Metric 2.4.13- Comprehensive appraisal of interns' performance is in place. The criteria used for assessment include

1. Effectiveness in class room teaching
2. Competency acquired in evaluation process in schools
3. Involvement in various activities of schools
4. Regularity, initiative and commitment
5. Extent of job readiness

Clarification Asked

HEI has not provided any supporting documents as per SOP. HEI needs to provide the Format of Criteria and Weightages for interns' performance appraisal used Five filled in formats for each of the aspects claimed

Response

1. Five filled in formats for each of the aspects claimed are attached. (Appendix-I)
2. Format of Criteria and Weightages for interns' performance appraisal used is attached. (Appendix-II)

2023-2024

APPENDIX

I

SHEELA MULTIPURPOSE SOCIETY

SHEELADEVI COLLEGE OF EDUCATION

DATTAWADI, WADI, NAGPUR

2023 - 2024

LESSON PLANNING BOOK
पाठ नियोजन पुस्तिका

Name: Ketaki Shrikant Ohall
नाव:

Number: _____
क्रमांक:

Subject: 1) Mathematics
विषय:

2) _____

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

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

अनुक्रमणिका
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क्रमांक S.No.	दिनांक Date	शाळा School	वर्ग Class	विषय Subject	विषयांक Topic	स्वाक्षरी Signature
19	22/12	— 11 —	IX	Maths	Linear equation in two variables	Skalbonde
20	23/12	— 11 —	IX	Maths	statistics	Skalbonde

पाठांक S.No. 1 | विषय Subject Mathematics

शाळा School V.L. Convent | विषयांश Topic Rational and Irrat

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

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Rational Numbers	*] To enable students to identify Rational and Irrational Numbers.
	2] Irrational Numbers	*] To enable students to differentiate between Rational and Irrational Numbers.
	3] Real Numbers	*] To understand Number system and differentiate between the set of numbers.
Statement of Aim - Today, we are going to		

दिनांक Date 16/09/23

वर्ग Class IX th

Natural Numbers

तासिका अवधी Length of the Period 35 min

Natural numbers, Integers

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teachers ask some introductory questions Q 1] What are natural numbers? Q 2] What are whole numbers? Q 3] What are integers?	Students give satisfactory answers to the asked questions. Ans] The counting numbers from 1, 2, 3, 4 --- are called natural numbers. Ans] Whole numbers are the collection of positive numbers with zero. 0, 1, 2, 3, 4 ---- Ans] The collection of whole numbers with zero, and negative numbers ... -2, -1, 0, 1, 2 ----
learn about Rational and Irrational Numbers.	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	**Rational Numbers -** The numbers in the form of $\frac{m}{n}$ are called rational numbers. Where, m and n are integers $n \neq 0$. **Examples -** -25 is a rational number, because it can be written in the form of $\frac{m}{n}$ as $\frac{-25}{1}$. **Decimal Expansion -** The decimal expansion of rational numbers is either terminating or non-terminating, recurring. 0.687, $1.272727\ldots = 1.\overline{27}$	1] **Knowledge -** Students are able to know the concept of Rational numbers. 2] **Understanding -** Students are able to understand various rational numbers 3] **Application -** Students are able to apply concept of rational numbers to various examples.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q.1] What are Rational numbers?	Ans] When a number can be written in the form of $\frac{m}{n}$ where m, n are integers and $n \neq 0$ are rational numbers.
Q.2] Give any two examples of rational numbers.	Ans] $6, \frac{7}{6}, \frac{8}{6}, \frac{12}{6}, \frac{15}{3}, \frac{-19}{4}$ are examples of some rational numbers.
Q.3] How many rational numbers are there between any given two rational numbers?	Ans] There are infinitely many rational numbers between any given two rational numbers.
Q.4] Find three rational numbers between 6 and 7	Ans] $3+1=4$ $6 \times \frac{4}{4} = \frac{24}{4}$ $\quad 7 \times \frac{4}{4} = \frac{28}{4}$ Three numbers between 6 and 7 are $\left[\frac{25}{4}, \frac{26}{4}, \frac{27}{4}\right]$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Irrational Numbers - The numbers which cannot be written in the form of $\frac{m}{n}$ where, m and n are integers and $n \neq 0$ **Examples -** $\sqrt{2}, \sqrt{3}, \sqrt{15}, \pi$ are some of the examples of irrational numbers. **Decimal Expansion -** The decimal expansion of irrational numbers is non-terminating and non-recurring $\sqrt{2} = 1.4142135\ldots$ $\pi = 3.14159265\ldots$	1] **Knowledge -** Students are able to know the concept of Irrational numbers 2] **Understanding** Students are able to understand various Irrational Numbers. 3] **Application -** Students are able to apply the concept of Irrational numbers to various example

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q-1] What are irrational numbers ?	Ans] The numbers which cannot be written in the form of $\frac{m}{n}$ where m, n are integers and $n \neq 0$ are called irrational numbers.
Q-2] Give some examples of irrational numbers.	Ans] $\sqrt{2}, \sqrt{3}, \sqrt{5}, \sqrt{6}, 0.10110\ldots$ π are some examples of irrational numbers.
Q-3] Are the square roots of all positive integers irrational ?	Ans] No, the square roots of all positive integers are not irrational. for ex - $\sqrt{4} = 2$ - rational
Q-4] Find an irrational number between $\frac{1}{7}$ and $\frac{2}{7}$	Ans] $\frac{1}{7} = 0.\overline{142857}$ $\frac{2}{7} = 0.\overline{285714}$ So, an irrational number between $\frac{1}{7}$ and $\frac{2}{7}$ is $0.150115001\ldots$

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teachers ask some questions related to the topic Q.1] What are real numbers.	students give appropriate answers to the asked questions. Ans] The collection of all rational and irrational numbers is called real numbers.
Q.2] Classify the following as rational or irrational numbers. i] $\sqrt{9}$ ii] $\sqrt{2}$ iii] π iv] $\sqrt{225}$	Ans] i] $\sqrt{9} = 3$ .. rational ii] $\sqrt{2} = 1.414...$ irrational iii] $\pi = 3.1415$ ... irrational iv] $\sqrt{225} = 15$ .. rational.
Q.3] How can you classify rational and irrational numbers using their decimal expansions?	Ans] If the decimal expansion of a number is terminating or non-terminating recurring, then it is a rational number. If the decimal expansion of a number is non-terminating, non-recurring then it is an irrational number.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly

फलक सार
Black Board Summary

Day-Saturday Class-IX On Roll-
Date-16/09/23 Sub-Mathematics Present-
Topic-Rational and Irrational Absent-
Numbers

1] Rational Numbers
$Q = \{ \frac{p}{q}$, where p and q are integers $q \neq 0 \}$

2] Irrational Numbers
I = { non-rational numbers }

3] Real numbers
R = { rational, irrational }

Homework - Classify the following numbers as rational or irrational numbers
1] $\sqrt{23}$ 2] $\sqrt{625}$ 3] 0.3796 4] 7.478478 -----

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework on the black-board. Homework- Classify the following numbers as rational or irrational numbers. i] $\sqrt{23}$ ii] $\sqrt{625}$ iii] 0.3796 iv] 7.478478--- v] 2.202002000--- vi] $\sqrt{3}$	students write it down and solve by themselves in their respective notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 2 | विषय Subject Mathematics

शाळा School V.L. Convent | विषयांश Topic Operations on Rational

पाठ साहित्य Material Aids Chalk, Blackboard, Duster. | पूर्व ज्ञान Previous Knowledge Rational, Irrational

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

दिनांक Date 18/09/23

umbers, Irrational numbers
Real numbers

वर्ग Class IX th

mbers, Laws of Indices

तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teachers ask some of the introductory questions.	students give satisfactory answers to the asked questions.
Q1] What is $(\sqrt{6})+(-\sqrt{6})$?	Ans] The answer of $(\sqrt{6})+(-\sqrt{6})$ is zero $\sqrt{6}+(-\sqrt{6})=0$
Q2] What is $(\sqrt{3})\cdot(\sqrt{3})$?	Ans] The answer of $(\sqrt{3})\cdot(\sqrt{3})$ is 3 $(\sqrt{3})\cdot(\sqrt{3})=3$
Q3] What is $\frac{\sqrt{17}}{\sqrt{17}}$?	Ans] The answer of $\frac{\sqrt{17}}{\sqrt{17}}$ is 1 $\frac{\sqrt{17}}{\sqrt{17}}=1$

learn operations on real numbers.

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic	students give appropriate answers to the asked questions.
Q1] Rationalise the denominator of $\frac{1}{\sqrt{2}}$	Ans] $\frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$
Q2] Rationalise the denominator of $\frac{1}{2+\sqrt{3}}$	Ans] $\frac{1}{2+\sqrt{3}} \times \frac{2-\sqrt{3}}{2-\sqrt{3}} = \frac{2-\sqrt{3}}{(2)^2-(\sqrt{3})^2}$ $= \frac{2-\sqrt{3}}{1}$ $= 2-\sqrt{3}$
Q3] what is i] $\sqrt{a} \times \sqrt{b}$ - ii] $(\sqrt{a}+b)(\sqrt{a}-b)$	Ans] The answers of i] $\sqrt{a} \times \sqrt{b}$ is $\sqrt{ab}$ ii] $(\sqrt{a}+b)(\sqrt{a}-b)$ is $(\sqrt{a})^2 - b^2 = a - b^2$
Q4] What is rationalising the denominator?	Ans] when the the denominato contains a term with squa root, the process of converting it to an expr- ession whose denominato is a rational number is called Rationalising the denominator.

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q.1] In the law $a^m \cdot a^n = a^{m+n}$ what are a, m, n called?	Ans] In the given law a is called the base and m and n are called exponents.
Q.2] What is i] $a^0 = ?$ ii] $\frac{1}{a^n} = ?$	Ans] The answer of i] $a^0 = 1$ ii] $\frac{1}{a^n} = a^{-n}$
Q.3] What is i] $\sqrt[n]{a} = ?$ ii] $2^{1/3} = ?$	Ans] The answer of i] $\sqrt[n]{a} = a^{\frac{1}{n}}$ ii] $2^{1/3} = \sqrt[3]{2}$
Q.4] Explain how you do see at $a^{\frac{m}{n}}$ in the view of Laws of exponents.	Ans] Let $a > 0$ be a real number. Let m and n are integers such that they don't have common factors. then, $a^{\frac{m}{n}} = (\sqrt[n]{a})^m = \sqrt[n]{a^m}$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Operations on real numbers. 2] Rationalisation of the denominator 3] Laws of exponents.	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students. *] To test the knowledge gained by students regarding operations on real numbers.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
1] What should we do to rationalise the denominator of $\frac{1}{\sqrt{a}+b}$?	Ans] To rationalise the given number, we should multiply it by $\frac{\sqrt{a}-b}{\sqrt{a}-b}$ where a, b are integers.
2] If r is rational and s is irrational, what are its addition, subtraction, multiplication and division?	Ans] If r is rational and s is irrational, then r+s and r-s are irrational and rs and $\frac{r}{s}$ are irrational where $r \neq 0$
3] Simplify - $2^{\frac{2}{3}} \cdot 2^{\frac{1}{3}}$	Ans] By using the laws of indices $a^p \cdot a^q = a^{p+q}$ $2^{\frac{2}{3}} \cdot 2^{\frac{1}{3}} = 2^{\frac{2}{3}+\frac{1}{3}}$ $= 2^1 = 2$ The answer is 2.
4] Simplify - $(3^{\frac{1}{5}})^4$	Ans] By using the laws of indices $(a^p)^q = a^{pq}$ $(3^{1/5})^4 = 3^{1/5 \times 4}$ $= 3^{4/5}$ The answer is $3^{4/5}$

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
H O M E W O R K		*] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly.

फलक सार

Black Board Summary

Day- Monday
Date - 18/09/23

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

On Roll-
Present-
Absent-

1] Rationalisation of denominator

$\sqrt{ab} = \sqrt{a} \times \sqrt{b}$

$(\sqrt{a}+\sqrt{b})(\sqrt{a}-\sqrt{b}) = a-b$

2] Laws of Indices

a] $a^p . a^q = a^{p+q}$

b] $a^p / a^q = a^{p-q}$

c] $(a^p)^q = a^{pq}$

d] $a^p . b^p = (ab)^p$

Homework - simplify -

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

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

3] $32^{2/5}$

4] $7^{1/2} . 8^{1/2}$

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard Homework - Q] simplify 1] $(3+\sqrt{3})(3-\sqrt{3})$ 2] $(3+\sqrt{3})(2+\sqrt{2})$ 3] $32^{\frac{2}{5}}$ 4] $7^{\frac{1}{2}} \cdot 8^{\frac{1}{2}}$	Students write it down and solve by themselves in their respective notebooks.

अभिप्राय (Remarks)

Very good.

Kalbandi

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 3

विषय Subject Mathematics

शाळा School V.L. Convent

विषयांश Topic Heron's Formula

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Types of Triangles

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Perimeter 2] Semiperimeter 3] Heron's formula 4] Applications	*] To enable students to find area of scalene triangle *] To enable students to apply Heron's formula to find area of triangles. *] To enable students to apply Heron's formula in real life examples.
Statement of Aim - Today, we	are going to	

दिनांक Date 23/09/23

and its Applications

वर्ग Class IX th

-Equilateral, Isosceles, Scalene triangle

तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions. Q.1] What are types of triangles with respect to sides? Q.2] What are types of triangles with respect to angles Q.3] What is the formula to calculate area of triangle?	Students give appropriate answers of the asked questions. Ans] The types of triangles based on sides are i] Equilateral triangle ii] Isosceles triangle iii] Scalene triangle Ans] The types of triangles based on angles are i] Acute angled triangle ii] Obtuse angled triangle iii] Right angled triangle Ans] The area of triangle can be calculated by $A = \frac{1}{2} \times base \times height$

Learn about Heron's Formula

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q-1] What is perimeter of a triangle?	Ans] The sum of lengths of all three sides of a triangle is perimeter $P = a+b+c$
Q-2] What is the unit of perimeter and semiperimeter of a triangle ?	Ans] The unit of perimeter and semiperimeter is same as that of length i.e. m, cm or unit
Q-3] Find the perimeter of a triangle whose sides are 3cm, 4cm and 5 cm.	Ans] perimeter of triangle $P = a+b+c$ $= 3+4+5$ $= 12$ cm $\therefore$ Perimeter $= 12$ cm
Q-4] Find the semiperimeter of the triangle in the above question.	Ans] semiperimeter of a triangle $s = \frac{a+b+c}{2}$ $s = \frac{3+4+5}{2} = \frac{12}{2} = 6$ cm $\therefore$ semiperimeter $= 6$ cm

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] What is a Scalene triangle ?	Ans] A triangle whose all three sides are of unequal length is called a Scalene triangl
Q2] Who gave Heron's Formula ?	Ans] Hero of Alexandria derived formula for the calculation of the area of a triangle using lengths of all three sides.
Q3] What is the unit of area of a triangle?	Ans] The unit of area of a triangle is cm^2 or sq. cm m^2 or sq. m $unit^2$ or sq. units.
Q4] Find area of a triangle whose sides are 10m, 17m and 21m?	Ans] $S = \frac{a+b+c}{2} = \frac{10+17+21}{2} = 24$ m $A = \sqrt{s(s-a)(s-b)(s-c)}$ $= \sqrt{24(24-10)(24-17)(24-21)}$ $= \sqrt{24 \times 14 \times 7 \times 3} = \sqrt{7056}$ $= 84$ sq. m $\therefore$ Area $= 84$ sq. m / m^2

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Perimeter $P = a+b+c$ 2] Semiperimeter $s = \frac{a+b+c}{2}$ 3] Heron's Formula $A = \sqrt{s(s-a)(s-b)(s-c)}$ 4] Applications of Heron's formula	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students. *] To test the knowledge gained by the students regarding Heron's formula.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teachers ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q.1] When do we use Heron's formula ?	Ans] Heron's formula is used to find the area of triangle when all its three side-lengths are known to us.
Q.2] What is Heron's formula for equilateral triangle ?	Ans] An equilateral triangle has all its three sides equal. So, Heron's formula to find its area is given by $A = \sqrt{s(s-a)^3}$
Q.3] A triangle has sides 4 cm, 13 cm and 15 cm. Find the area of the triangle.	Ans] $s = \frac{4+13+15}{2} = 16$ cm $A = \sqrt{s(s-a)(s-b)(s-c)}$ $= \sqrt{16(16-4)(16-13)(16-15)}$ $= \sqrt{16 \times 12 \times 3 \times 1} = \sqrt{576} = 24$ sq.cm
Q.4] How can we find the area of a quadrilateral using Heron's formula ?	Ans] We can divide the given quadrilateral into two triangles and find the area for both using Heron's formula. At last add the two areas.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly

फलक सार
Black Board Summary

Day - Monday
Date - 18/09/23

Class - IX
Sub - Mathematics
Topic - Heron's Formula

On Roll -
Present -
Absent -

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

$$P = a+b+c$$

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

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

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

अध्ययनानुभव (Learning Experience)

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

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 4

विषय Subject Mathematics

शाळा School V.L-convent

विषयांश Topic Polynomials (Degree

पाठ साहित्य Material Aids Chalk, duster, Blackboard.

पूर्व ज्ञान Previous Knowledge Basic algebraic

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

दिनांक Date 26/09/23

वर्ग Class IX th

तासिका अवधी Length of the Period 35 min

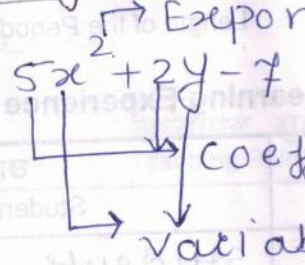
Coefficients, Identities

Identities

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions Q1] What are polynomials? Q2] In the given polynomial, $5x^2 + 2y - 7$, what is the constant? Q3]	students give appropriate answers to the asked questions. Ans] An expression of more than two algebraic terms, contain sum and various powers of the variables is called a polynomial. Ans] In the given polynomial, constant term is 7. Ans]

Study the topic Polynomials.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Degree of a polynomial  The highest power of the variable in a polynomial is called as degree of the polynomial. In the given polynomial, highest power of variable is 2. So, degree of the polynomial is 2.	1] Knowledge- The students are able to know various algebraic identities 2] Understanding The students will be able to explain the term and coefficient of polynomials. 3] Application The students are able to predict the degree of the polynomials.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask questions related to the topic.	Students give appropriate answers to the asked questions.
Q.1] What are polynomials having one and two terms called?	Ans] Polynomials having one term are called monomials while two terms are called binomials.
Q.2] What is a polynomial having degree one and two called?	Ans] A polynomial of degree one is called linear polynomial while one having degree two is called quadratic polynomial.
Q.3] What is the degree of a non-zero constant polynomial?	Ans] The degree of a non-zero constant polynomial is zero.
Q.4] What is a polynomial having degree three and four called?	Ans] A polynomial of degree three is called cubic polynomial whereas one having degree four is called as quartic polynomial.

