Lesson Plan –Teachers Diary   [A] Planning Format   Annexure – 1

Class/Section :- X-C   Chapter:-Real Numbers   Date of Commencement:- 01/06/2017

Subject :- MATHS   No. of periods:- 28   .   Expected date of completion:- 14/06/2017

Actual date of completion:-

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
REAL NUMBERS- Euclid's division lemma and Euclid's division algorithm.	Every +ve integer can be written as a linear combination of a given +ve integer using division. To find the H C F of given numbers using the algorithm.	Demonstrate the division of two numbers a and b and show how to write $a = bq + r$, where q is the quotient and r is the remainder. Make the children understand the steps in Euclid's division algorithm to find the H C F of the given numbers. H C F(225,40)= 5	H/W (Qns from exercises) Revising Qns from R D Sharma Oral test Class test-1
Fundamental Theorem of Arithmetic.	To factorise the given number using prime factors and find the LCM and HCF of them	Factorise the given numbers using prime factors and find the LCM as the product of factors having highest powers and HCF as the product of common factors with lowest power.	H/W (Qns from exercises) Oral test Class test-2 Lab Activity- Fundamental theorem of arithmetic
Revisiting irrational numbers and Revisiting rational numbers. Decimal expansion of Rational numbers	To show that $\sqrt{2}, \sqrt{3}, \ \sqrt{5}$ etc. are irrational numbers. To understand $\frac{p}{q}$ form of rationals having terminating decimal part and non- terminating recurring decimal part	Make the children understand the contradictory method to prove $\sqrt{2}, \sqrt{3}, \ \sqrt{5}$ etc. are irrational numbers. Show in different egs. the denominator in the $\frac{p}{q}$ form of terminating decimal expansion is of the form $2^m \times 5^n$	

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Lesson Plan –Teachers Diary　　　　[A] Planning Format　　　　Annexure – 1

Class/Section :- X-C　　　　Chapter:- Polynomials　　　　Date of Commencement:- 01/06/2017

Subject :- MATHS　　　　No. of periods:- 28　　　　Expected date of completion:- 14/06/2017　　　　Actual date of completion:-

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
POLYNOMIALS- Types of polynomials, Zeroes of a polynomial, and geometrical significance of zeroes of a polynomial.	To find the zeroes by splitting the middle term, From the graph the number of zeroes is the no. of intersections of the graph with the X-axis	Show different polynomials to split the middle term and finding the zeroes . Draw graphs of different polynomials for verifying the no. of zeroes.	H/W (Qns from exercises) Oral test Lab Activity- Geometrical significance of zeroes of polynomials.
Relation between zeroes and coefficients of a polynomial	To verify the relation between the zeroes and the coefficients of a polynomial.	Find the zeroes $\alpha\, and\, \beta$ of a quadratic polynomial $ax^2 + bx + c + 0$ by splitting the middle term and verify $\alpha + \beta = \frac{-b}{a}$ and $\alpha\beta = \frac{c}{a}$	H/W (Qns from exercises) Oral test Class test-3
Finding the quadratic polynomial whose zeroes are given and division algorithm of polynomials.	To make the polynomial as $k[x^2 - (sum)x + product]$ To find the zeroes of 4th degree polynomial two of whose zeroes given	Find the sum and product of the given zeroes and put in the formula , take k= LCM of the D^rs of $\alpha + \beta$ and $\alpha\beta$. Verify division algorithm using different polynomials and demonstrate the method to find the zeroes of 4th degree polynomial	

Date:-　　　　　　**Name and Signature of the Teacher:-**　　　　　　VP

Lesson Plan –Teachers Diary   [A] Planning Format   Annexure – 1

Class/Section :- X C   **Chapter:-Pair of Linear Equations in two variables**   **Date of Commencement:-15/06/2017**

Subject :- MATHS   **No. of periods:- 19   .**   **Expected date of completion:- 30/06/2017**

