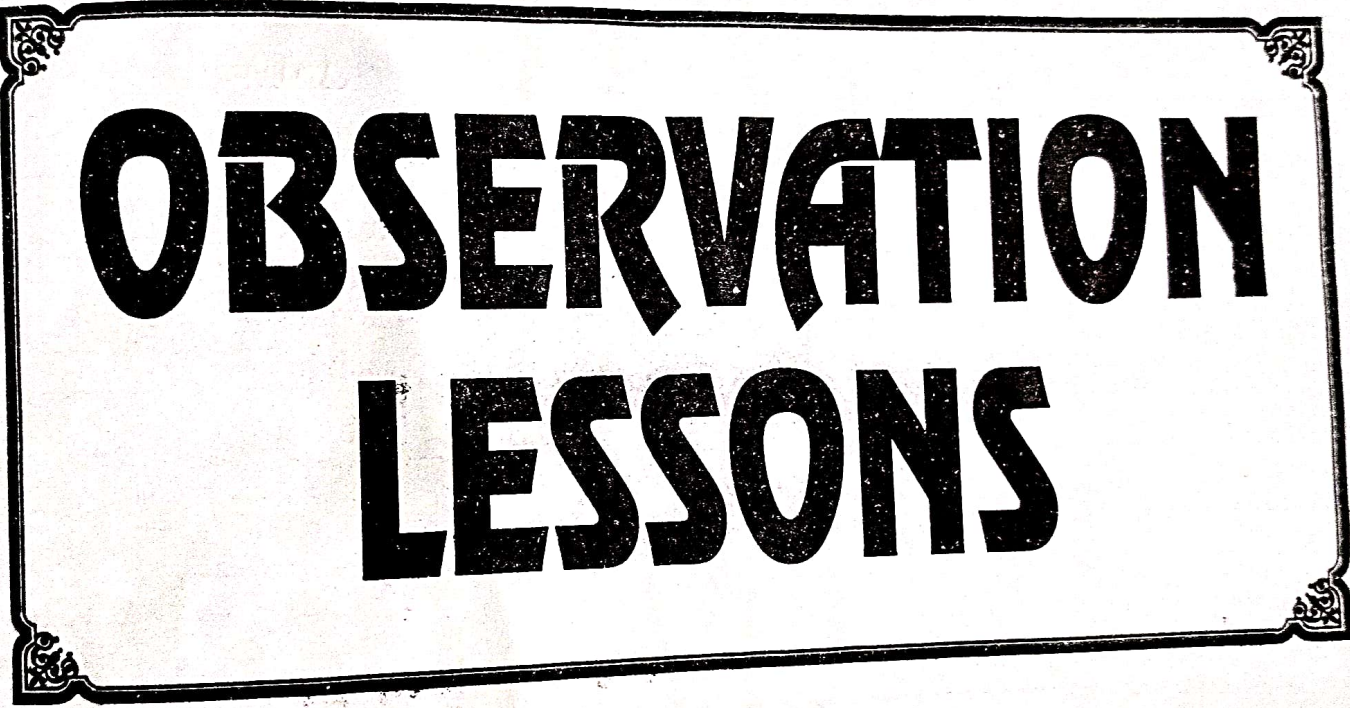
Ques. Find the side of cube whose surface area is 1014 cm^2 ?

Ques. What is the surface area of a cube of side 17 cm ?

Homework →

Learn and write all the formulae.





OBSERVATION LESSONS

Observation Lesson No.

Date Duration of Period... 3.5 - 4.0 minutes

Pupil Teacher's Name Aditi..... Pupil Teacher's Roll No.....

Class VI Average Age of the pupils 11 years.

Subject Teaching of Topic Area
mathematics

1. The voice was clear.
2. Handwriting was good.
3. Teaching aid was good.

Aditi
Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No.².....

Date Duration of Period..... 35-40 minutes

Pupil Teacher's Name Ashish Pupil Teacher's Roll No.

Class VII Average Age of the pupils....12 years

Subject Teaching of Topic Volume
mathematics

1. Proper use of blackboard
2. Testing the previous knowledge
3. Voice was clear

Aditi
Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No.3.....

Date Duration of Period...35-40 minutes

Pupil Teacher's Name Aditi Pupil Teacher's Roll No.....

ClassVII..... Average Age of the pupils...12 years.

Subject ...Teaching of..... Topic.....Numbers
mathematics

1. Teaching was better.
2. The voice was clear.
3. Confidence in teaching

Aditi
Sign. of Pupil Teacher


Sign. of Supervisor

Observation Lesson No.4.....

Date Duration of Period...35-40 Min.....

Pupil Teacher's Name Aditi Pupil Teacher's Roll No.....

ClassVI..... Average Age of the pupils...11 years

Subject ...Teaching of..... Topic.....Circumference of
Mathematics circle

1. Handwriting was good.
2. Proper use of teaching aids.
3. Proper use of previous knowledge.

Aditi
Sign. of Pupil Teacher


Sign. of Supervisor

Date Duration of Period...35-40 minutes

Pupil Teacher's Name Aditi Pupil Teacher's Roll No.

Class V Average Age of the pupils 10 years

Subject Teaching of Topic Fraction
mathematics

1. Teaching way was better.
2. The voice was clear.
3. Confidence in teaching.

Aditi

Sign. of Pupil Teacher



Sign. of Supervisor

Observation Lesson No.6.....

Date Duration of Period 35-40 minutes

Pupil Teacher's Name Aditi Pupil Teacher's Roll No. 1

Class VI Average Age of the pupils 11 years

Subject Teaching of Topic Line
mathematics

1. Handwriting was good.
2. Proper use of teaching aids
3. Testing the previous knowledge

Acid

Sign. of Pupil Teacher

Sign. of Supervisor 

Sign. of Supervisor

Observation Lesson No.7.....

Date Duration of Period.....35-40 minutes

Pupil Teacher's Name ..Aditi... Pupil Teacher's Roll No.....

ClassVI..... Average Age of the pupils...11 years

Subject ...Teaching.....of..... Topic.....Statistics.....
mathematics

1. Teaching way was better.
2. Voice was clear.
3. Confidence in teaching.

Aditi
Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No.8.....

Date Duration of Period...35-40 minutes

Pupil Teacher's Name ..Aditi... Pupil Teacher's Roll No.....

ClassVII..... Average Age of the pupils...13 years

Subject ...Teaching.....of..... Topic.....Simple.....Interest.....
mathematics

1. Proper use of blackboard
2. Previous knowledge was tested

Aditi
Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No. 9.....

Date Duration of Period... 35-40 minutes

Pupil Teacher's Name ..A.diti... Pupil Teacher's Roll No.....

Class VIII Average Age of the pupils... 13 years

Subject ...Teaching in... Topic... Trigonometry
mathematics

1. Teaching way was better
2. Voice was clear.
3. Confidence in teaching

A.diti

Sign. of Pupil Teacher

Sign. of Supervisor

Observation Lesson No. 10.....

Date Duration of Period... 35-40 minutes

Pupil Teacher's Name ..A.diti... Pupil Teacher's Roll No.....

Class VII Average Age of the pupils... 12 years

Subject ...Teaching in... Topic... Circle
Mathematics

1. Proper use of black board.
2. Writing was so good.

A.diti

Sign. of Pupil Teacher

Sign. of Supervisor