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

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q.1] Find the product of $(x-3)(x+5)$	Ans] $(x-3)(x+5)$ $= x^2 + [-3+5]x + (-3)(5)$ $= x^2 + 2x - 15$
Q.2] Evaluate 105×106 without multiplying directly.	Ans] $105 \times 106 = (100+5)(100+6)$ $= (100)^2 + (5+6) \times 100 + (5 \times 6)$ $= 10000 + 1100 + 30$ $= 11130$
Q.3] Write $(3a+4b+5c)^2$ in expanded form.	Ans] let $x = 3a$, $y = 4b$ $z = 5c$ $(3a+4b+5c)^2 = 9a^2 + 16b^2 + 25c^2 + 24ab + 40bc + 30ac$
Q.4] Evaluate $(104)^3$ without calculating numerically	Ans] $(104)^3 = (100+4)^3$ $(104)^3 = (100)^3 + (4)^3 + 3(100)(4)(100+4)$ $= 1000000 + 64 + 124800$ $= 1124864$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Degree of a polynomial → a] linear b] quadratic c] cubic d] quartic 2] Algebraic Identities	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students. *] To test the knowledge gained by the students regarding polynomials.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic Q.1] What is the coefficient of x^2 in the following - i] $2+x^2+x$ ii] $\pi/2\, x^2+x$ Q.2] Write the degree of each of the following i] $5x^3+4x^2+7x$ ii] $4-y^2$ iii] $5t-\sqrt{7}$ Q.3] Give one example each of a binomial of degree 35 and a monomial of degree 100. Q.4] Write the following cube in the expanded form $(3a+4b)^3$	Students give appropriate answers to the asked questions. Ans] The coefficient of x^2 in i] $2+x^2+x$ is 1 ii] $\pi/2\, x^2+x$ is $\pi/2$ Ans] The degree of equations i] $5x^3+4x^2+7x$ is 3 ii] $4-y^2$ is 2 iii] $5t-\sqrt{7}$ is 1 Ans] A binomial of degree 35 is $3x^{35}+25$ Monomial of degree 100 is $y^{100}, 3x^{100}$ Ans] $(3a+4b)^3$ $=(3a)^3+(4b)^3+3(3a)(4b)(3a+4b)$ $=27a^3+64b^3+108a^2b+144ab^2$

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly

फलक सार

Black Board Summary

Day - Saturday
Date - 23/09/23

Class - IX
Sub - Mathematics
Topic - Polynomials

On Roll -
Present -
Absent -

Standard form of a polynomial

$ax^2 + by + c = 0$

Degree of a Polynomial

1] Linear
2] Quadratic
3] Cubic
4] Quartic

Homework - Q.1] Classify the following polynomials as linear, quadratic and quartic.

a] $x^2 + x$ b] $x^4 + 7x^3$ c] $x + 1$ 4] x^2

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard. Homework - 1] Classify the following as linear, quadratic and cubic, quartic polynomials. 1] x^2+x 2] x^4+7x^3 3] $1+x$ 4] x^2 2] Expand 1] $(3x+4)(3x-5)$ 2] $(2a-3b)^3$	Students write it down and solve it in their respective notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 5

विषय Subject Mathematics

शाळा School V.L. Convent

विषयांश Topic Zeros of a Polynomial

पाठ साहित्य Material Aids Chalk, duster, blackboard

पूर्व ज्ञान Previous Knowledge Polynomials and

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Zero of a polynomial 2] Factor Theorem	*] To enable students to identify factors of a polynomial *] To enable students to predict the zeros of a polynomial *] students are able to define factor theorem

Statement of Aim – Today we are going to

दिनांक Date 05/10/23

Factor Theorem

वर्ग Class IX th

Algebraic identities

तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teachers ask some introductory questions Q.1] What is the variable in the equation/ polynomial $5x^3 - 2x^2 + 3x - 2$? Q.2] Which value will you get when you replace x by 1 in the equation? Q.3] What can we say from above value?	Students give appropriate answers to the asked questions. Ans] In the polynomial $5x^3 - 2x^2 + 3x - 2$, x is the variable. Its value varies from a lower range to higher. Ans] $p(x) = 5x^3 - 2x^2 + 3x - 2$ $p(1) = 5(1)^3 - 2(1)^2 + 3(1) - 2$ $= 5 - 2 + 3 - 2$ $p(1) = 4$ Ans] We can say that the value of $p(x)$ at $x = 1$ is 4.

Study Zeros of a Polynomial.

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

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask questions related to the topic	Students give appropriate answers to the asked questions.
Q 1] How many zeros does a linear polynomial has?	Ans] Every linear polynomial has one and only one zero.
Q 2] Can a polynomial have more than one zero?	Ans] Yes, a polynomial can have more than one zero.
Q 3] Verify whether -2 is the zero of the polynomial $x+2$	Ans] Let $p(x) = x+2$ $0 = x+2$ $x = -2$ $\therefore$ Yes, -2 is a zero of the polynomial $x+2$
Q 4] Check whether 2 and 0 are zeros of the polynomial $x^2 - 2x$.	Ans] Let $p(x) = x^2 - 2x$ $p(2) = (2)^2 - 2(2)$ $= 4 - 4$ $= 0$ $p(0) = (0)^2 - 2(0)$ $= 0 - 0$ $= 0$ Yes, 2 and 0 are both zeros of the polynomial $x^2 - 2x$

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask questions related to the topic	students give appropriate answers to asked questions.
Q1] Factorise y^2-5y+6 by factor theorem.	Ans] $p(y)=(y-a)(y-b)$ $p(2)=2^2-(5\times 2)+6=0$ $\therefore y-2$ is a factor of $p(y)$ $p(3)=3^2-(5\times 3)+6=0$ $\therefore y-3$ is a factor of $p(y)$ $\therefore (y-2)(y-3)$ are factors
Q2] Factorise y^2-5y+6 by splitting the middle term	Ans] y^2-5y+6 $\quad 6y^2$ $=y^2-3y-2y+6$ $\quad -3y \times -2y$ $=y(y-3)-2(y-3)$ $\quad -5y$ $=(y-2)(y-3)$ $\therefore (y-2)(y-3)$ are the factors.
Q3] If $p(a)=0$ by $p(x)$ then what can you say about its factor?	Ans] If $p(a)=0$ then $(x-a)$ is a factor of given $(p(x))$.
Q4] Find the value of 'k' if $x-1$ is a factor of $4x^3+3x^2-4x+k$.	Ans] $x-1$ is a factor of $p(x)$ $\therefore p(1)=0$ $p(1)=4(1)^3+3(1)^2-4(1)+k$ $0=4+3-4+k$ $\boxed{k=-3}$ $\therefore$ value of k is -3.

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

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask questions related to the topic	students give appropriate answers to the asked questions.
Q.1] Find the value of the polynomial $5x-4x^2-3$ at $x=0$	Ans] let $p(x) = 5x-4x^2-3$ $p(0) = 5(0)-4(0)^2-3$ $= -3$ $\therefore$ at $x=0$, value of polynomial is -3.
Q.2] Find $p(1)$ of the polynomial $p(y) = y^2-y+1$	Ans] let $p(y) = y^2-y+1$ $p(1) = (1)^2-(1)+1$ $p(1) = 1$ $\therefore p(1)$ of $p(y)$ is 1.
Q.3] Is it necessary that zero of a polynomial is zero?	Ans] No, a zero of a polynomial need not to be zero.
Q.4] Determine whether $g(x) = x+1$ is a factor of $p(x) = 2x^3+x^2-2x-1$	Ans] $p(x) = 2x^3+x^2-2x-1$ $x+1=0 \quad x=-1$ $p(-1) = 2(-1)^3+(-1)^2-2(-1)-1$ $= -2+1+2-1$ $=0$ $\therefore g(x)$ is a factor of $p(x)$

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time. *] To create interest in the topic taught. *] To understand the taught concept properly.

फलक सार

Black Board Summary

Day - Tuesday
Date - 26/09/23

Class - IX
Sub - Mathematics
Topic - Zero of a polynomial

On Roll -
Present -
Absent -

1] Zero of a polynomial $p(x)$ is $p(c) = 0$

2] Factor theorem
→ If $(x-a)$ is a factor of $p(x)$ then $p(a) = 0$

Homework - Q.1] Find the zero of $p(x)$ in each case.

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

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अध्ययनानुभव (Learning Experience)

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

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 6 | विषय Subject Mathematics

शाला School V.L. convent | विषयांश Topic Co-ordinate Geom

पाठ साहित्य Material Aids Chalk, Duster, Blackboard, Graph Paper | पूर्व ज्ञान Previous Knowledge Position of point

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Cartesian system 2] Plotting the points in the cartesian plane	*] To enable students to know and understand co-ordinate geometry *] To enable students to determine x and y coordinates of the points. *] students are able to plot points in the cartesian plane
statement of Aim - Today, we		are going to

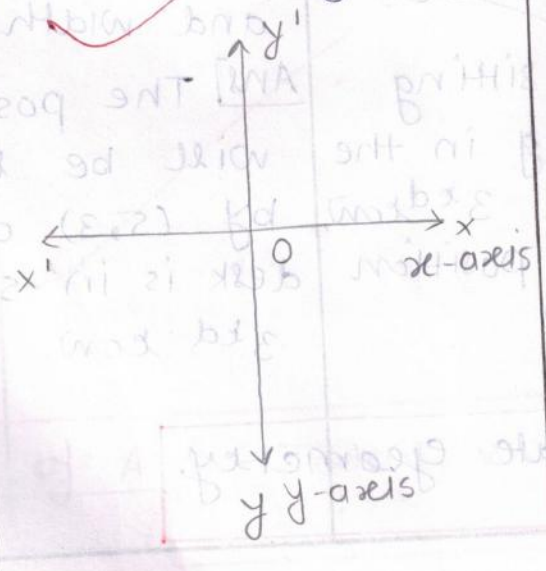
दिनांक Date 09/10/23

वर्ग Class IX th

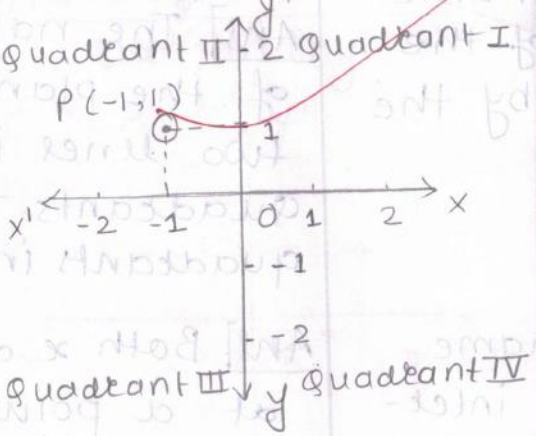
तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teachers ask some introductory questions Q1] How many informations do you need to represent a dot? Q2] How will you describe the position of table lamp on your study table? Q3] If you are sitting on the desk lying in the 5th column and 3rd row, how will your position be represented?	Students give appropriate answers to the asked questions Ans] We need two independant informations to represent the position of a dot. Ans] We will describe the position of table lamp with the help of length and width to the position. Ans] The position of desk will be represented by (5, 3) as the position of desk is in 5th column and 3rd row.
learn co-ordinate geometry.	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Cartesian system 1] x-axis x'x The horizontal line is called x-axis. 2] y-axis y'y The vertical line is called y-axis 3] Origin O The point where x and y axis cross is called origin. 4] Negative directions ox and oy 5] Positive directions ox' and oy'  	1] knowledge students are able to know about cartesian plane. 2] Understanding students are able to understand positions of a point on the graph paper 3] Application students are able to apply the knowledge to plot points on the graph paper.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask questions related to the topic	students give appropriate answers to the asked questions.
Q1] The concept of co-ordinate geometry was mainly developed by which mathematician?	Ans] The concept of coordi geometry was developed French philosopher and mathematician Rene Descartes.
Q2] What is the name of horizontal and vertical lines drawn to determine the position of any point in the cartesian plane?	Ans] In the cartesian plane, horizontal line called x-axis and vertical line is called y-axis.
Q3] What is the name of each part of the plane formed by the two lines?	Ans] The name of the par of the plane formed by two lines is called quadrants. There are fou quadrants in cartesian pl
Q4] What is the name of the point of intersection of x and y axis?	Ans] Both x and y interse at a point called orig co-ordinates of origin are O(0,0).

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask questions related to the topic	students give appropriate answers to the asked questions.
Q.1] To locate the position of an object in a plane, what do we need?	Ans] To determine position of an object in a plane, we require two perpendicular lines, one horizontal and one vertical.
Q.2] What are the plane and intersecting lines called?	Ans] The plane is called as cartesian plane and the lines are called co-ordinate axes. x-axis and y-axis
Q.3] Define x-coordinate.	Ans] The distance of a point from the y-axis is called x-coordinate or abscissa.
Q.4] Define y-coordinate	Ans] The distance of the point from the x-axis is called y-coordinate or ordinate

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teachers ask questions related to the topic	Students give appropriate answers to the asked questions.
Q.1] If the abscissa of a point is x and the ordinate is y, then what are the co-ordinates of the point?	Ans] If the abscissa of a point is x and the ordinate is y, then the co-ordinates of point are (x, y)
Q.2] What are the co-ordinates of a point lying on x-axis?	Ans] The co-ordinates of a point lying on x-axis is $(x, 0)$
Q.3] What are the co-ordinates of a point lying on y-axis?	Ans] The co-ordinates of a point lying on y-axis is $(0, y)$
Q.4] What are signs of the four quadrant co-ordinates?	Ans] The signs of four quadrants are $(+,+)$, $(-,+)$, $(-,-)$, $(+,-)$ respectively.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time. *] To create the interest in the topic taught *] To understand the taught concept properly.

फलक सार

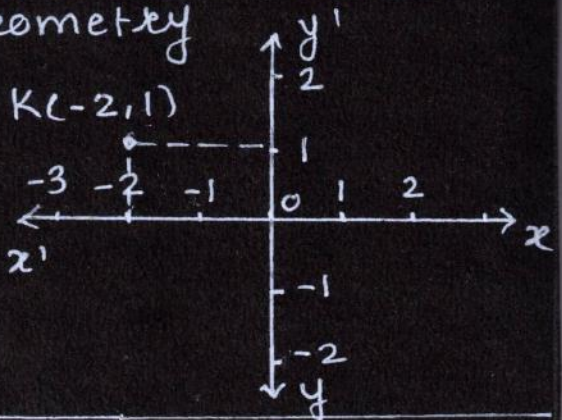
Black Board Summary

Day - Thursday
Date - 05/10/23

Class - IX
Sub - Mathematics
Topic - Co-ordinate geometry

On Roll - Present - Absent

Cartesian system
The co-ordinates of point K are (-2, 1)
x-co-ordinate = -2
y-coordinate = 1



Homework - Plot the following points on the graph paper - 1] M(-3, 4) 2] L(-5, -4)

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. Homework - 1] Plot the following points on the graph paper. M(-3, 4) L(-5, -4) S(3, -4)	Students write it down and solve it in their respective notebooks.

अभिप्राय (Remarks)

INTRODUCTION

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 7

विषय Subject Mathematics

शाळा School V. L. Convent

विषयांश Topic Euclid's geomet

पाठ साहित्य Material Aids chalk, duster, blackboard

पूर्व ज्ञान Previous Knowledge Lines, angles, pair

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

दिनांक Date 11/10/23

वर्ग Class IX th

तासिका अवधी Length of the Period 35 min

line segments.

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teachers ask some introductory questions	students give appropriate answers to the asked questions.
Q-1] What is the meaning of the word 'geometry'?	Ans] The word geometry comes from greek word 'geo' meaning 'earth' and 'metrein' meaning 'to measure'.
Q 2] What is a point?	Ans] A point is that which has no part. A mark of location is a point.
Q 3] What is a line?	Ans] A line is a breadthless length.
study Euclid's geometry.	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Euclid's Axioms 1] Things which are equal to the same thing are equal to one another. 2] If equals are added to equals, the wholes are equals. 3] If equals are subtracted from equals, the remainders are equal. 4] Things which coincide with one another are equal to one another 5] The whole is always greater than the part.	1] Knowledge - students are able to know Euclid's Axioms and their importance. 2] Understanding students are able to understand Euclid's Axioms 3] Application - students are able to apply Euclid's Axioms to solve various examples.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
Q-1] What are Axioms?	Ans] Common notations in Mathematics which are specifically used throughout the whole Mathematics are called Axioms.
Q-2] What is a plane/ What is a surface?	Ans] A surface is that which has length and breadth only.
Q-3] What are ends of a line segment?	Ans] Ends of a line segment are points.
Q-4] How many dimensions does the following have? 1] Solid 2] Surface	Ans] A solid has three dimensions while a surface has two dimensions.

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

ष्टीकरणे Specification)	अध्ययनानुभव (Learning Experience)	
	शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
dge- are know es and ance. tanding are nd es. on- are apply s to ions	Teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
	1] What are postulates?	Ans] Common notations in mathematics which are specifically used in geometry are called postulates.
	2] What are parallel lines?	Ans] Lines which never intersect each other and are always at a constant distance from each other are called parallel lines.
	3] What are perpendicular lines?	Ans] Lines which intersect each other at right angles are called perpendicular lines.
	4] What is radius of a circle?	Ans] A line from any point on the circumference of the circle to the centre of circle is called radius of a circle.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Euclid's Axioms 2] Euclid's Postulates	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students. *] To test the knowledge gained by students regarding Euclid's geometry

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
Q.1] What are universal truths in mathematics?	Ans] Euclid assumed certain properties which were not to be proved. These assumptions are called universal truths.
Q.2] What is Euclid's geometry?	Ans] Euclidean geometry is the study of plane and solid figures on the basis of axioms and theorems employed by Euclid.
Q.3] What is an infinity point?	Ans] An ideal mathematical point in projective geometry that preserves the magnitudes of all angles is an infinity point
Q.4] Who was Alexandrian?	Ans] Alexandrian was a greek mathematician and engineer who was active in his native city of Alexandria, Roman Egypt.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time *] To revise the topic taught *] To create the interest in the topic taught

फलक सार

Black Board Summary

Day - Monday
Date - 09/10/23

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

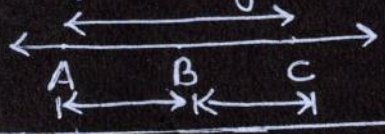
On Roll -
Present -
Absent -

Euclid's Axioms -

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

Euclid's Postulates -

A terminated line can be produced indefinately



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

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher gives homework written on the blackboard. Homework - If A, B, C are three points on a line and B lies between A and C, prove that AB + BC = AC	Students write it down and solve it in their respective notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 8

विषय Subject Mathematics

शाळा School V.L. convent

विषयांश Topic Lines and Angles

पाठ साहित्य Material Aids chalk, duster, blackboard

पूर्व ज्ञान Previous Knowledge Points, Parallel

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Angles 2] Linear pair of angles 3] Parallel lines and intersecting lines. 4] Parallel lines and transversal	*] To enable students to know various types of lines and angles *] To enable students to know concept of parallel lines *] To enable students to know the concept of transversal.

Statement of Aim - Today, we are going

दिनांक Date 13/10/23

वर्ग Class IX

तासिका अवधी Length of the Period 35 min

Types of angles

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions 1] What is a line and what is a line segment? 2] What are collinear points? 3] What is an angle?	Students give appropriate answers to the asked questions. Ans] A breadthless length is called a line. If a line has two end points then it is called a line segment. Ans] If three or more points lie on a straight line are called collinear points. Ans] When two rays originate from same endpoint, angle is formed
to study about Lines and Angles.	