Actual date of completion:-

Gist Of The lesson	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
Focused skills/Competencies			
Pair of linear Equations in two variables- the graphical representation and the meaning of solution.	Understand the standard form of a pair of linear equations in two variables and the pair of linear equations represent a pair of straight lines which may have unique solution or infinite solutions or no solution so that the lines may be intersecting at a point or may be coincident or parallel	Show different situations that can be converted into a pair of linear equations in two variables. Make the children understand the method of drawing the graph of the given pair of linear equations. Let the children verify the consistency of a given pair of linear equations from the graph	H/W (Qns from exercises) Oral test Class test-1
Verifying the consistency of a pair of linear equations by comparing the coefficients of the variables	To understand the algebraic method to verify the consistency of the pair of linear equations.	From different examples discuss the following conditions $\frac{a1}{a2} \neq \frac{b1}{b2} \rightarrow$ consistent (unique solution) $\frac{a1}{a2} = \frac{b1}{b2} = \frac{c1}{c2} \rightarrow$ consistent (many solutions) $\frac{a1}{a2} = \frac{b1}{b2} \neq \frac{c1}{c2} \rightarrow$ inconsistent (no solution)	H/W (Qns from exercises) Oral test Class test-2 Lab Activity- Verifying the consistency of a pair of linear equations algebraically and graphically.
Solution of a pair of linear equations in two variables: 1) Substitution Method	Write one variable in terms of the other variable. Substitute the value of one variable in an equation. Solve a linear equation in one variable	Demonstrate the method of substitution through the egs. $x + y = 2$......(1) $2x + 3y = 5$.........(2) **(1)** $\Rightarrow y = 2 - x$..... (3) **sub. (3) in (2)** $2x + 3(2 - x) = 5$ $2x + 6 - 3x = 5$ $-x = 5 - 6 = -1$ $\therefore x = 1$ **then** $y = 2 - 1 = 1.$ **Let the children do more problems**	
2) Elimination method And 3) Cross multiplication method	How to make the coefficients of the variables same? Eliminate one variable by addition or subtraction and solve for finding the value of the other variable. Understand the cross multiplication method	Demonstrate the method by using examples. Make the children understand the method and apply elimination method and cross multiplication method in more problems	H/W (Qns from exercises) Oral test Class test-3 Revising problems from R D Sharma
Equations reducible to a pair of linear equations in two variables.	To convert a situation numerically in the form of a pair of linear equations in two variables by substitution.	Explain different word problems that can be converted into linear equations in two variables and let the children do more problems from the text book	

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Lesson Plan –Teachers Diary   **[A] Planning Format**   **Annexure – 1**

Class/Section :- X C   **Chapter:-Quadratic Equations**   **Date of Commencement:-5/07/2017**

Subject :- MATHS   **No. of periods:-   15   .**   **Expected date of completion:- 10/07/2017**

Actual date of completion:-

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
Quadratic Equations: Standard form of a Quadratic equation. Frame a quadratic Equation	Understand p(x)=0 is a quadratic equation if p(x) is of degree 2 and its standard form is $ax^2 + bx + c = 0$, where $a,\ b\ and\ c$ are real numbers and $a\neq0$. Verify the given equation is quadratic or not. Make a quadratic equation by using the relations in a given situation.	Make the children understand that the standard form of a quadratic equation is $ax^2 + bx + c = 0$ and how to verify the given equation is quadratic or not by checking the degree of it. Explain with the help of some examples. 'The length of a rectangle is 3 more than its breadth and the area of the rectangle is 65 sq. units.' Let the breadth=x and then the length = x+3 Area=length×breadth=x(x+3)=65. OR $x^2 + 3x = 65$ which is the required quadratic equation.	H/W (Qns from exercises) Oral test Class test-1
Solution of Quadratic equation by factorisation	How to find the solutions or roots of an equation by splitting the middle term	Explain the method by solving a quadratic equation. $x^2 + 5x + 6 = 0 \to x^2 + 3x + 2x + 2\times3 = x(x + 3) + 2(x + 3) =$	H/W (Qns from exercises) Oral test Class test-2
Solution of quadratic equation by completing the square.	If the equation is of the form $(x + a)^2 = b$ Then $x + a = \pm\sqrt{b}$ so that $x = \ - a\pm\sqrt{b}$	Demonstrate the method by doing one problem on the black board. $x^2 + 5x + 6 = 0 \to x^2 + 5x =- 6 \to x^2 + 5x + \left(\frac{5}{2}\right)^2 =- 6 + \left(\frac{5}{2}\right)^2$ $(x + \frac{5}{2})^2 = \ - 6 + \frac{25}{4} = \frac{-24+25}{4} = \frac{1}{4}$ $x + \frac{5}{2} = \ \pm\frac{1}{2} \to x =- \frac{5}{2} \pm \frac{1}{2}$	Lab Activity- Fid the solution by completing the square..