दिनांक Date 13/10/23

वर्ग Class IX

es, types of angles

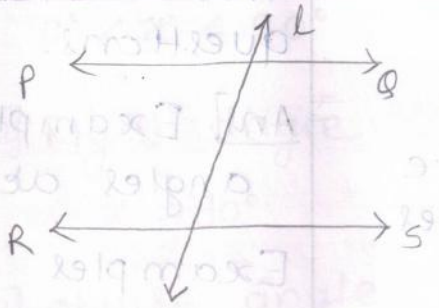
तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions 1] What is a line and what is a line segment? 2] What are collinear points? 3] What is an angle?	students give appropriate answers to the asked questions. Ans] A breadthless length is called a line. If a line has two end points then it is called a line segment. Ans] If three or more points lie on a straight line are called collinear points. Ans] When two rays originate from same endpoint, angle is formed
e study about Lines	and Angles.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	**Types of Angles** 1] Acute angle $0° < x < 90°$ 2] Right angle $x = 90°$ 3] obtuse angle $90° < x < 180°$ 4] Straight angle $x = 180°$ 5] Reflex angle $180° < x < 360°$ **Lineat pair of Angles** If sum of two adjacent angles is equal to 180°, then the angles make a lineat pair $\angle a + \angle b = 180°$ $\therefore \angle a$ and $\angle b$ make a lineat pair	1] Knowledge - students are able to know types and details of angles. 2] Understanding students are able to understand lineat pair of angles. 3] Application - students are able to apply types of angles to solve varions examples

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q.1] What are two examples of obtuse and reflex angles.	Ans] Examples of obtuse angles are 112° and 177° Examples of reflex angles are 210° and 300°
Q.2] Find the measure of angle that is supplementary to 137°?	Ans] let x be the angle needed $x + 137° = 180°$ $x = 180° - 137°$ $x = 43°$
Q.3] What is the measure of a complete angle?	Ans] The measure of a complete angle is 360°
Q.4] If $3x + 24°$ and $5x - 16°$ are congruent then find the value of x.	Ans] $3x + 24° = 5x - 16°$ $24° + 16° = 5x - 3x$ $2x = 40°$ $x = \frac{40°}{2}$ $x = 20°$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification
	Parallel lines and a transversal  Any line which intersect two or more parallel lines is called a transversal. 1] Pair of corresponding angles are equal 2] Pair of alternate angles are equal. 3] Pair of alternate exterior and interior angles are equal. 4] Co-interior angles are supplimentary.	1] Knowledge - students are able to know about parallel lines and transversal. 2] Understandin students are able to understand angles formed by parallel lines and transversa 3] Application - students are able to apply the knowledge to solve various examples.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic	Students give appropriate answers to the asked questions.
Q1] What are parallel lines?	Ans] Two lines which do not intersect each other and are always at a constant distance from each other are called parallel lines.
Q2] What are intersecting lines?	Ans] Two lines which are not parallel but intersect each other in a common point are called intersecting lines.
Q3] What are perpendicular lines?	Ans] When two lines meet or intersect at an angle of 90°, then they are perpendicular to each other.
Q4] What are the characteristics of alternate angles?	Ans] The alternate interior angles are always equal.

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] What is a transversal?	Ans] Any line which intersects two or more parallel lines is called a transversal.
Q2] Three angles at a point are 135°, 75° and x. Find the value of x.	Ans] Sum of angles at a point is 360° $135° + 75° + x = 360°$ $210° + x = 360°$ $x = 360° - 210°$ $x = 150°$
Q3] Define line.	Ans] A line is a figure in geometry, which has only length and no width in a two-dimensional plane and extends indefinately.
Q4] What are corresponding angles?	Ans] The angles formed when a transversal intersects any two parallel lines are called corresponding angles.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		★ To utilize the free time ★ To revise the topic taught. ★ To create interest in the topic

फलक सार

Black Board Summary

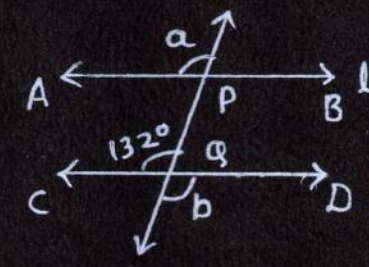
Day - Wednesday
Date - 11/10/23

Class - IX
Sub - Mathematics
Topic - Lines and Angles

On Roll -
Present -
Absent -

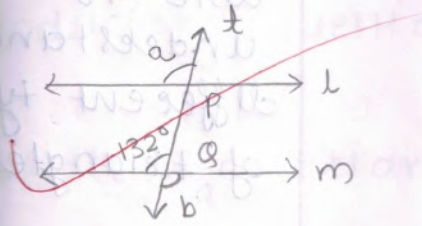
Parallel lines and a transversal

AB || CD i.e. l || m and line t is a transversal



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

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher gives homework written on the blackboard. Homework - In the figure $l \parallel m$ and line t intersect lines l and m at P and Q. Find - '2a+b'  	Students write it down and solve it in their respective notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 9

विषय Subject Mathematics

शाळा School V.L. Convent

विषयांश Topic Triangles - Congru

पाठ साहित्य Material Aids Chalk, blackboard, duster

पूर्व ज्ञान Previous Knowledge Types of triangles

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

दिनांक Date 17/10/23

वर्ग Class X

तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions.
What is a triangle?	Ans] A polygon which has three sides and three angles is called triangle.
What is an equilateral triangle?	Ans] The triangle whose three sides are of equal length is called equilateral triangle.
What is the sum of three angles of a triangle?	Ans] Sum of three angles of a triangle is always 180°
Study the topic Triangles.	

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
Q.1] What are the types of triangles on the basis of angles?	Ans] Three types of triangles on the basis of angles are i] Acute angled triangle ii] Right angled triangle iii] obtuse angled triangle
Q.2] What are the types of triangles on the basis of sides?	Ans] Three types of triangles on the basis of sides are i] Equilateral triangle ii] Isosceles triangle iii] Scalene triangle.
Q.3] Identify the shape of triangle if in $\triangle PQR$, $\angle P = \angle Q + \angle R$.	Ans] By using angle sum property, $\angle P + \angle Q + \angle R = 180°$ $\angle P + \angle P = 180°$ $2\angle P = 180°$ $\angle P = 180°/2 = 90°$ $\therefore \triangle PQR$ is right angled $\triangle$
Q.4] In $\triangle PQR$, $PQ = PR$ and $\angle Q = 70°$, Find P.	Ans] In $\triangle PQR$, $PQ = PR$ $\therefore \angle R = \angle Q$ $\angle P + \angle Q + \angle R = 180°$ $\angle P + 70° + 70° = 180°$ $\angle P + 140° = 180°$ $\angle P = 180° - 140°$ $\angle P = 40°$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Congruence in Triangles -	1] Knowledge - students are able to know congruence conditions in triangles.
	Two triangles are congruent if their corresponding sides and angles are equal.	
	There are five conditions to prove congruence in triangles.	
	1] SSS (side - side - side)	2] Understanding - students are able to understand corresponding parts of congruent triangles.
	2] SAS (side - Angle - side)	
	3] ASA (Angle - side - Angle)	3] Application - students are able to apply congruency criterion to solve various examples.
	4] AAS (Angle - Angle - side)	
	5] RHS (Right angle - hypotenuse - side)	

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic	students give appropriate answers to the asked questions.
2] What can you say about angles in an isosceles triangle?	Ans] In an isosceles triangle two sides are equal. The angles opposite to equal sides are equal to one another.
3] Find the three equalities of the corresponding angle if $\triangle ABC \cong \triangle PQR$ using SSS congruence rule	Ans] Using SSS congruency criterion, three equalities are $\angle A = \angle P$, $\angle B = \angle Q$, $\angle C = \angle R$
3] Determine the longest side in $\triangle PQR$ if $\angle Q = 90°$	Ans] If $\angle Q = 90°$, then side opposite to $\angle Q$ is PR which is hypotenuse. ∴ The longest side of $\triangle PQR$ is PR.
4] Determine the measure of all the angles in an equilateral triangle.	Ans] let each angle of equilateral triangle be x $x + x + x = 180°$ $3x = 180°$ $x = 180°/3$ $x = 60°$ ∴ Each angle in equilateral triangle is 60°.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Types of Triangles → a] Acute angled b] Right angled c] obtuse angled → d] Equilateral e] Isosceles f] scalene 2] Congruence in Triangles → a] SSS b] SAS c] ASA d] AAS e] RHS	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students *] To test the knowledge gained by the students regarding Triangles

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
Q.1] What can you say about sum of any two sides of a triangle wrt third side?	Ans] The sum of any two sides of a triangle is always greater than the third side.
Q.2] If PQ = 6 cm, QR = 4cm and PR = 1.5 cm, is triangle PQR possible?	Ans] PQ = 6cm; QR = 4 cm; PR = 1.5 cm QR + PR = 4 + 1.5 = 5.5 cm which is less than PQ = 6 cm ∴ ΔPQR is not possible.
Q.3] What is the measure of each exterior angle of an equilateral triangle?	Ans] Exterior angle = 180 - interior angle = 180 - 60 = 120° ∴ Each exterior angle is 120°
Q.4] The sum of two angles of a triangle is equal to its third angle. Find the third angle.	Ans] In a triangle, 45° + 45° = 90° ∴ first angle = 45°/30° second angle = 45°/60° third angle = 90°

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		✱] To create interest in the taught topic ✱] To utilize the free time. ✱] To understand the taught concept properly

फलक सार

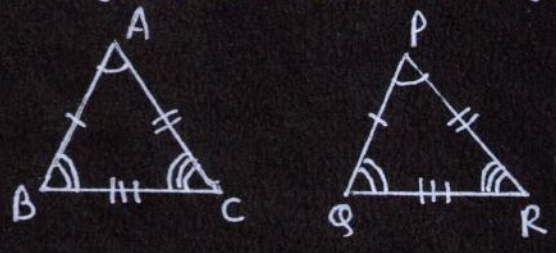
Black Board Summary

Day - Friday
Date - 13/10/23

Class - IX
Sub - Mathematics
Topic - Triangles

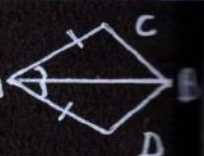
On roll -
Present -
Absent -

Congruence in Triangles

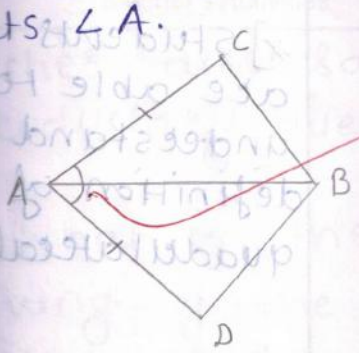


1] SSS - side-side-side
2] SAS - side-angle-side
3] ASA - angle-side-angle
4] AAS - angle-angle-side
5] RHS - Right angle - Hypotenuse - side

Homework - In quadrilateral ABCD AC = AD and AB bisects ∠A. Show that △ABC ≅ △ABD



अध्ययनानुभव (Learning Experience)

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

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 10

विषय Subject Mathematics

शाळा School V.L. Convent

विषयांश Topic Quadrilaterals

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Quadrilateral basic

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specificatio
INTRODUCTION	1] Types of quadrilaterals 2] Theorems on quadrilaterals	*] Students are able to understand definition of quadrilateral *] To enable students to know different types of quadrilaterals. *] To enable students to know theorems related to quadrilaterals.
Statement of Aim - Today, we		are going to

दिनांक
Date 20/10/23

(Theorems)

वर्ग
Class IX

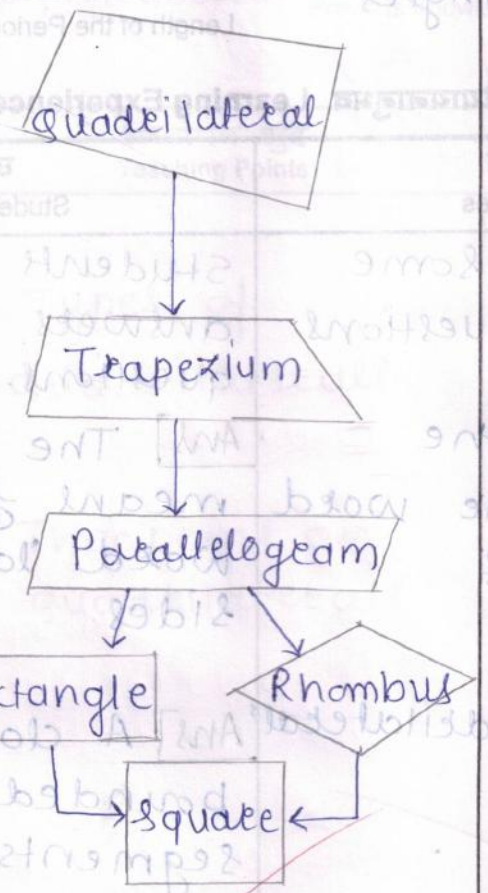
, diagonals, angles

तासिका अवधी
Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions.
Q.1] What is the meaning of the word quadrilateral?	Ans] The word 'quad' means four and the word 'lateral' means sides.
Q.2] Define 'quadrilateral'	Ans] A closed figure plane bounded by four line segments is called quadrilateral.
Q.3] Give some examples of quadrilaterals	Ans] Square, Rectangle, Rhombus, Kite are some examples of quadrilaterals.

Learn about quadrilaterals.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Family of Quadrilaterals  All the different types of quadrilaterals have different properties depending upon their sides, angles and diagonals	1] Knowledge Students are able to know the family of quadri-laterals. 2] Understanding Students are able to under-stand the classification of quadrilaterals. 3] Application Students are able to use classification to solve various example

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic	students give appropriate answers to the asked questions.
Q-1] What is the name of a quadrilateral whose opposite sides are equal and all the angles 90°?	Ans] Rectangle is a quadrilateral whose opposite sides are equal and all angles are 90°
Q-2] What are the special types of parallelogram?	Ans] The special types of the parallelogram are Square, Rectangle and Rhombus.
Q-3] A rhombus with right angle will represent which type of quadrilateral?	Ans] A rhombus with right angle will become a Square.
Q-4] What is the sum of all the interior angles of a quadrilateral?	Ans] The sum of interior angles of a quadrilateral is 360°

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q-1] The three angles of a quadrilateral are 60°, 30° and 110°. What is the fourth angle?	Ans] We know that, $\angle 1 + \angle 2 + \angle 3 + \angle 4 = 360°$ $60° + 30° + 110° + \angle 4 = 360°$ $\angle 4 = 360° - (60° + 30° + 110°)$ $= 100°$ ∴ Fourth angle is 100°
Q-2] In which quadrilateral, diagonals are equal and also bisect each other at 90°	Ans] In square, the diagonals are equal and bisect each other at 90°.
Q-3] Find all the angles of a 11^m, if one angle is 80°	Ans] In a 11^m, opposite angles are equal ∴ $\angle 1 = \angle 3 = 80°$ $\angle 2 = \angle 4 = 100°$
Q-4] Is it possible to draw a quadrilateral whose all angles are obtuse angles.	Ans] To have all obtuse angles, they will be greater than 360°. So, it is not possible for a quadrilateral to have all angles as obtuse angles.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Family of Quadrilaterals → a] Trapezium b] Parallelogram c] Rectangle d] Rhombus e] Square 2] Quadrilaterals - Theorems	*] To revise the topic taught by the teacher. *] To evaluate the topic understood by the students *] To test the knowledge gained by students regarding quadrilaterals

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic	students give appropriate answers to the asked questions.
Q 1] ABCD is a rhombus, If $\angle ACB = 30°$, then what is the measure of $\angle ADB$?	Ans] Angle $\angle A + \angle B + \angle C + \angle D = 360°$ $\angle C = \angle A = 30°$ let $\angle B = \angle D = x$ $30 + x + 30 + x = 360°$ $2x + 60 = 360°$ $x = 300/2 = 150°$
Q 2] If the diagonals of a quadrilateral bisect each other, what is the name of the quadrilateral?	Ans] If the diagonals of a quadrilateral bisect each other, the quadrilateral is parallelogram.
Q 3] A quadrilateral with one pair of opposite parallel sides is called?	Ans] A quadrilateral with one pair of opposite parallel sides is called Trapezium.
Q 4] What is the name of quadrilateral in which both the diagonals are completely contained within the figure?	Ans] A quadrilateral in which both the diagonals are completely contained within a figure is called convex quadrilateral

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To create interest in the topic taught *] To utilize the free time *] To understand the taught concept properly.

फलक सार

Black Board Summary

Day - Tuesday
Date - 17/10/23

Class - IX
Sub - Mathematics
Topic - Quadrilaterals

On Roll -
Present -
Absent -

Quadrilateral -

A closed figure plane bounded by four lines segment is called as quadrilateral.

Types of quadrilateral

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

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard Homework- 1] The angles of a quadrilateral are in the ratio 3:5:9:13. Find all the angles of quadrilateral. 2] If the diagonals of a parallelogram are equal, then prove that it is a rectangle.	students write it down and solve in their respective notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 11

विषय Subject Mathematics

शाळा School V.L. convent

विषयांश Topic Circles its parts

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Radius, Diameter,

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

दिनांक Date 25/10/23

वर्ग Class IX

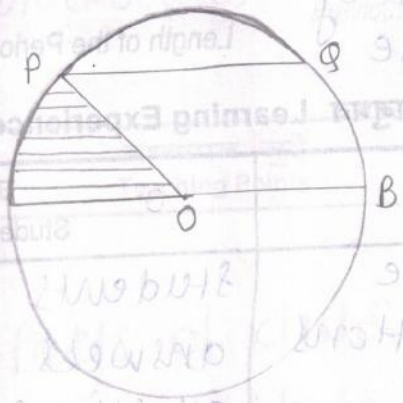
तासिका अवधी Length of the Period 35 min

Theorems

Circumference, Area of circle

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions.
Q 1] What is a circle?	Ans] Collection of all points in a plane which are at a fixed distance from centre is called circle.
Q 2] What are concentric circles?	Ans] Two or more circles having same centre but different radii are called concentric circles.
Q 3] Who invented circle?	Ans] The first theorems relating to circles are attributed to Thales around 650 BC.
to study circles.	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Parts of circle  1] centre - O 2] Radius - OA, OB 3] Diameter - AB 4] chord - PQ 5] Sector - AOP 6] minor arc - APQ 7] Major arc - QBA 8] Segment - PQ	1] Knowledge Students are able to know about various parts of a circle and their relationship with each other. 2] Understanding Students are able to understand parts of circle. 3] Application Students are able to apply knowledge of parts of circle to solve various examples.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic Q.1] If the radius of a circle is 2cm, what is its diameter?	students give appropriate answers to the asked questions. Ans] If the radius of a circle is 2cm, its diameter is 4cm.
Q.2] What is the longest chord of a circle?	Ans] Diameter is the longest chord of a circle.
Q.3] How many lines of symmetry does a circle have?	Ans] A circle has infinite lines of symmetry.
Q.4] What is the circumference of a circle if the radius of the circle is 7cm?	Ans] The circumference of a circle is $2\pi r$ $C = 2 \times \frac{22}{7} \times 7$ $= 44\,cm$ ∴ circumference of circle is 44 cm.

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

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

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

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q2] What can you say about angles subtended by equal chords at the centre?	Ans] Equal chords of the ~~sub~~ congruent circles subtend equal angles at the centers.
Q 2] If there are two seperate circles drawn apart from each other, how many common points do they have?	Ans] If there are two seperate circles drawn apart from each other, then they have no common points in them.
Q 3] What is the measure of the angle subtended by the diameter of a circle?	Ans] The angle subtended by a diameter at the centre is 180°.
Q 4] If AB = 12 cm, BC = 16 cm and AB is perpendicular to BC, then the radius of circle passing through points A, B and C is?	Ans] AB = 12 cm BC = 16 cm $AC^2 = BC^2 + AB^2$ $= 12^2 + 16^2 = 144 + 256$ $= 400$ $AC = 20$ cm $\therefore$ diameter = 20 cm $\therefore$ radius of circle is 10 cm

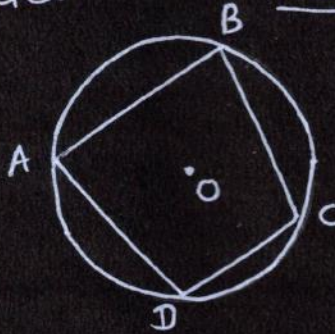
पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		* To utilize the free time * To create interest in the topic taught * To understand the taught concept properly

फलक सार
Black Board Summary

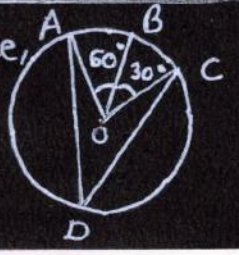
Day - Friday
Date - 20/10/23
Class - IX
Sub - Mathematics
Topic - circles
On Roll -
Present -
Absent -

Cyclic quadrilateral

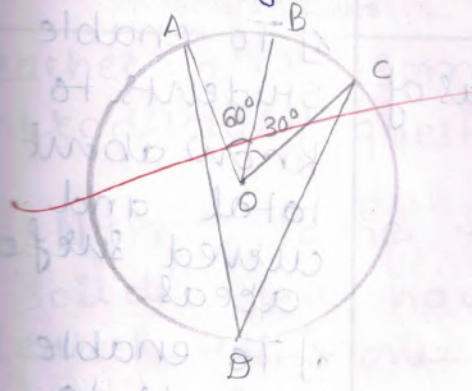
A quadrilateral which has its all four vertices lying on a circle is called cyclic quadrilateral.



Homework - In the given figure, find the value of ∠ADC



अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher gives homework written on the blackboard. Homework- 1. In the given figure, the value of $\angle ADC$ is-  	Students write it down and solve it in their respective notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 12

विषय Subject Mathematics

शाळा School V.L.convent

विषयांश Topic Surface area of

पाठ साहित्य Material Aids chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Area of rectangle

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

दिनांक Date 27/10/23

= cube, cuboid, cone, sphere

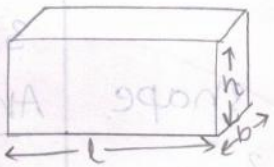
वर्ग Class IX

= cube and circle

तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions.
Q-1] Name some 3D solids you have learnt till now?	Ans] Cube, cuboid, cone, sphere, hemisphere and cylinder are some 3D solids.
Q-2] What is the shape of your book?	Ans] Our book is cuboid shaped.
Q-3] How do you calculate how much paper you need to cover your textbook?	Ans] We need to find areas of two faces of textbook and one face of the binding side and add them.
learn about surface	areas of solids.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Surface area of 1] cube  TSA = 6 × area of each face = 6 × (a × a) = $6a^2$ unit^2 or sq. units TSA of cube = $6a^2$ 2] cuboid  TSA = 2 × area of face1 + 2 × area of face2 + 2 × area of face3 = 2 × lb + 2 × bh + 2 × lh = 2 (lb + bh + lh) sq. units or unit^2 TSA of cuboid = 2 (lb + bh + lh)	1] Knowledge Students are able to know about surface areas of cube and cuboid 2] Understanding students are able to understand how surface areas of cube and cuboid are calculated 3] Application- students are able to apply surface area formula to solve various example

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
Q.1] What is surface area?	Ans] The space occupied by a two diamensional flat surface is called the surface area.
Q.2] How many types of areas surface are there?	Ans] There are two types of surface areas 1] Total surface area 2] curved surface area
Q.3] How do you calculate total surface areas of a cube?	Ans] The side of a cube is a units. So its total surface area is equal to $6a^2$ unit^2
Q.4] How do you calculate total surface area of cuboid?	Ans] A cuboid has length, breadth and height. So, its total surface area is $2(lb + bh + lh)$ unit^2

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Surface area of 1] Cone  TSA = Area of curved surface + area of base $= \frac{1}{2} \times l \times 2\pi r + \pi r^2$ $= \pi r l + \pi r^2$ $= \pi r (l + r)$ 2] Sphere  TSA = 4 x area of a circle with radius r $= 4 \times \pi r^2$ $= 4\pi r^2$ TSA $= 4\pi r^2$	1] Knowledge - students are able to know about surface area of cone and sphere 2] Understanding students are able to understand how surface areas of cone and sphere are calculated. 3] Application - students are able to apply surface area formulas to solve examples.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
Q-1] Calculate total surface area of a cube having side 5cm.	Ans] TSA of cube $= 6a^2$ $= 6 \times 5 \times 5$ $= 6 \times 25$ $= 150\ cm^2$ ∴ Total surface area of cube is $150\ cm^2$
Q-2] Calculate total surface area of a cuboid whose length is 2cm, breadth is 1cm and height is 3cm.	Ans] TSA of cuboid $= 2(lb+bh+lh)$ $= 2(2\times1 + 1\times3 + 2\times3)$ $= 2(2+3+6) = 2 \times 11$ $= 22\ cm^2$ ∴ Total surface area of cuboid is $22\ cm^2$
Q-3] How do you calculate total surface areas of cone?	Ans] For a cone having radius 'r' and slanting height 'l', total surface area is calculated by formula $\pi r(l+r)$
Q-4] How do you calculate total surface area of a sphere?	Ans] For a sphere having radius r, total surface area is calculated by formula $4\pi r^2$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	Surface areas of 1] cube - $6a^2$ 2] cuboid $2(lb+bh+lh)$ 3] cone - $= \pi r(l+r)$ 4] sphere $4\pi r^2$	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by the students. *] To test the concepts understood by the students regarding surface areas of cube, cuboid cone, sphere.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher asks some introductory questions. Q.1] Find the total surface area of a cone whose slant height is 10 cm and base radius is 7 cm. Q.2] Find the surface area of a sphere of radius 7 cm. Q.3] Find the total surface area of a cuboid having equal length, breadth & height. Q.4] What is the total surface area of a hemisphere?	Students give appropriate answers to the asked questions. Ans] TSA of cone $= \pi r(l+r)$ $= \frac{22}{7} \times 7 \times (10+7)$ $= 22 \times 17 = 374\ cm^2$ ∴ Total surface area of the given cone is $374\ cm^2$ Ans] TSA of sphere $= 4\pi r^2$ $= 4 \times \frac{22}{7} \times 7 \times 7$ $= 4 \times 22 \times 7 = 88 \times 7 = 616$ Total surface area of the given sphere is $616\ cm^2$ Ans] let length, breadth and height of the given cuboid be x cm TSA $= 2(x^2+x^2+x^2) = 2 \times 3x^2$ $= 6x^2$ unit^2 Ans] Total surface area of a sphere is $4\pi r^2$ ∴ For a hemisphere it is $2\pi r^2$ Adding base area to it πr^2 ∴ TSA of hemisphere $= 2\pi r^2 + \pi r^2$ $= 3\pi r^2$

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time. *] To create interest in the topic taught *] To understand the taught concept properly.

फलक सार

Black Board Summary

Day - Wednesday
Date - 25/10/23

Class - IX
Sub - Mathematics
Topic - surface Areas of solids

On Roll -
Present -
Absent -

Total surface areas of solids -

1] Cube - $6a^2$

2] Cuboid - $2(lb+bh+lh)$

3] Cone - $\pi r(l+r)$

4] Sphere - $4\pi r^2$

Homework - 1] Find the total surface area of a cone whose slant height is 5 cm and base radius is 7 cm

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher gives homework written on the blackboard. Homework- Q.1] Find total surface area of a cone whose slant height is 5 cm and base radius is 7 cm. Q.2] Find the surface area of a hemisphere of radius 7 cm.	Students write it down and solve in their notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 13

विषय Subject Mathematics

शाळा School V. L. convent

विषयांश Topic Volume of cube,

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Volume, capacity

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	Volume of 1] cube 2] cuboid 3] cone 4] sphere	*] To enable students to know about volume of solids *] To enable students to understand volume *] To develop thinking, reasoning and imagination among students.

Statement of Aim - Today, we are going

दिनांक Date 31/10/23

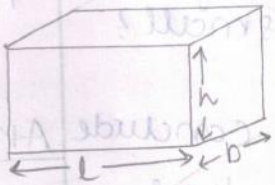
cid, cone and sphere वर्ग Class IX th

containers तासिका अवधी Length of the Period 35 min

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
The teacher asks some introductory questions.	Students give appropriate answers to the asked questions.
Q-1] If you go to buy a juice bottle, which bottle do you prefer big or small?	Ans] We do prefer big bottle of juice, because it contains more juice
Q-2] How do you conclude that big bottle has more juice?	Ans] We prefer big bottle of juice because big bottle has more volume.
Q-3] What is volume in your words?	Ans] Volume is the amount of space occupied by any three-dimensional solid.

to learn about volume of 3D shapes

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Volume of 1] cube  Volume of cube = side × side × side = a × a × a = a^3 cu. units or unit^3 2] cuboid  Volume of cuboid = length × breadth × height = l × b × h cu. units or unit^3	1] Knowledge - students are able to know about volumes of cube and cuboid 2] Understanding students are able to understand how formulas of volume of cube and cuboid are derived. 3] Application - students are able to apply formulas of volume to solve various examples

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
Q1] Find the volume of a cuboid whose length = 5cm, width = 2cm and height = 3cm.	Ans] $l = 5cm$; $b = 2cm$; $h = 3cm$ Volume of cuboid $= l \times b \times h$ $= 5 \times 2 \times 3 = 30$ cu·cm. ∴ Volume of the given cuboid is 30 cu·cm.
Q2] Find the volume of a cube whose side is 10 cm.	Ans] $a = 10cm$. Volume of a cube $= a \times a \times a$ $= 10 \times 10 \times 10$ $= 1000$ cu·cm. ∴ Volume of the given cube is 1000 cu·cm
Q3] How do we define volume of cuboid?	Ans] Volume of cuboid is the amount of space occupied by the walls of cuboid in a 3D space.
Q4] Does the order of cuboid matters to calculate the volume?	Ans] No, the order of cuboid does not matter if it is kept vertically or horizontally. The volume of the shape remains same.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Volume of 3] Cone  For a cone with perpendicular height h and base radius r, Volume of cone $= \frac{1}{3} \pi r^2 h$ cu·units or unit^3 4] Sphere  For a sphere with radius r, Volume of sphere $= \frac{4}{3} \pi r^3$ cu·units or unit^3	1] Knowledge- students are able to know about volume of cone and sphere. 2] Understanding students are able to understand formula of volume of cone and sphere 3] Application students are able to apply formulas of volume to solve various examples

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
E-1] Find the volume of a sphere of radius 11.2 cm.	Ans] $r = 11.2$ cm volume of sphere $= \frac{4}{3}\pi r^3$ $= \frac{4}{3} \times \frac{22}{7} \times 11.2 \times 11.2 \times 11.2$ $= 5887.32\ cm^3$ ∴ volume of given sphere is $5887.32\ cm^3$
E-2] What is volume of a semisphere?	Ans] volume of a semisphere is half of the volume of a sphere. ∴ volume of semisphere $= \frac{2}{3}\pi r^3$
E-3] Find the volume of a cone whose radius is 6 cm and height is 7 cm.	Ans] volume of the given cone $= \frac{1}{3}\pi r^2 h$ $= \frac{1}{3} \times \frac{22}{7} \times 6 \times 6 \times 7$ $= 264\ cm^3$
E-4] The height and the slant height of a cone are 21 cm and 28 cm. Find the volume of the cone.	Ans] $l = 28$ cm $\quad h = 21$ cm $r = \sqrt{l^2 - h^2} = \sqrt{28^2 - 21^2}$ $= 7\sqrt{7}$ cm ∴ volume of cone $= \frac{1}{3}\pi r^2 h$ $= \frac{1}{3} \times \frac{22}{7} \times 7\sqrt{7} \times 7\sqrt{7} \times 21$ $= 7546\ cm^3$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	Volume of 1] cube a^3 2] cuboid $l \times b \times h$ 3] cone $\frac{1}{3} \pi r^2 h$ 4] sphere $\frac{4}{3} \pi r^3$	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by students. *] To test the concept understood by the students regarding volume of 3D shapes.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] If two cubes of side 6 cm are joined face to face, then find the volume of the resulting cuboid.	Ans] If we join two cubes $l = 6+6 = 12$ cm; $b = 6$cm and $h = 6$cm ∴ Volume of resulting cuboid $= l \times b \times h = 12 \times 6 \times 6 = 432 cm^3$
Q2] Find the ratio of the total surface area and lateral surface area of a cube.	Ans] TSA of cube $= 6 side^2$ LSA of cube $= 4 side^2$ Ratio $= \frac{6\ side^2}{4\ side^2} = \frac{3}{2}$ 3:2
Q3] Find the volume of a cone whose radius is 3.5 cm and height is 12cm.	Ans] Volume of cone $= \frac{1}{3}\pi r^2 h$ $= \frac{1}{3} \times \frac{22}{7} \times 3.5 \times 3.5 \times 12$ $= 154\ cm^3$
Q4] A hemispherical bowl has a radius of 3.5 cm. How much volume of water it would contain?	Ans] Volume of hemispherical bowl $= \frac{2}{3}\pi r^3$ $= \frac{2}{3} \times \frac{22}{7} \times 3.5 \times 3.5 \times 3.5$ $= 89.8\ cm^3$ ∴ volume of the given bowl is $89.8\ cm^3$

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		✱] To utilize the free time. ✱] To create the interest in the topic taught. ✱] To understand the taught concept properly.

फलक सार

Black Board Summary

Day - Friday
Date - 27/10/23

Class - IX
Sub - Mathematics
Topic - Volume of solids

on roll -
Present -
Absent -

Volumes of solids

1] Cube $= a^3$

2] Cuboid $= l \times b \times h$

3] Sphere $= \frac{4}{3} \pi r^3$

4] hemisphere $= \frac{2}{3} \pi r^3$

5] cylinder $= \pi r^2 h$

6] Cone $= \frac{1}{3} \pi r^2 h$

Homework - Find the volume of a sphere whose radius is i] 7 cm ii] 0.63 m

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
gives homework on blackboard Work - The height of a cone is ... If its volume is ... find the diameter ... the volume ... sphere whose ... is - ii] 0.63 m.	students write it down and solve in their notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 14

विषय Subject Mathematics

शाळा School V.L. convent

विषयांश Topic Square and Square

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Multiplication

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] square 2] square roots	*] To enable students to know about square and square roots. *] To enable students to understand practical applications of square and square roots *] To develop thinking, reasoning and imagination among students.
Statement of Aim - Today, we are going to		

दिनांक Date 20/11/23

वर्ग Class VIII th

Roots

तासिका अवधी Length of the Period 35 mins

अध्ययनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions
Q1] How do you calculate area of a square?	Ans] Area of square is side x side where side means the length of a side.
Q2] What is the square of 10?	Ans] The square of 10 is 10 x 10 = 100.
Q3] What is the square root of 100?	Ans] 100 can be expressed as product of 10 x 10. So, square root of 100 is 10.
study about square and square roots	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Square If a natural number m can be expressed as n^2 where n is also a natural numbe, then m is a square number.	1] knowledge - students are able to know about square numbers. 2] Understanding students are able to understand how squares are calculated 3] Application - students are able to apply calculation of squares to real life situations.

Number	Square
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81
10	100
11	121
12	144
13	169
14	196
15	225

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] What is a square of a number?	Ans] A square is a number that is obtained by multiplying a number by itself.
Q2] Give some examples of squares.	Ans] The squares of 1, 2 and 3 are 1, 4 and 9 respectively.
Q3] What are triangular numbers?	Ans] Triangular numbers are the numbers whose dot patterns can be arranged as triangles.
Q4] Find the square of 23 without actual multiplication.	Ans] $23 = 20 + 3$ $23^2 = (20+3)^2$ $= 20^2 + 2 \times 20 \times 3 + 3^2$ $= 400 + 120 + 9$ $= 529$ ∴ Square of 23 is 529.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Square Roots - Square root is an inverse operation of square. Positive square root of a number is denoted by the symbol $\sqrt{}$.	1] knowledge - students are able to know about square roots.

Number	square root
1	$\sqrt{1} = 1$
4	$\sqrt{4} = 2$
9	$\sqrt{9} = 3$
16	$\sqrt{16} = 4$
25	$\sqrt{25} = 5$
36	$\sqrt{36} = 6$
49	$\sqrt{49} = 7$
64	$\sqrt{64} = 8$
81	$\sqrt{81} = 9$
100	$\sqrt{100} = 10$
121	$\sqrt{121} = 11$
144	$\sqrt{144} = 12$
169	$\sqrt{169} = 13$

2] Understanding - students are able to understand to calculate square roots

3] Application - students are able to apply the learned concept in real life situations.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic	Students give appropriate answers to the asked questions.
[1] What is a square root?	Ans] A square root is the inverse operation of squaring. It is the number that when multiplied by it self gives the original number
[2] Give some examples of square roots.	Ans] Some common examples of square roots are $\sqrt{1}=1$, $\sqrt{4}=2$; $\sqrt{9}=3$ and $\sqrt{16}=4$
[3] Find the least number that must be subtracted from 5607 to get a perfect square	Ans] 74^2 is less than 5607 by 131. So, $5607-131=5476$ $\sqrt{5476}=74$ $\therefore$ 131 should be subtracted
[4] Find the square root of 64 by prime factorisation.	Ans] 2 | 64 2 | 32 2 | 16 2 | 8 2 | 4 2 | 2 | 1 $64=2\times2\times2\times2\times2\times2$ $\sqrt{64}=2\times2\times2=8$ $\therefore$ 8 is the square root of 64.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Square 2] Square roots 3] Triangular numbers 4] Pythagorean triplet 5] Prime factorisation 6] Applications of square and square roots	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by students. *] To test the concept understood by the students regarding square and square roots

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
Q.1] What are practical applications of squares?	Ans] The practical applications of squares are measuring area and calculating distances.
Q.2] What are the practical applications of square roots?	Ans] The practical applications of square roots are calculating side lengths of squares and finding distances.
Q.3] Square numbers end with which digits?	Ans] All square numbers can only have 0, 1, 4, 5, 6, 9 at its unit places.
Q.4] What is a pythagorean triplet?	Ans] For any natural number m, if $(2m)^2 + (m^2-1)^2 = (m^2+1)^2$ so, $2m$, m^2-1 and $m+1$ forms a pythagorean triplet. for ex - 6, 8 and 10 is a pythagorean triplet.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time. *] To create interest in the topic taught. *] To understand the taught concept properly.

फलक सार
Black Board Summary

Day - Tuesday
Date - 31/10/23

Class - IX
Sub - Mathematics
Topic - Square and square root

on roll -
Present -
Absent -

Squares

1	1
2	4
3	9
4	16

5	25
6	36
7	49
8	64

2	100
2	50
5	25
5	5
	1

$\sqrt{100} = 2 \times 5 = 10$

$100 = 2 \times 2 \times 5 \times 5$

Homework - Area of a square plot is $2304\ m^2$. Find the side of square plot.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework on blackboard Homework - 1. Area of a square is 2304 m^2. Find the side of square plot. 2. What will be the unit digit of the squares of the following numbers i) 272 ii) 799	Students write it down and solve it in their notebook.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 15

विषय Subject Mathematics

शाळा School V.L. Convent

विषयांश Topic Cube and cube

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Multiplication

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Cube 2] Cube Roots	*] To develop twinking, reasoning and imagination among students *] To enable students to understand the concept of cube and cube root *] To enable students to know about applications of cube and cube root
Statement of Aim- Today, we		are going to

दिनांक Date 22/11/23

वर्ग Class VIII th

Roots

Tables

तासिका अवधी Length of the Period 35 mins

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	students give appropriate answers to the asked questions.
Q-1] What is volume of a cube of side a units?	Ans] Volume of a cube is a^3 unit^3. or cu. units.
Q-2] What is the cube of 4^2.	Ans] The cube of 4 is $4 \times 4 \times 4 = 64$
Q-3] What is the cube root of 64?	Ans] The cube root of 64 is $4^3 = 64$ ie. 4.
study about cube and	cube roots

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	**Cubes** A perfect cube or cube number is obtained when a number is multiplied by taking it three times.	1] **Knowledge** students are able to know about cubes of the numbers. 2] **Understanding** students are able to understand how cubes of numbers are calculated. 3] **Application** students are able to apply knowledge of cubes to solve problems in real life situations.

Number	Cube
1	1
2	8
3	27
4	64
5	125
6	216
7	343
8	512
9	729
10	1000
11	1331
12	1728
13	2179
14	2744

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
I] What is cube of a number ?	Ans] The cube of a number is the number raised to the power of three.
II] Give an example of cube of a number?	Ans] The cube of 2 is $2 \times 2 \times 2 = 8$
III] What are the cubes of odd numbers and cubes of negative numbers ?	Ans] The cubes of odd numbers is odd and cubes of negative numbers is negative.
IV] Find the cubes of a] 3 b] 5 c] -2	Ans] The cubes of given numbers are a] $3^3 = 3 \times 3 \times 3 = 27$ b] $5^3 = 5 \times 5 \times 5 = 125$ c] $(-2)^3 = -2 \times -2 \times -2 = -8$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Cube Roots Cube root is the inverse operation of finding cube. The symbol $\sqrt[3]{}$ denotes cube root	1] Knowledge Students are able to know about cube roots of the numbers.

Numbers	Cube Roots
1	$\sqrt[3]{1} = 1$
8	$\sqrt[3]{8} = 2$
27	$\sqrt[3]{27} = 3$
64	$\sqrt[3]{64} = 4$
125	$\sqrt[3]{125} = 5$
216	$\sqrt[3]{216} = 6$
343	$\sqrt[3]{343} = 7$
512	$\sqrt[3]{512} = 8$
729	$\sqrt[3]{729} = 9$
1000	$\sqrt[3]{1000} = 10$

2] Understanding
Students are able to understand how cube roots of numbers are calculated.

3] Application
Students are able to apply knowledge of cube roots to solve problems in daily life situations.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] What is cube root of a number?	Ans] The cube root of a number is the number that when cubed gives the original numbe
Q2] Give an example of cube root.	Ans] The cube root of 8 is 2 because $2 \times 2 \times 2 = 8$
Q3] Which is the method to find cube root of a number?	Ans] The cube root of a number can be found out by factorization and method of estimation.
Q4] Find the cube root of 125 by prime factorisation.	Ans] $5 \mid 125$ $5 \mid 25$ $5 \mid 5$ 1 $125 = 5 \times 5 \times 5$ $\sqrt[3]{125} = 5$. 5 is the cube root of 125

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] cubes 2] cube roots 3] Factorisation 4] Estimation	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by students *] To test the concepts understood by the students regarding cube and cube roots

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] What is the real life application of cube?	Ans] Cutting a vegetable into square sided shapes or in the shape of dice.
Q2] What is a cube?	Ans] In terms of geometry, a cube is a three-dimensional square cut from something.
Q3] What is the real life application of cube roots?	Ans] Cube roots are used in carpentry, engineering, designing buildings, flooring and technology.
Q4] Is 243 a perfect cube?	Ans] $243 = \underline{3\times3\times3}\times3\times3\times3$ In the above factorisation 3×3 remains ungrouped in the triplets. $\therefore$ 243 is not a perfect cube.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time *] To create interest in the topic taught *] To understand the taught concept properly

फलक सार

Black Board Summary

Day - Wednesday
Date - 22/11/23

Class - IX
Sub - Mathematics
Topic - Cube and cube roots

On roll -
Present -
Absent -

1	1
2	8
3	27
4	64
5	125

6	216
7	343
8	512
9	729
10	1000

$\sqrt[3]{1000} = 10$

2	1000
2	500
2	250
5	125
5	25
5	5
	1

Homework - Ketaki makes a cuboid of sides 5 cm, 2 cm, 5 cm. How many such cuboids will she need to form a cube?

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
The teacher gives homework written on blackboard Homework - 1] Ketaki makes a cuboid of sides 5 cm, 2 cm, 5 cm. How many such cuboids will she need to form a cube? 2] Which of the following are perfect cubes? i] 400 ii] 9000	students write it down and solve it in their notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 16

विषय Subject Mathematics

शाला School V.L. convent

विषयांश Topic Direct and Inverse

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Multiplication, Di

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Direct Proportions. 2] Inverse Proportions	*] To develop thinking, reasoning and imagination among students. *] To enable students to understand direct and inverse propor *] To enable students to know about practical applications of proportions.
statement of Aim - Today, we		are going to

दिनांक Date 24/11/23

वर्ग Class VIII th

तासिका अवधी Length of the Period 35 mins

proportions and formation of ratios.

अध्ययनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	Students give appropriate answers to the asked questions
Q1] If you park your car at a parking where parking charges are ₹60 per hour. How much will you pay for two hours?	Ans] The charges of parking are ₹ 60 for one hour So, for two hours, charges will be 60 x 2 = ₹120
Q2] If you buy a pen, how can you explain the costing?	Ans] If we buy more pens, we need more money.
Q3] How can you explain number of workers and number of days?	Ans] The more number of workers will require less number of days to complete the work
Study about Direct and	Inverse Proportions.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	**Direct Proportion** When the relationship between two quantities is such that if we increase one, the other will also increase and if we decrease one, the other quantity will also decrease **Example** - The number of food items bought is directly proportional to the total money spent. **Formula** If $y \propto x$ $y = kx$ ... for a constant k	1] **Knowledge** - Students are able to know about direct proportion 2] **Understanding** students are able to understand how direct proportions are calculated 3] **Application** Students are able to apply formulas of direct proportion to various examples.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions about the topic.	Students give appropriate answers to the asked questions.
Q1] Explain direct proportion in terms of x and y.	Ans] In direct proportion, y increases as x increases and y decreases as x decreases.
Q2] If a man earns ₹ 805 per week, how much will he earn in 16 days.	Ans] 1 week = 7 days income per day = $\frac{805}{7}$ = ₹ 115 ∴ Income in 16 days = 115 × 16 = ₹ 1840
Q3] If two cardboard boxes occupy 500 cm^3 of space, then find the space occupied by one cardboard box?	Ans] 2 boxes occupy 500 cm^3 of space ∴ space for one box = 500/2 = 250 cm^3
Q4] How the graph of direct proportion is denoted?	Ans] The graph of direct proportion is a straight line with an upward slope.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	**Inverse Proportions** When two quantities are related to each other inversely i.e. when an increase in one quantity brings a decrease in other and vice versa then they are said to be in inverse proportion. **Example** - More number of workers will complete the given work in less number of days. **Formula** $y \propto \frac{1}{x}$ $y = k \times \frac{1}{x}$ $y = \frac{k}{x}$ for a constant k.	1] Knowledge - students are able to know about inverse proportion. 2] Understanding students are able to understand how inverse proportions are calculated 3] Application - students are able to apply formulas of inverse proport to solve various exam

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] Explain inverse proportion in terms of x and y	Ans] In inverse proportion y decreases as x increases and y increases as x decreases.
Q2] Suppose x and y are in inverse proportion. If $y = 12$ then $x = 4$. Find the value of y when $x = 8$.	Ans] $x \propto 1/y \Rightarrow x = \frac{k}{y}$ $4 = \frac{k}{12} \Rightarrow k = 48$ also $8 = \frac{48}{y} \Rightarrow y = 48/8$ $y = 6$.
Q3] If 35 men can do a work in 8 days, in how many days can 20 men complete the same work?	Ans] 1 man can do the work in 35×8 days $\therefore$ for 20 men $\frac{35 \times 8}{20}$ $= 14$ days will be required.
Q4] How the graph of Inverse proportion is denoted?	Ans] The graph of inverse proportion is usually a curve that bends towards the origin forming a shape of hyperbola.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	1] Direct proportion - Definition - Example - Formula 2] Inverse proportion - Definition - Example - Formula	*] To revise the topic taught in the class *] To evaluate the knowledge gained by students. *] To test the concept understood by the students regarding direct and inverse proportion.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
[Q1] Find the value of x if a and b are in inverse proportion a: 12, x b: 30, 5	[Ans] $a = \frac{k}{b} \Rightarrow k = ab$ $k = 12 \times 30 = 360$ $x = \frac{360}{5} = 72$
[Q2] If P is directly proportional to Q^2, then find a formula for P in terms of Q.	[Ans] As P is directly proportional to Q^2. $P \propto Q^2$ $P = kQ^2$ is the formula required.
[Q3] Give an example of direct proportion.	[Ans] The cost of a banana is 70p. As the number of bananas increases, so does the cost increases.
[Q4] Give an example of inverse proportion.	[Ans] It takes 1 worker 9 hours to dig a hole. As the number of workers increases, the number of hours to dig the same hole decreases.

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To revise the topic taught *] To utilize free the time *] To create interest in the topic taught

फलक सार
Black Board Summary

Day - Friday
Date - 24/11/23

Class - IX
Sub - Mathematics
Topic - Direct and Inverse Proportions

On Roll -
Present -
Absent -

Direct proportion	Inverse Proportion
$y \propto x$	$y \propto 1/x$
$y = kx$	$y = k/x$
where k is constant	where k is constant

Homework - An electric pole 14 m casts a shadow of 10 m. Find the height of a tree that casts a shadow of 15 m under same situation.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the board. Homework - An electric pole, 14 m casts a shadow 10 m. Find the height of a tree that casts shadow of 15 m under similar situations.	Students write it down and solve in their notebooks.

अभिप्राय (Remarks)

INTRODUCTION

पर्यवेक्षकांची सही
(Sign. of Supervisor)

पाठांक S.No. 17

विषय Subject Mathematics

शाळा School V.L. convent

विषयांश Topic Compairing Qua

पाठ साहित्य Material Aids Chalk, Blackboard, Duster

पूर्व ज्ञान Previous Knowledge Ratios, Percentag

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		*] To develop thinking, reasoning and imagination among students *] To enable students to understand quantities *] To enable students to know about how different quantities are compared.
statement of Aim - Today,		we are going

दिनांक Date 25/11/23

वर्ग Class VIII th

तासिका अवधी Length of the Period 35 mins

ary method

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	students give appropriate answers to the asked questions.
Q1] What is the use of ratios?	Ans] Ratios are very commonly used for comparing two or more quantities.
Q2] If in a picnic, 60% of the total number of students are girls. Find the number of girls if total students are 18.	Ans] let x be 60% of girls $\frac{60}{100} \times x = 18$ $x = \frac{18 \times 100}{60} = 30$ students.
Q3] If in a class, there are 18 girls and 12 boys, find the ratio of girls to boys.	Ans] The number of girls is 18 and those of boys is 12. Their ratio is 18/12 3:2 read as 3 is to 2.
to study about comparing quantities	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Ratio and Percentages A basket has two types of fruits, say 20 apples and 5 oranges. Then the ratio of number of oranges to apples is 5:20 or 1:4 There are 5 oranges out of 25 fruits % of oranges $= \frac{5}{25} \times 100 = 20\%$ % of oranges = 20% Similarly, % of apples = 80%	1] Knowledge students are able to know about ratio and percentage 2] Understanding students are able to understand how ratios and percentage are calculated 3] Application students are able to apply

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
[Q] Find the ratio of 50 paise to ₹ 5.	[Ans] since ₹ 1 = 100 p $\frac{50p}{₹5} = \frac{50}{5\times100} = \frac{50}{500} = \frac{1}{10}$ ∴ The required ratio is 1 : 10
[Q] 72% of 25 students are interested in maths. How many are not interested in maths?	[Ans] % of students who are not good in maths = 100 − 72 = 28% ∴ number of these students $\frac{28}{100} \times 25 = 7$ ∴ 7 students are not good in maths
[Q3] Find the ratio of 5 m to 10 km.	[Ans] since 10 km = 10000 m $\frac{5}{10000} = \frac{1}{2000}$ ∴ The required ratio is 1 : 2000
[Q4] Convert the ratio 3 : 4 to percentage.	[Ans] $\frac{3}{4} \times 100$ $= 3 \times 25 = 75\%$ ∴ The required percentage is 75%

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Discount : Discount is the reduction given on the marked price (MP) of the article. **Discount = MP − SP** **Profit** SP − CP = Profit **% Profit = $\frac{\text{Profit}}{CP} \times 100$** **Loss** Loss = CP − SP **% loss = $\frac{\text{loss}}{CP} \times 100$**	1] Knowledge Students are able to know about discount, profit and loss values 2] Understanding Students are able to understand about calculation of discount, profit and loss 3] Application Students are able to apply formulas of profit and in real life examples.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q1] An item marked at ₹ 840 is sold for ₹ 714. What is the discount and % discount?	Ans] Discount = MP − SP = 840 − 714 = ₹ 126 ∴ % discount = $\frac{126}{840} \times 100$ = 15%
Q2] Your bill in a shop is ₹ 580 and the shopkeeper gives 15% discount. What is the amount to be paid?	Ans] 15% of 580 = $\frac{15}{100} \times 580$ = ₹ 87 ∴ 580 − 87 = ₹ 493 ∴ ₹ 493 is the bill to be paid
Q3] By selling 100 books, a shopkeeper gains the SP of 20 books. What is his gain percentage?	Ans] Let SP of one book be ₹1 and SP of 100 books be ₹100 gain = SP of 20 books = ₹20 CP = SP − gain = 100 − 20 = ₹80 gain % = $\frac{20}{80} \times 100 = 25\%$
Q4] What is overhead expense?	Ans] Additional expenses on transportation, rent, repair are included in the original CP. CP = Original Price + overhead expenses.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Ratio and percentages 2] Discount 3] Profit 4] Loss	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by students. *] To test the concept understood by the students regarding comparing quantities.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	students give appropriate answers to the asked questions.
2.1] Find the ratio of speed of cycle 15 kmph to the speed of a scooter 30 kmph.	Ans] Ratio of speed of cycle to the speed of scooter $= \frac{15}{30} = \frac{1}{2} = 1:2$ ∴ The required ratio is 1:2
2.2] If the marked price of a book is ₹ 50 and ₹ 10 discount is given. What is % discount?	Ans] Discount % $= \frac{10}{50} \times 100$ $= 20\%$ ∴ percentage discount is 20%
2.3] If CP of a fridge is ₹ 10,500 and SP is ₹ 11,500, then find the profit.	Ans] CP = ₹ 10,500 SP = ₹ 11,500 Profit = 11500 − 10500 = ₹ 1000 ∴ The required profit is ₹ 1000
2.4] A student bought a bag for ₹ 350 and sold it for ₹ 400. Find the profit %.	Ans] CP = ₹ 350 SP = ₹ 400 profit = 400 − 350 = ₹ 50 % profit $= \frac{50}{350} \times 100$ $= 14.28\%$ ∴ The percentage profit is 14.28%

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To revise the topic taught *] To utilize the free time *] To create interest in the topic taught

फलक सार

Black Board Summary

Date - 25/11/23 Class - IX on roll -
Day - Friday Sub - Mathematics present -
Topic - Comparing quantities absent -

Discount = MP - SP

MP -- marked price

SP --- selling price

CP --- cost price

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

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

Homework - 1] Convert the ratio 2:3 to %

2] A shopkeeper bought two TV sets at ₹ [illegible] each. He sold one at a profit of 10% and [illegible] at a loss of 10%. Find overall profit or loss

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard Homework- Convert the ratio 2:3 to percentage. A shopkeeper bought TV sets at ₹10000 each. He sold one at a profit 10% and other at a loss of 10%. Find overall profit or loss.	Students write it down and solve it in their notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 18

विषय Subject Mathematics

शाला School V.L. convent

विषयांश Topic Linear Equation

पाठ साहित्य Material Aids Chalk, Duster, Blackboard

पूर्व ज्ञान Previous Knowledge Equalities, expr

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION	1] Linear equation in one variable 2] Solution of linear equation in one variable	*] To develop thinking, reason and imagina among students. *] To enable students to understand variables and their use *] To enable students to know about linear equa in one vari
Statement of Aim - Today, we		are going to

दिनांक Date 21/12/23

Variable

वर्ग Class VIII th

- Variables

तासिका अवधी Length of the Period 35 mins

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teachers ask some introductory questions Q1] Let the cost of a pen be ₹x. Cost of a book is equal to two pens. How will you form equation? Q2] Age of mother is two times her child. How will you form equation? Q3] I have some candies. I gave you two candies. Represent this in the equation.	Students give appropriate answers to the asked questions. Ans] cost of one pen = ₹x cost of a book = 2x cost of pen = 2x x = 2x Ans] Let age of the child = y years Age of mother = 2x age of child = 2y Ans] Let I have x candies ∴ The equation for this relationship is x - 2

Study about Linear Equation in one variable.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
P R E S E N T A T I O N	**Linear Equation in one variable** An equation which is expressed in the form of $ax+b=0$ where, a and b are two integers and x is a variable. It has only one solution. **Examples-** 1] $3x=1$ 2] $22x-1=0$ 3] $4x+9=0$ **standard form-** $ax+b=0$	1] **Knowledge** students are able to know about parts of linear equation and its standard form 2] **Understanding** students are able to understand how equations are formed 3] **Application** student are able to apply knowledge to solve problems in real situations

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	**विद्यार्थी कृती (Student Activity)**
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions.
Q.1] How many solutions does a linear equation in one variable have?	Ans] Every linear equation in one variable has one and unique solution.
Q.2] What is the formula of linear equation in one variable?	Ans] The formula of the standard form of an equation having only one variable is given as $ax + b = 0$.
Q.3] Form a linear equation. Sum of two numbers is 95. If one exceeds the other by 15.	Ans] let one number be x Then the other number becomes $x + 15$. According to the question, $x + x + 15 = 95$ $2x + 15 = 95$
Q.4] Three consecutive integers add up to 51. What are these integers?	Ans] let consecutive integers be x, $x+1$, $x+2$ According to the question, $x + x + 1 + x + 2 = 51$ $3x + 3 = 51$ $3x = 51 - 3$ $3x = 48$ $\boxed{x = 16}$ 16, 17, 18 are the numbers

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Solving Linear Equation in one variable For solving an equation in one variable, following steps are followed. 1] Using LCM, clear the fractions if any 2] Simplify both sides of the equation 3] Isolate the variable 4] Verify your answer Ex → $5x - 9 = -3x + 19$ $5x + 3x = 19 + 9$ $8x = 28$ $x = 28/8$ $x = 14/4$ $\boxed{x = 7/2}$	1] Knowledge Students are able to know how linear equations in one variable are solved. 2] Understanding Students are able to understand solutions of linear equation in one variable. 3] Application Students are able to apply knowledge to solve problems in real life examples.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic.	Students give appropriate answers to the asked questions
1] Solve: $2x - 4 = 0$	Ans] $2x - 4 = 0$ $2x = 4$ $x = 4/2$ $\boxed{x = 2}$
2] Solve: $\frac{x}{5} = 10$	Ans] $\frac{x}{5} = 10$ $x = 10 \times 5$ $\boxed{x = 50}$
3] Solve $\frac{5x}{3} + \frac{2}{5} = 1$ $15 \times \frac{5x}{3} + 15 \times \frac{2}{5} = 15$ $25x + 6 = 15$	Ans] LCM of 3 and 5 is 15 $25x + 6 = 15$ $25x = 15 - 6$ $25x = 9$ $\boxed{x = \frac{9}{25}}$
4] What are applications of Linear equations in real life?	Ans] 1] Finding unknown age 2] Finding unknown angles in geometry 3] For calculation of speed, distance or time 4] Solving problems based on force and pressure

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	1] Lineat equation in one variable 2] Examples 3] Standard Form 4] Solving Lineat Equation in one variable. 5] Steps of solving lineat equation in one variable	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by the students. *] To test the concept understood by the students regarding lineat equation in one variable

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher asks some questions related to the topic	Students give appropriate answers to the asked questions.
Q1] What is a linear equation?	Ans] A linear equation is an algebraic equation in which each term is either a constant or the product of constant and a variable $ax+b=0$
Q2] What is a linear equation with one variable?	Ans] A linear equation with one variable and degree one is called a linear equation in one variable. ex- $3x+5=0$
Q3] solve $12m-10=6$	Ans] $12m-10=6$ $12m=6+10$ $12m=16$ $m=\frac{16}{12}$ $\boxed{m=4/3}$
Q4] Fifteen years from now Ravi's age will be four times his present age. What is Ravi's present age?	Ans] let x be Ravi's present age $x+15=4x$ $15=4x-x$ $15=3x$ $x=15/3$ $x=5$ ∴ present age of Ravi is 5 years

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly.

फलक सार
Black Board Summary

Day - Thursday
Date - 21/12/23

Class - IX
Sub - Mathematics
Topic - Linear Equations in one variable

on roll - Present - absent -

Linear Equation in one variable

$6x = 12$

$x = \frac{12}{6}$ $\boxed{x = 2}$

$10x = 100$

$x = \frac{100}{10}$

$\boxed{x = 10}$

Homework - 1] Three consecutive integers are such that when they are taken in increasing order and multiplied by 2, 3, 4 respectively add up to 74. Find these numbers.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard Homework - 1] Three consecutive integers are such that when they are taken in increasing order and multiplied by 2, 3 and 4 respectively, they add up to 74. Find these numbers.	Students write it down and solve it in their notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 19 | विषय Subject Mathematics

शाला School V.L. convent | विषयांश Topic Linear equation

पाठ साहित्य Material Aids Chalk, Blackboard Duster | पूर्व ज्ञान Previous Knowledge Equalities, expre

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		*] To develop thinking, reasoning and imagination among students *] To enable students to understand linear equations in two variables *] To enable students to know about linear equation in two variable

Statement of Aim - Today we are going

दिनांक Date 22/12/23

...o variables वर्ग Class IX th

..., variables. तासिका अवधी Length of the Period 35 mins

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions	students give appropriate answers to the asked questions.
Q1] Let the cost of pen be ₹x cost of a book be ₹y. cost of a book is equal to two pens. Denote with an equation.	Ans] cost of one pen = ₹x cost of a book = ₹y ∴ Equation $y = 2x \Rightarrow \underline{2x - y = 0}$
Q2] Age of mother is two times of her child. How will you form equation ?	Ans] Let age of child = x years Age of mother = y years Equation = $y = 2x \Rightarrow \underline{2x - y = 0}$
Q3] I am ~~thirty~~ years old. You are x years younger than me. Denote the relationship of variables.	Ans] Age of our teacher = 30 years we are x years younger Relationship in equation is $\underline{30 - x}$

To study Linear Equation in Two Variables

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	**Linear Equations in Two variables** An equation is said to be linear equation in two variables if it is written in the form of $ax+by+c=0$ where a, b, c are real numbers and the coefficients of x and y i.e a and b respectively are not equal to zero **Examples** 1] $3x-6y=-13$ 2] $2x+5y=20$ 3] $3x+6y=12$ **Standard Form** $\boxed{ax+by+c=0}$	1] Knowledge - students are able to know about linear equations in two variables 2] Understanding students are able to understand how linear equations in two variables are derived and 3] Application students are able to apply knowledge to solve linear equations in practical

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q.1] What are the coefficients of the equation $3x-6y=-13$?	Ans] The coefficient of x is 3 and the coefficient of y is -6.
Q.2] What is the constant of the equation $3x-6y=-13$?	Ans] The constant of the equation $3x-6y=-13$ is -13.
Q.3] How to solve linear equation in two variables?	Ans] For a system of linear equations in two variables, we can find the solutions by the elimination method.
Q] How many solutions are there for linear equations in two variables?	Ans] For linear equation in two variables, there are infinitely many solutions.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Solving linear Equations in TWO variables consider example $5x + 3y = 30$ let value of $y = 0$ then, $5x + 3(0) = 30$ $5x = 30$ $x = 30/5$ $x = 6$ solution is $(6, 0)$ let value of $x = 0$ then, $5(0) + 3y = 30$ $3y = 30$ $y = 30/3$ $y = 10$ solution is $(0, 10)$	1] Knowledge Students are able to know about solutions of linear equations in two variables. 2] Understanding Students are able to understand how to solve linear equations in two variables. 3] Application Students are able to apply knowledge to solve problems in real life.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachees ask some questions related to the topic.	students give appropriate answers to the asked questions.
Q.1] Write the following equation in the form of $ax+by+c=0$	Ans] $2x+3y=4.37$ where $a=2;\ b=3;\ c=4.37$ $2x+3y-4.37=0$
Q.2] Write the following equation as an equation in two variables. $x=-5$	Ans] $x=-5$ can be written as $1\times x+0\times y=-5$ $x+0y=-5$
Q.3] The cost of a book is twice the cost of a pen. Write a linear equation in two variables to represent this.	Ans] let cost of notebook $=₹x$ cost of pen $=₹y$ $\therefore$ linear equation in two variables will be $x=2y;\ x-2y=0.$
Q.4] Find solution of the equation $4x+3y=12$	Ans] $4x+3y=12$ taking $x=0$, we get $3y=12$ $y=4$ $\therefore (0,4)$ is the solution of the given equation

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		*] To utilize the free time *] To create interest in the topic taught. *] To understand the taught concept properly.

फलक सार

Black Board Summary

Date - 22/12/23 Class - IX On roll -
Day - Friday Sub - Mathematics Present -
Topic - Linear Equations absent -
in two variables

Standard form of linear equation in two variables is $ax + by + c = 0$	where, x and y are variables

Homework - If (2,0) is a solution of the linear equation $2x + 3y = k$, then find the value of k.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on blackboard Homework- If (2,0) is a solution of the linear equation $2x+3y=k$, then find the value of k.	Students write it down and solve it in their notebooks

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठांक S.No. 20

विषय Subject Mathematics

शाला School V.L.Convent

विषयांश Topic Statistics

पाठ साहित्य Material Aids chalk, blackboard, duster, chart showing statistics

पूर्व ज्ञान Previous Knowledge Tally Marks, Fre

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टे व विशिष्टके Objectives with Specification
INTRODUCTION		*] To develop, thinking, reasoning and imagination among students. *] To enable students to understand statistics. *] To enable students to know about bar graph histogram and frequency polyg
Statement of Aim - Today we are going to		

दिनांक Date 23/12/23

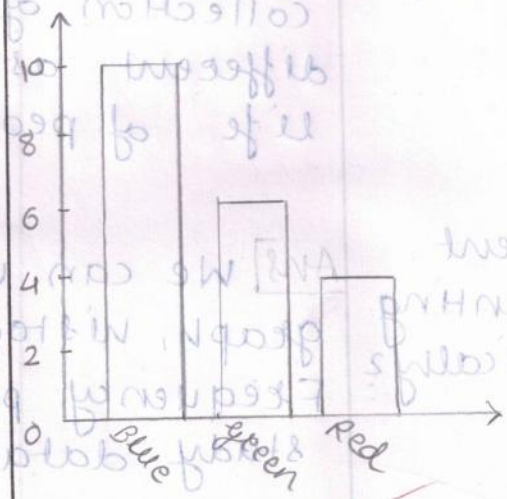
वर्ग Class IX th

तासिका अवधी Length of the Period 35 min

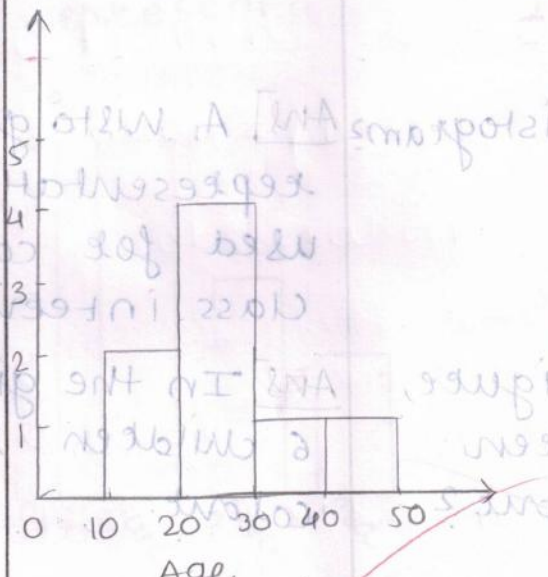
requency, Bar graph

अध्यायनानुभव Learning Experience

अध्यापक कृती Teacher's Activities	छात्र कृती Student's Activities
Teacher asks some introductory questions Q.1] What is meaning of the word 'statistics'?	students give appropriate answers to the asked questions. Ans] Statistics is the collection of data on different aspects of the life of people.
Q.2] what are different methods of representing the data geometrically?	Ans] We can use bar graph, histogram and Frequency polygon to study data.
Q.3] what is a pie chart?	Ans] A pie chart is the pictorial representation of data inside a circle
study about statics.	

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
PRESENTATION	Bar graph A bar graph is a chart or graph that presents data with rectangular bars with heights or lengths proportional to the values that they represent.  The following graph represents no. of children and their favourite colour	1] Knowledge Students are able to know about bar graphs. 2] Understanding Students are able to understand how bar graphs are drawn. 3] Application Students are able to apply knowledge of statics to solve questions related to bar graph

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic	students give appropriate answers to the asked questions.
Q-1] What is a bar graph?	Ans] A bar graph is a pictorial representation of data in which usually bars of uniform width are drawn.
Q-2] What is a Histogram?	Ans] A histogram is a representation of data used for continuous class intervals.
Q-3] In the given figure, how many children like green colour?	Ans] In the given bar graph 6 children like green colour.
Q-4] What is statistics?	Ans] Statistics deal with the study of collection, presentation and analysis of numerical data.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Histogram A histogram is a bar graph like representation of data that gives a range of classes into columns along the x-axis  x-axis represents age and y-axis represents frequency	1] knowledge students are able to know about bar graph and histogram. 2] understanding students are able to understand how histograms are drawn. 3] Application students are able to apply knowledge of statics to solve questions related to histogram.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
1] What is mode of data?	Ans] The value which appears very frequently in a data is called a mode.
2] What is the mode of given data ? 4, 6, 5, 9, 3, 2, 7, 7, 6 5, 4, 9, 10, 10, 3, 4, 7, 6, 9, 9	Ans] Arranging given data in ascending order 2, 3, 3, 4, 4, 4, 5, 5, 6, 6, 6, 7, 7, 7, 9, 9, 9, 9, 10, 10 Hence, mode of given data is 9.
3] What is mean ?	Ans] The ratio of sum of observations and the total number of observations is called as Mean.
4] What is the mean of $x+2, x+3, x+4$ and $x-2$?	Ans] Mean $= \frac{x+2+x+3+x+4+x-2}{4}$ Mean $= \frac{4x+7}{4}$

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
RECAPITULATION	① Mean $\bar{x} = \frac{\Sigma x}{N}$ x - observations N - number of observations ② Median Median = $\left(\frac{n+1}{2}\right)^{th}$ observation ③ Mode Mode = 3 × Median − 2 × Mean	*] To revise the topic taught in the class. *] To evaluate the knowledge gained by students. *] To test the concept understood by students regarding statistics.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teachers ask some questions related to the topic.	Students give appropriate answers to the asked questions.
1] The median of the data 4, 6, 8, 9, 11 is-	Ans] There are 5 observations Median $= \left(\frac{5+1}{2}\right) = \frac{6}{2} = 3^{rd}$ observation Median of given data is 8
2] What is data ?	Ans] The collection of information collected for a purpose is called data.
3] What is the class mark of the class interval 90 - 120 ?	Ans] Class mark $= \frac{\text{upper limit} + \text{lower limit}}{2}$ $= \frac{120+90}{2} = 105$ Class mark of the given interval is 105.
4] What is the mean of the data 2, 3, 4, 5, 0, 1, 3, 3, 4, 3	Ans] Mean $= \frac{2+3+4+5+0+1+3+3+4+3}{10}$ $= \frac{28}{10} = 2.8$ Mean of the given data is 2.8

पाठाच्या पायऱ्या Steps of the Lesson	अध्यापन मुद्दे Teaching Points	उद्दिष्टें व विशिष्टके Objectives with Specification
HOMEWORK		* To utilize the free time * To create interest in the topic taught * To understand the taught concept properly

फलक सार

Black Board Summary

Date - 23/12/23 Class - IX On roll -
Day - Friday Sub - Mathematics present -
Topic - Stastics Absent -

Mean

$$\bar{x} = \frac{\Sigma x}{n}$$

$$\bar{x} = \frac{x_1 + x_2 + x_3}{3}$$

Median

$\left(\frac{n+1}{2}\right)^{th}$ observation

Mode

= 3 median − 2 mean

Homework - Find the value of x if the mean of 4, 5, 6, 7, 8 and x is 7.

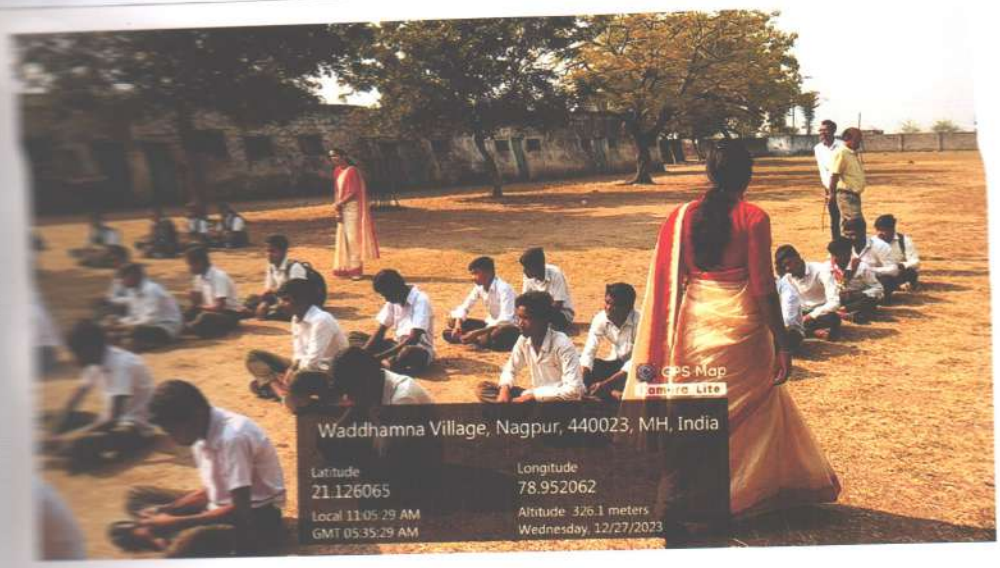
अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Student Activity)
Teacher gives homework written on the blackboard. Homework - 1) Find the value of x, if the mean of 4, 5, 6, 7, 8 and x is 7.	Students write it down and solve it in their notebooks.

अभिप्राय (Remarks)

पर्यवेक्षकाची सही
(Sign. of Supervisor)

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR



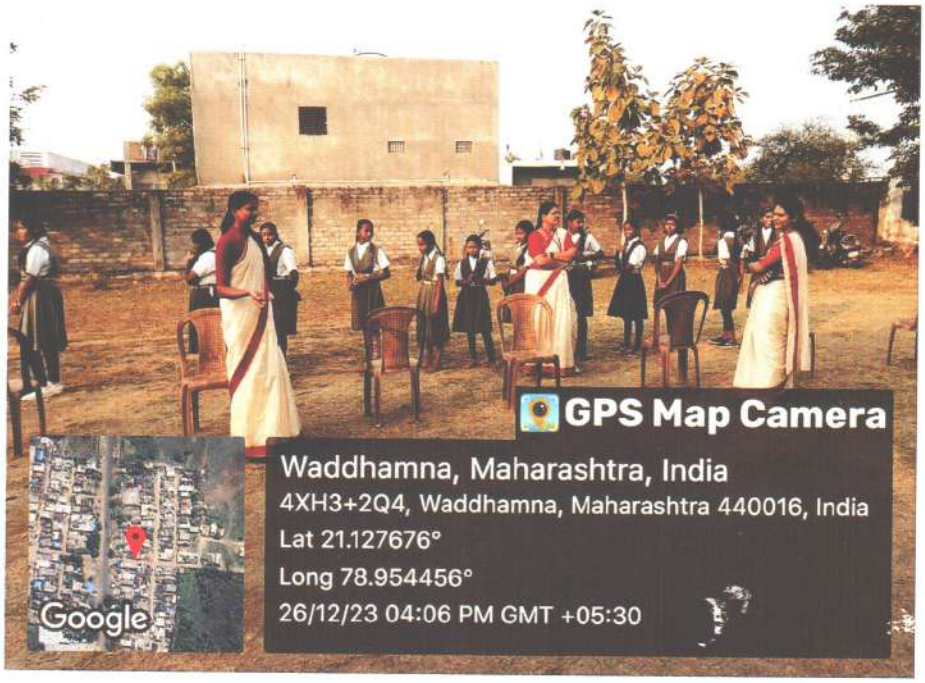
CO-CURRICULAR ACTIVITIES

SHEELADEVI COLLEGE OF EDUCATION WADI, NAGPUR

Principal
Sheeladevi College of Education
Wadi, Nagpur-440023.

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR



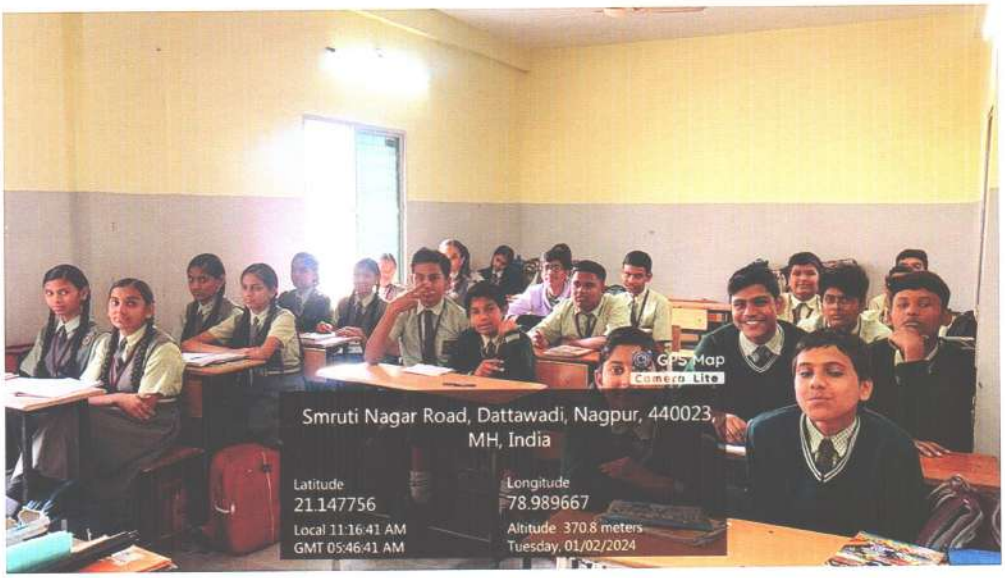
CO-CURRICULAR ACTIVITIES

SHEELADEVI COLLEGE OF EDUCATION WADI, NAGPUR

Principal
Sheeladevi College of Education
Wadi, Nagpur-440023.

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR



CO-CURRICULAR ACTIVITIES

SHEELADEVI COLLEGE OF EDUCATION WADI, NAGPUR

Principal
Sheeladevi College of Education
Wadi, Nagpur-440023.

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DATE.: / / 20

SHEELA DEVI COLLEGE OF EDUCATION (B.ed)

Wadi, Nagpur

2023-2024

Topic - Co-Curricular Activity

B.ed IIIrd sem.

Name - Harshali G. Chopade

Teacher's Signature

PAGE NO.: 3
DATE.: / / 20

Index

Teacher's Signature

School Introduction

A ~~School~~ School is an educational institution designed to provide learning spaces and learning theire ments for the teaching of students under the direction of teachers. Most contries has system of formal education which is sometimes compulsory. In these system of format education which is sometimes compulsory. In these system students progres through a series of schools.

The names for these school's very by country but generally incla primary school for young children and secondar school for teneger who have completed primary eduction. An Institution where higher education is taught is commonly called unicontry college or universities.

A school may be available for secondary school. A school may be dedicated to me particalar feild. Such a school of economics or dunel government school also known as private school.

About Swami Vivekanand High School

Swami vivekanand School, Vaidhamana was established in 1990. and it is managed by the Pvt. Unaided It is located in Rular area. It is located in Nagpur block of nagpur district of Maharashtra. the school consists of grade from 1 to 7. the School is co-educational and it have an attached Preprimary Section. the school is N/A in nature and is the medium of instructions in this School this school. this School is approachable by all weather road. In this School academic sesion starts in april.

The School has rented building It has gots 16 classrooms for instructional purposes fill the class room for air in good condition. It has 2 other rooms for non-teaching activities. the source of drinking water in the School. Is tap water and it is functional. the School has 3 boys toilets and it is functional and 5 girls toilets. the ~~School~~ School has playground the school has library and has 600 book in its library.

Prayer

Our National Pledge

India is my Country
All Indians are my brothers and Sisters

I love my country and I am proud of
its rich and varied heritage.
I shall always strive to be worthy
of it.
I shall give my parents, teacher's
and all elder's respect and
treat everyone with courtey
To my country and my people.
I pledge my devotion
In their well-being and prosperity
alone lies my happiness.

Teacher's Signature

National Anthem

જન - ગણ - મન અધિનાયક જય હે
ભારત - ભાગ્ય - વિધાતા ।
પંજાબ સિંધ ગુજરાત, મરાઠા
દ્રાવિડ ઉત્કલ વંગ ।
વિંધ્ય હિમાચલ યમુના, ગંગા,
ઉચ્છલ જલધિ તરંગ ।
તવ શુભ નામે જાગે,
તવ શુભ આશિષ માગે;
ગાહે તવ જય ગાથા ।
જન - ગણ મંગલદાયક જય હે,
ભારત ભાગ્ય વિધાતા ।
જય હે, જય હે, જય હે,
જય જય જય જય હે ॥

Morning Assembly

A school assembly is a gathring of all or part of schools for purposes; sun as spacial programs or communicating information basis In schools Student gather to perform a common song or prayer and to ~~recive~~ common ~~pra~~ song or prayer and to recive - common song prayer and to recives common announcements the routine attendance done in such gathering periodic School assemblis of educational health, or faculty materials or school playes talent schools etc.

Importance of Assembly

It helps in building culture of communications and representations of academic and co-curricular activitie morning assembly is a very important parts of school culture It helps to strenth the way a school works. It also helps students

To gather a lot of energy to do well and be good in their day.

main objectives of the school assembly

→ To develope unity among all the students and teathers and creating an enviorment of School unity.

→ To connect with your true self and god theory morning prayer.

→ To impact disciplin in the lifestyle of students.

→ To develope in students about the sense of identify in the School and enwonge school spirit.

→ To motivated expression and outcome sel & Consciopness.

→ To devolope an esesthetic sense.

→ To devolope a spirit of putriotism

→ To provide a solemn occasion

→ To inculcate Public Speaking Skills.

→ To develope correct audience habits.

→ To cultivate self-confidence and motivation in students.

List of things we do in morning assembly :-

→ massage from a student

→ Breathing Exercise

→ Talent Show

→ Holiday-Related activities

→ Presentation

→ competitions beth the School houses

→ Principals speech.

Co-Curricular Activities

Every activities to school life Playes a significant role in developement of student Co-curricular activities are an essential parts of school life and helps in enhancing learning process of students at school.

Co-curricular activities are defined as the activities that these are every Important part and parcel of educational Institutions to develope the Students Corresponding as well as to strength in classroom wooring. In carricular activities are those activities which are undertaken along with academic studies. Typically co-curricular activities are carried out outside classroom but the supplement academic curriculer and help in learning by doing. these activities help students to developes.

Problems solving critical thinking creative communication and collaborative activities.

Teacher's Signature

Co-curricular activities in school might be compulsory such as music art or drama, classes, that takes place during the day. others could be voluntery such as participating in school sports team, school devoting team. In other case participation helps emotional devolopement several skill devolopement, Sevekal Skill devolopment and overall personality devolopement.

Co-curricular activities feel your learning by stimulating reative thought improving your social and organizational skill, developing your talents and effecting your the chance to Sketch your the chance to stick of and do something you daily enjoy.

Various co-curricular activities are sports, music, dance, art, debates drama story writing, compositions art crafts fancy chrey, photography celebrati-on of festivals etc.

Importance of Co-curricular activity

Co-curricular activities have become a fundamental part of school life and wides in exploring students learning at school. these activities are mandatory and necessary for every students to participate co-curricular are structured and balanced with scholastic educational academic curriculam so that every Students gets opportunity to learn beyond studies.

Better physical & mental health

These types of activities require Students to stay active by active participation in some co-curricular activities since they have no choice to skip these as is part of their daily curriculam.

Create opportunities :-

Co-cursicular activities provided better opportunities as students pursiveng these activities are given proyonce these over those who are involved in such type of activities.

Sense of Responsibility and Confidence.

When at an early stage are given tasks of responsibility to handle the become mche better in handling these type of sitution this foster a sense of self confidence, acctability and responsibility within them.

Development of Special Skill

Co-curricular activeety in mpro the learning esepelience of student help them identify and develope their inner talents like creative and public speaking skills, leadership qualities etc.

Co-curricular activities other than an opportunity of thinking uniquely and giving the innovative ideas at their own. these activities help students develope an enriched learning experience by providing them a chance of imagined new ways of using an issues.

Exposure to 8.5 New activities

Co-curricular activities in schools helps students shapen their communication skill, expression, public speaking sense of belongeness through different type of activities are debates arts and craft competition classroom activities like reading group discussion and many more

Learning Expression

Co-curricular activities are good for improving student learning experien-ce at school which improves their attendance of school and increase participation rate by student in co-curricular activities.

Team leadership skills

Co-curricular activities of school are designed in groups so that students can participate along with their classmets this helps students developed leadership skills, team integrating - co-ordination skill.

Moral values :-

The students through co-curricular activity learn essential entical values about different culture religion events of national and international importance as well as discipline and school life childs, they learn to understood different religion, values, social ethics, motivational skills. compatibility and contantment.

Culture values :-

Students get to learn by cultural events including national events and traditional events. including national events and traditional events diffesents faiths, including gandhi jayanti, Republic Day, Diwali, Eid, and many other culture events.

Personality developement :-

Students perform co-curricular activities in school which help them sharpen their communication skills. expression skills, public speaking participation and sense of belongigess through differe tes activities - art - competitions.

Classroom activities like reading group discussion.

Stress Relief

Co-curricular activities provides you with opportunity to concentrate your can escape whatever it might be that out and seek.

Page No. :
Date :

Krishna- Janmashtmi

Janmashtmi, Hindu festival celebrating the birth (Jamma) of the god Krishna on the eighth (ashtami) day of the dark fortnight of the month of Bhadrapada. Kishna janmashtmi, also kno on simply as khrishnashtami, Janmashtmi, or, Gokulashtmi is an annual Hindy festive that celebrates the birth of Krishna, the eight avatar of vishnu. Hindu texts such as Gita Govinda, Krishna has been identified as supreme God and source of all avatars.

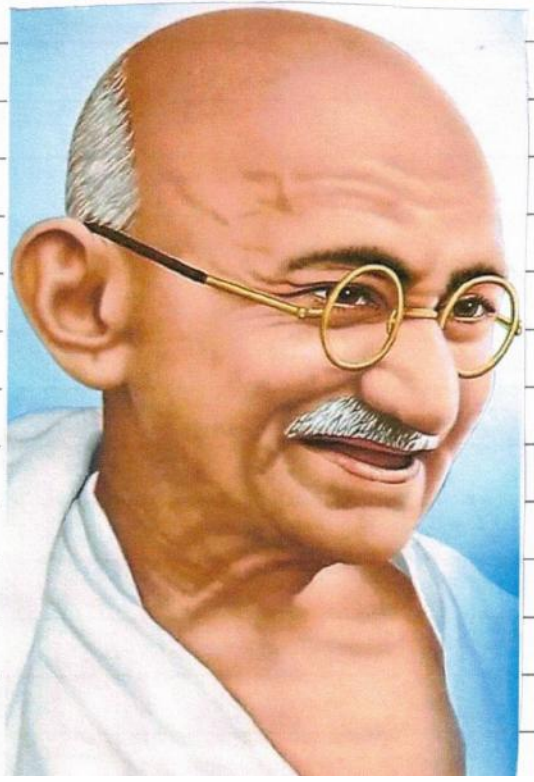
Shree Radhe

Page No. :
Date :

Gandhi Jayanti :- 2 October.

Gandhi Jayanti 2023. Gandhi Jayanti celebrated on 2nd october. commemorates the birthday of mahatma gandhi. a leader in indias independence movement. The day is significant for honoring Gandhi's life and principal promoting this ideals of non-violence and civil disobedience, and advocating for peaceful resistance.

October 2 is a national holiday in india. the day honours mahatma Gandhi, the values of non-valence and tolerance he preached and pays tribute to the freedom fighter. The father of our nation is 'Mahatma Gandhi'



Shree Radhe

Page No. :
Date :

Christmas :-

Christmas is an annual festival commemorating the birth of Jesus Christ, observed primarily on December 25 as a religious and cultural celebrating.

Christmas was traditionally a Christian festival celebrating the birth of Jesus. but in the early 20th century, it also became a secular family holiday, observed by christians and non-Christians alike. Christmas, commemorating the birth of Jesus christ, is celebrated on this day having been first identified as the date of Jesus birth by Sextus Julius Africanus in 221 Birth of Jesus Christ.

Shree Radhe

Co-curricular activities in school

1) Ganesh Chaturthi celebrated → 19 september

The celebration begins with Ganpati Puja in the Nessary classroom following by Ganesh Arti and Prasad distrubation to all. The tiny tots were told about the significance of ganesh chaturthi

Ganesh Chatwthi, an annual Hindu festival marks the birth of lord Ganesha, the revered deity known for wisdom properity and new begining. lesting for 11 days the festival begins on the fourth day of the waxing moon in the Hindu month of Bhadrapada

The celebration of Ganesh chaturthi also called vanayaka chavithi, is a auspicious Hindu festival which is celebrated for 10 days every year. the festival is celebrated in the Bhandra month as per Hindu Calender which generally falls.

1) He's known as the remover of obstalles

2) He's the son of Shiva and Parvati

3) He's renowned for his wisdom and intelligence.

4) He transcribed the Mahabharat.

5) His form and sacred symbols all have deeper meaning.

Photoes.

Teacher's Signature

Dussehra → 24 october.

Dussehra is also known as vajay Durga Puja. It is mayor hindu festival celebrated at the end of Navaratri year. It marks the end of Ramleela and remebers god.

Rama's victory over Ravana. on the occasion of this festival all classes joint together at School hal to see history at Dusshra all students are very excited to see. At the end of the occasion Principal mam - come and feilds the knowledge about History of Dusshra and the stude motivated by Principal mam.

Diwali :- 12 November

This festival is one of most important festival within Hinduism. It is celebrated as the victory of light over darkness and good over evil. on this day Rama back to his hometown Ayodhya after killing ravan.

on the occasion of Diwali the beautification of school was started two days before Diwali. All Student participated in this tasks. Student decorated their classes with waste materials art and craft and decorated the black board with colour full and

makers & pupil teachers team also helped a for this the day before Diwali there are several competitions in school like Diya's Decorations in School like Diyas decorations, Rangoli card making.

PAGE NO.:
DATE.: / 2020

Guru Nanak Jayanti

Guru Nanak Gurpurab also known as Guru Nanak Prakash Utsav, celebrates the birth of the first sikh guru, Guru Nanak, one of the most celebrated and important sikh gurus and the founder sikhism.

Guru Nanak is a highly revered by the sikh community this is one of most sacred festival in sikhism or sikhi.

Guru Nanak Jayanti is a very big day a for those who follows sikhism. People respect him immensely for his great contributions to humanity moreover, various states of india observe his birthday as a public Holiday.

Guru Nanak Ji was born in 1469 an lived an time of huge inequality in the 15 century

Amar KRISH

Teacher's Signature

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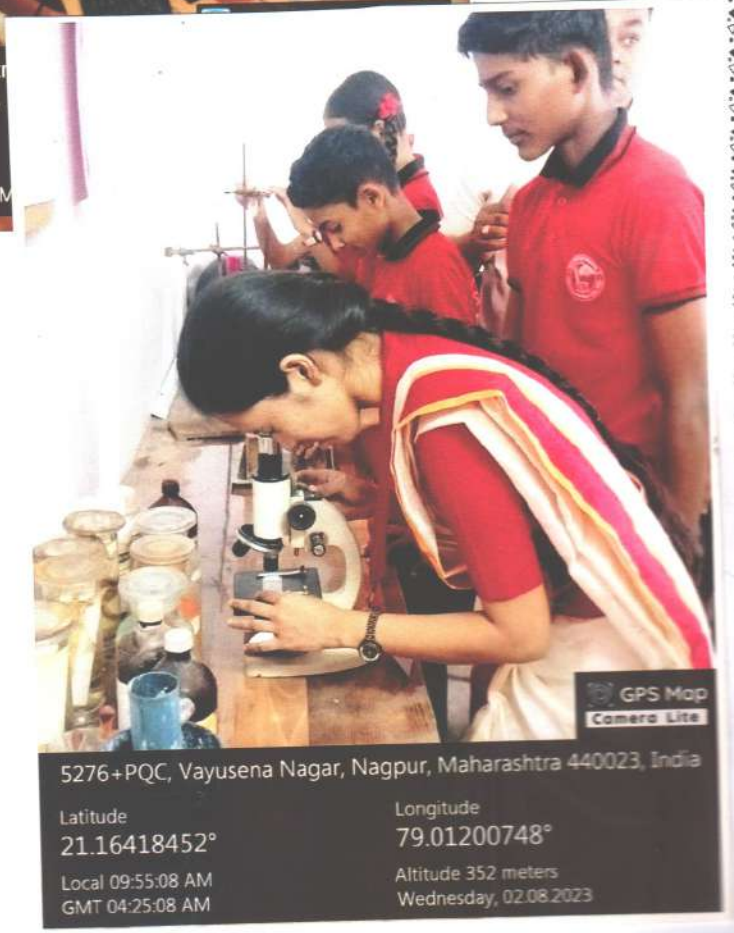
WADI, NAGPUR



LAB & LABORATORY ACTIVITIES

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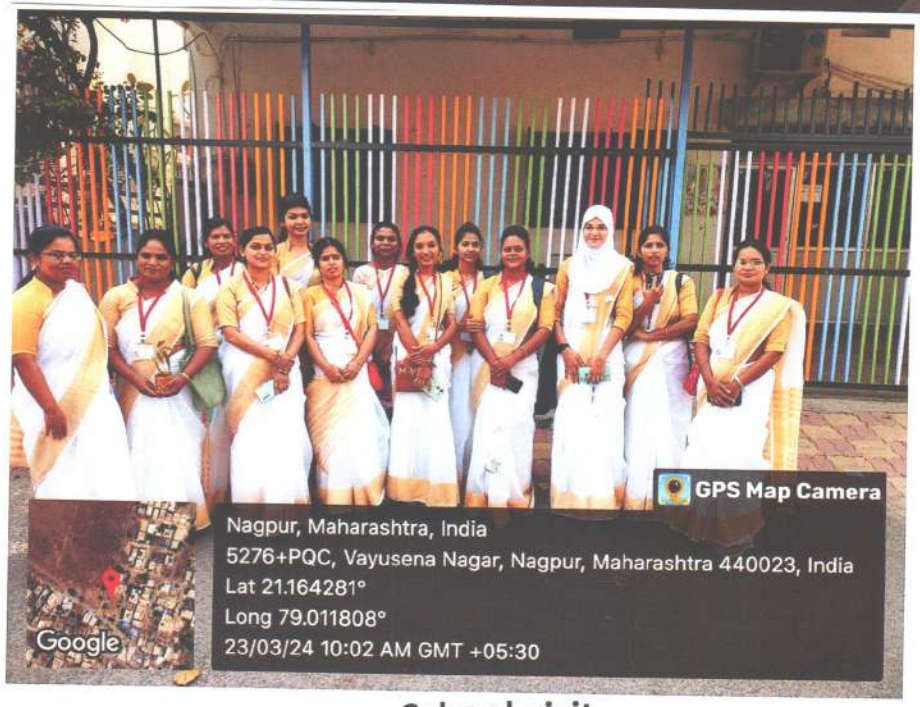
SHEELADEVI COLLEGE OF EDUCATION WADI , NAGPUR

2023 -2024



School visit

SHEELADEVI COLLEGE OF EDUCATION WADI, NAGPUR

Principal
Sheeladevi College of Education
Wadi, Nagpur-440023.

RESULT

SHEELADEVI COLLEGE OF EDUCATION, WADI NAGPUR

B. Ed. (SEMESTER – IV) (CBCS) (NEP)

COLLEGE LEVEL EXAMINATION (2022-2024)

RESULT

Sr. No	Name of the student	PAPER-1 Contemporary Indian Education	PAPER-2 School Management	PAPER-3 Guidance Conselling in School	PAPER-4 Gender School & Society
1	ANKITA SAVIDAS MANWAR	58	35	60	30
2.	ASHWINI LAKSHMAN NARGADE	59	61	50	56
3	ASHIWINI PRAMOD CHOKHAT	60	59	58	57
4	BHAGYASHRI SURESHRAO PATIL	61	58	60	60
5	CHITRALEKHA TEJRAM PATLE	55	51	50	60
6	DINESH	58	59	61	55
7	DIPIKA PRABHKAR GIRGUSE	82	72	60	55
8	DIWYANI GAJANAN KARAL	50	51	55	54
9	DNYANESHWARI VILAS ATRAM	55	52	61	55
10	GAURAV GAJANAN THAKRE	53	60	62	52
11	HARSHALI GANESHRAO CHOPDE	87	69	68	33
12	KALYANI NIKHIL SAWARKAR	53	55	50	54
13	KAVITA NAMDEORAO PHONKAR	50	54	58	60
14	KETAKI SHRIKANT OHALE	55	51	52	53
15	KOHINOOR DILIP SONULE	55	47	42	30
16	MASUK PRALHAD JANBANDHU	54	55	51	55
17	MAYANK WILSON WILFRED	55	54	55	52
18	MINAKSHI BABARAO FUKE	60	59	54	55
19	NAMRATA RAMESH NANEDEKAR	54	54	55	60
20	NEHA DINESH RAUT	55	54	56	65
21	NIKETA SURESHPANT RAMEKAR	54	54	55	50
22	NIKITA SUKHDEORAO SAWANT	60	55	58	60
23	NILESH ANIL MADAVI	54	53	54	55
24	NISHA DAULATRAO MASKE	54	51	62	58
25	PRAPTI SANJAY ATKARE	54	50	52	60
26	PRATIKSHA PRABUDDHA JANGAM	54	55	52	52
27	PRATIKSHA SAHEBRAO SAWARKAR	55	54	52	53
28	PRATIKSHA VIJAYRAO THAKRE	54	52	54	55
29	PRIYA VIJAY CHOUDHARI	58	56	50	51
30	PRIYANKA ARUN BHATKAR	57	52	51	50
31	RADHIKA SANJAY THAKRE	50	56	58	56
32	RAJANI DIGAMBAR BANKAR	54	52	54	55
33	RAJASHRI NARAYAN NIKODE	62	53	56	58
34	RANJANA SURESHRAO BHARKUDE	55	51	60	61
35	REMMYA NAIR	58	60	60	62

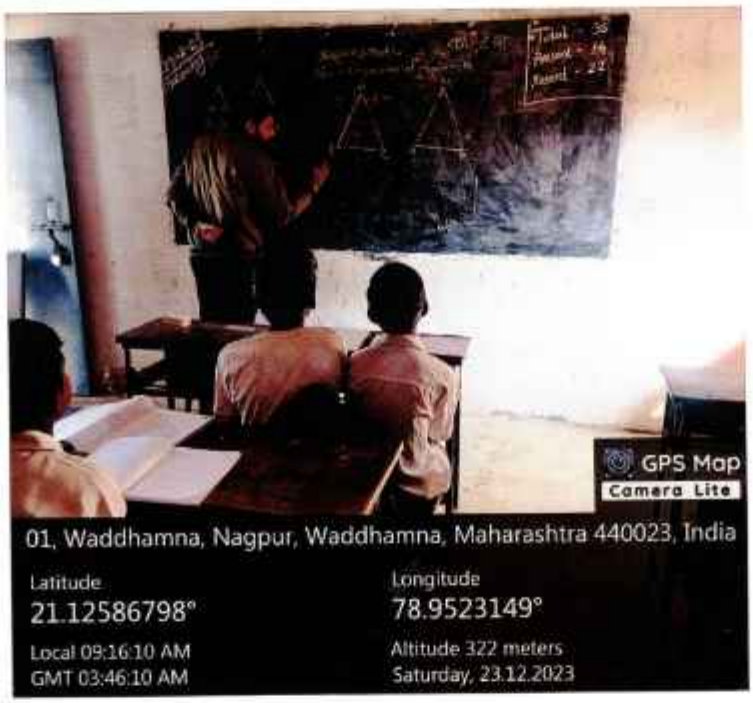
COLLEGE OF EDUC... WADI, ...PUR

Principal
Sheeladevi College of Education

INTERNSHIP PHOTO

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR



INTERNSHIP II

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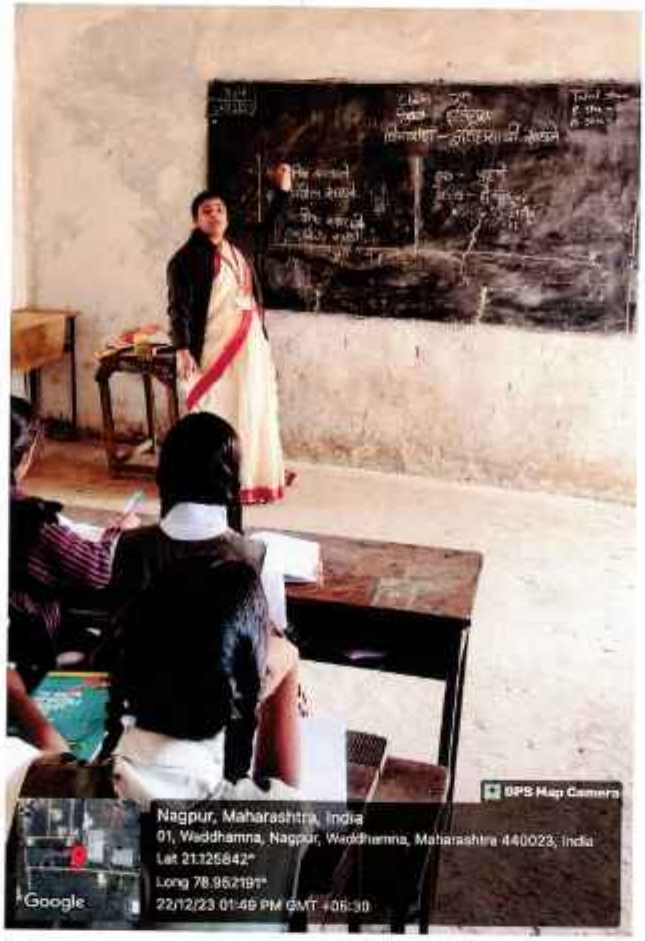

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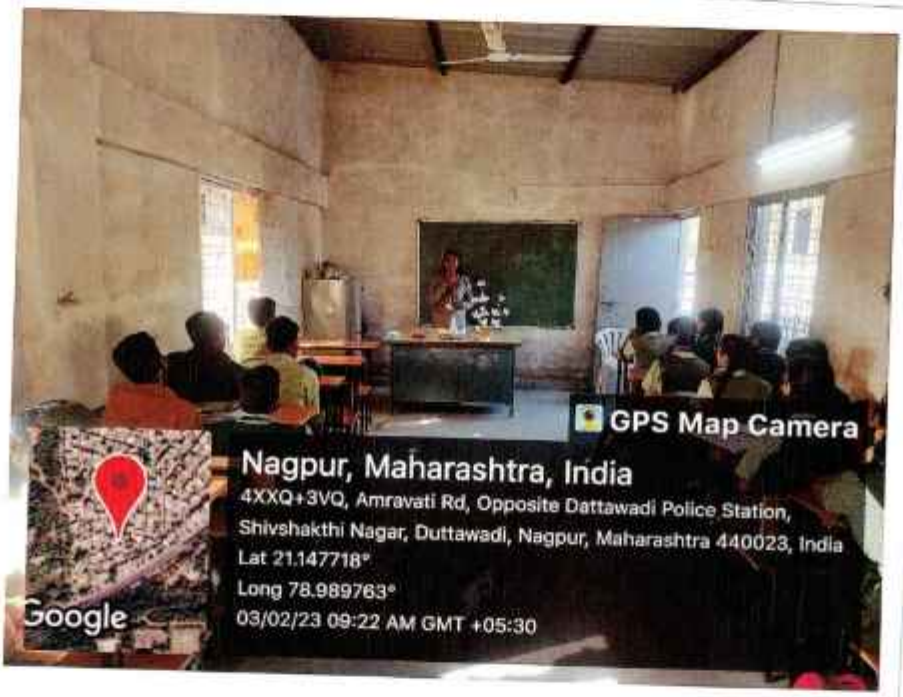
WADI, NAGPUR



INTERNSHIP II

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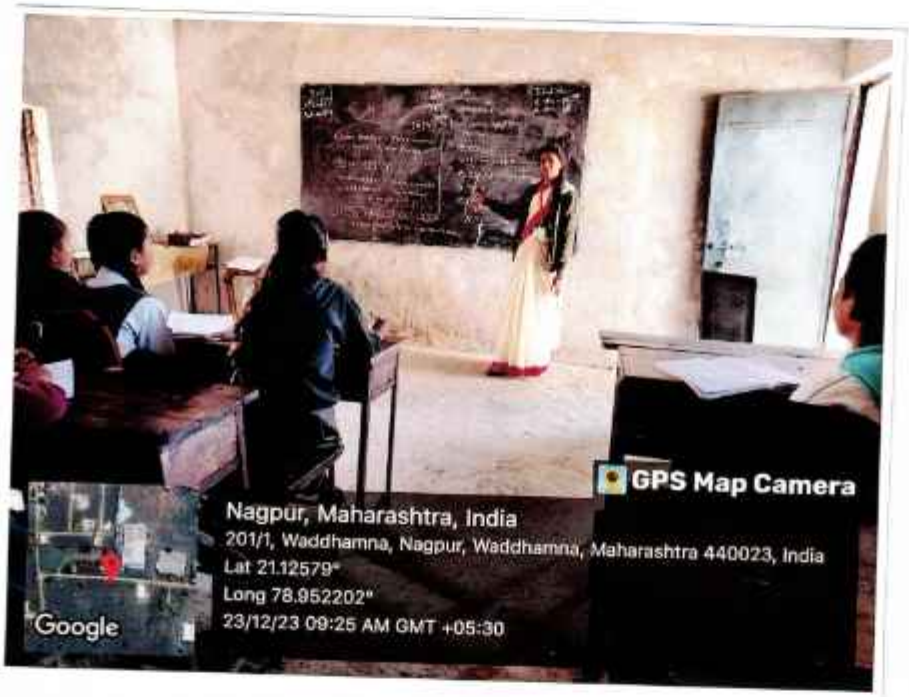

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SHEELADEVI COLLEGE OF EDUCATION

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INTERNSHIP II

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

2023-2024

III SEM PRACTICAL VIVA

SHEELADEVI COLLEGE OF EDUCATION

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INTERNSHIP II

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INTERNSHIP II

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WADI, NAGPUR

2022-2023

II SEM PRACTICAL VIVA

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

2022-2023

II SEM PRACTICAL VIVA

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2022-2023

II SEM PRACTICAL VIVA

SHEELADEVI COLLEGE OF EDUCATION

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II SEM PRACTICAL VIVA

Principal

SHEELADEVI COLLEGE OF EDUCATION

WADI, NAGPUR

II SEM PRACTICAL VIVA

INTERNSHIP RESULT

RASHTRASAT TUKADOJI MAHARAJ NAGPUR UNIVERSITY,
NAGPUR

Practical Report Sheet

am Name : SECOND SEMESTER BACHELOR OF EDUCATION (B.ED.)(CBCS) (NEP)
bject Name : INTERNSHIP-I
llege Name : (254) SHILADEVI COLLEGE OF EDUCATION
ssion : Summer-2023

Sr. No.	SEAT NO	ENROLLMENT NO	STUDENT NAME	Marks / Max 100
1	753774	20173030106444	ANKITA SAVITA DAS WANWAR	80
2	753775		ASHWINI LAXMAN NARGADE	82
3	753776		ASHWINI PRAMODRAO GHONGAT	85
4	753777		BHAGYASHRI SURESHRAO PATIL	87
5	753778	20150166020468455	CHITRALEKHA TEJRAM PATLE	78
6	753779		DINESH	89
7	753780	20150166005616897	DIPIKA PRABHAKAR GEDUSE	89
8	753781		DIVYANI GAJANAN KARALE	78
9	753782	20201047402798	DNYANESHWARI VILAS ATRAM	90
10	753783		GAURAV GAJANAN THAKRE	90
11	753784	20150166023098 63	HARSHALI GANESHRAO CHOPADE	91
12	753785		KALYANI NIKHIL SAWARKAR	84
13	753786		KAVITA NAMDEVRAO POHANKAR	90
14	753787		KETAKI SHRIKANT OHALE	92
15	753788	20173040108163	KOHINOOR DILIP SONULE	81
16	753789	20120166008130 66	MASUK PRALHAD JANBANDHU	79
17	753790	20150166024 82743	MAYANK WILFRED WILSON	90
18	753791		MINAKSHI BABARAO PUKE	87
19	753792	20173011314305	NAMRATA RAMESH NANDEKAR	84
20	753793	20173000413263	NEHA DINESH RAUT	91
21	753794		NIKETA SURESHWANT RAMEKAR	79
22	753795	20181000106892	NIKITA SUKHDEORAO SAWANT	85
23	753796		NILESH ANIL MADAVI	80
24	753797	20140166002356 51	NISHA DAULATRAO MASKE	87
25	753798	20173030106501	PRAFTI SANJAY ATKARE	84
26	753799	A9/3788	PRATIKSHA PRABUDDHA SANGAM	87
27	753800	20181030114187	PRATIKSHA SAHEBRAO SAWARKAR	80
28	753801	20181006404438	PRATIKSHA VIJAYRAO THAKRE	84
29	753802	20150166027356 83	PRIYA VIJAY CHOUDHARI	85
30	753803	20150166015566 34	PRIYANKA ARUN BHATKAR	86

SHILADEVI COLLEGE OF EDUCATION WADI

Principal

RASHTRASAT TUKADOJI MAHARAJ NAGPUR UNIVERSITY,
NAGPUR

Practical Report Sheet

Exam Name : SECOND SEMESTER BACHELOR OF EDUCATION (B.ED.) (CBCS) (NEP)
Subject Name : INTERNSHIP-I
College Name : (254) SHILADEVI COLLEGE OF EDUCATION
Session : Summer-2023

Sr. No.	SEAT NO	ENROLLMENT NO	STUDENT NAME	Marks (Max. 100)
31	753804		RADHIKA SANJAY THAKARE	87
32	753805	20203055103332	RAJANI DIGAMBAR BANKAR	82
33	753806		RAJASHRI NARAYAN VINOD	86
34	753807	20120166008476	RANJANA SURESHRAO BHANDUDE	91
35	753808		REMMYA VINODKUMAR NAIR	88
36	753809	20150166002663	ROSHNI RAJPAL MOON	91
37	753810		SHEFALI JULIUS NARSE	85
38	753811	20191071802285	SHIKHA SHIVCHARAN PARDHI	82
	753812	20150166005724	SHITAL SHRAWAN GAKRE	84
40	753813	NU/A9/10064	SHWETA MAHADEORAO BHIWANKAR	92
41	753814	NU/A3/54486	SUJITA ASHOK RANTEKE	92
42	753815		SONALAVINASH CHALBEY	84
43	753816	20181025114897	SOURABH VIJAY HUMNE	90
44	753817	20173031506687	SUJATA VASANTRAO TIJARE	83
45	753818	20173015400808	SUPRIYA JAGDISH WANJARI	85
46	753819		SWAGATIKA ASHOK KUMAR SAHU	86
47	753820		SWAPNIL MANIRAM KAWALE	80
48	753821	20150166204771	UMITA BHARAT MESHRAM	89
49	753822	20180713001071	UTKARSHA JAGDISH BONGARE	82
	753823	20173034406821	VAISHNAVI VASANTRAO LANDGE	89

Print Date & Time: 17-08-2023 02:37:33 PM

Signature of Examiner

SHEELADEVI COLLEGE OF EDUCATION WADI, NAGPUR

Principal
Sheeladevi College of Education
Wadi, Nagpur-440023.

Appendix-II

Second Semester
द्वितीय सेमेस्टर

Course Code	Course Title : Theory	Marks	Credits
Theory course	**Core courses**		
C201	Environmental Education and Sustainable Development	50	2
C202	Assessment of Learning	100	4
C203	Action Research in Education	50	2
C204	Inclusive Education.	50	2
C205	Gandhian Philosophy,Nai Talim and Community Engagement methodology	50	2
E206	Elective Paper (any one of the following papers)	50	2
A	Life Skill Education		
B	Historical Perspectives of Education		
C	Indian Knowledge System		
D	Any other course from SWAYAM of Similar credits		
	Total	350	14
Practicum(EPC)	**Course Title : Practicum/Project**		
EPC 1	Personality development with emphasis on – Understanding the self / Communication skill including Language Use and improvement of speech.	50	2
EPC 2	Designing of assessment tools for achievement in school related subject and administration of psychological tests and experiments with a brief report there on.	50	2
EPC 3	Intelligent use of ICT and development of power point presentation, CAI or PLM module including improvisation of teaching aids and gadgets.	50	2
Internship – I विद्यालय इण्टर्नशिप-I	In the Internship for first year of 4 Weeks following activities/ assignments will have to be undertaken.		
	a. School Visit: Two days for every School : primary / upper primary and secondary and senior secondary level schools. (One Week)	25	1
	b. Observation: Observation of class room teaching, Classroom and School sites including library, lab and sports / extramural programmes within the school with preparation of school profile as an outcome. (One Week)	25	1
	c. Skill development through simulated and micro teaching sessions. (One Week)	25	1
	d. Improvising of teaching aids / exhibits / gadgets for use in school. (One Week)	25	1
	Total	250	10

Note:

- **Total workload for theory is approximately 48 working days. Total minimum hours for theory is 180 hours and total credit for theory is 14 (For Theory 1 hour is assigned per week per credit)**
- **Total EPC and internship is of 52 days (total minimum hours for EPC is 120 hours) for 06 credits. (For EPC 2 hours are assigned per week per credit.) Internship (total minimum hours for Internship is 120 hours) for 04 credits (For Internship 3 hours is assigned per week per credit.)**
- **For Inter Semester Break (ISB) of four Week (30 days) duration.**
- **Total Credit for Semester-II is 24. (Theory 14 +EPC 06 +Internship 104)**

Second Semester
Practicum (EPC)

2S- EPC1 Personality development with emphasis on -- Understanding the self /Communication skill including Language Use and improvement of speech.

2S- EPC 2 Designing of assessment tools for achievement in school related subject and administration of psychological tests and any 5 Psychological experiments with a brief report there on.

A Transfer of learning
B Memory
C Trial and error
D Work and fatigue
E TAT / Inkblot or any other experiment
F Span of attention

Internship – In the Internship for first year of **4 Weeks** following activities/assignments will have to be undertaken.

a. **School Visit:** Two days for every School: primary / upper primary and secondary level schools. (One Week)

b. **Observation:** Observation of class room teaching, Classroom and School sites including library, lab and sports / extramural programmes within the schoolwith preparation of school profile as an outcome. (One Week)

c. Skill development through simulated and micro teaching sessions. (One Week)

d. Improvising of teaching aids / exhibits / gadgets for use in school. (One Week)

Sadaphal

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