Solution by Quadratic Formula and Nature of roots	Application of quadratic formula $\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ to solve a quadratic equation $ax^2+bx+c=0$ and verify the nature of roots	Show how to substitute a, b and c from the given equation to get the solution and from various equations make the children that (i) if $b^2-4ac=o$ then equal real roots (ii) if $b^2-4ac>0$ two distict real roots and (iii) if $b^2-4ac<0$ the roots are imaginary.	H/W (Qns from exercises) Oral test Class test-3 Revising problems from R D Sharma
Applications of quadratic equations	Apply the methods of solving quadratic equations in word problems	Make the children able to frame Quadratic equation from a given situation and solve that by using any method.	

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Class/Section :- 10 C   **Chapter:- ARITHMETIC PROGRESSIONS**   **Date of Commencement:- 17/7/17**

Subject :- MATHS   **No. of periods:-15**   **Expected date of completion:- 31/717**   **Actual date of Completion:-**

Gist Of The lesson / Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
Introduction: Sequence and series. Arithmetic Progression.	**Understand the difference between sequence and series** **To understand the meaning/form of an A.P, terms of an A.P, first term and common difference of an A.P. How to verify whether the given sequence is an A.P or not.**	$a_1, a_2, a_3, a_4, \ldots\ldots$ is a sequence and $a_1 + a_2 + a_3 + a_4 + \ldots\ldots$ is a series. $a_1, a_2, a_3, a_4, \ldots\ldots$ is an A.P if $a_2 - a_1 = a_3 - a_2 = \ldots\ldots = d$, which is called the Common Difference . $-5, -1, 3, 7, \ldots$ is an A.P with first term -5 and $-1 - (-5) = -1 + 5 = 4$ is the common difference.	H/W Class Assignments Extra questions from the reference books.
n^{th} term of an A.P	**Find the nth of an A.P from the 1st term and from the last term.** **Apply the formula for finding the nth term in daily life problems**	Explain how to get the formula if we have the first term and the common difference of the A.P If a is the first term and d is the common difference 1st term=a, 2nd term= a+d , 3rd term = a+2d, 4th term = a+3d,.....n^{th} term= a+(n− 1)d. If l is the last term then the 1st term from the last= l− d, 2nd term= l−2d, 3rd term=l− 3d....... n^{th} term from the last term = l−(n−1)d. Demonstrate with different problems.	H/W Class Assignments Extra questions from the reference books. Class Test-1
Sum first n terms of an A.P	**Find the sum of first n terms of a given A.P by using the formula** $Sn = \frac{n}{2}(2a + (n-1)d).$ **The sum of first n natural numbers is** $\frac{n(n+1)}{2}$	Show different situations explain how the formulae $Sn = \frac{n}{2}(2a + (n-1)d)$ and $Sn = \frac{n}{2}(a + an)$ Demonstrate all types of questions from the exercise and examples on the black board Make the children understand that if any one of the variables is given the fourth can be calculated from the formula of a_n and S_n	H/W Class Assignments Extra questions from the reference books. Class Test-2 Lab Activity:- Verifying a given sequence A.P or not by cutting and pasting

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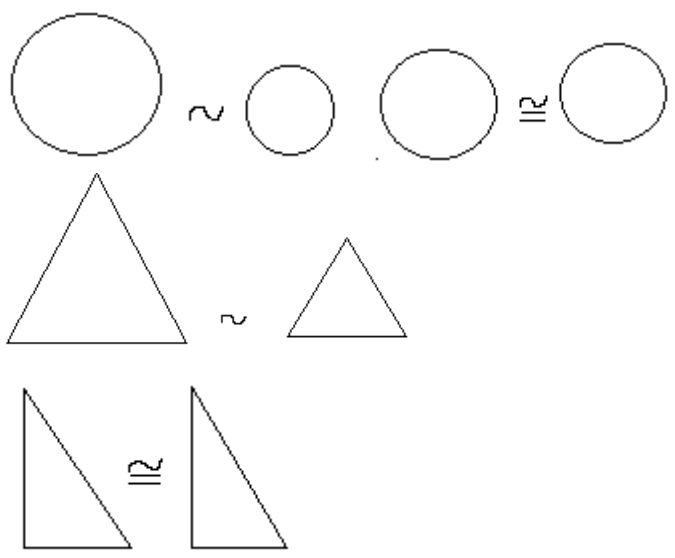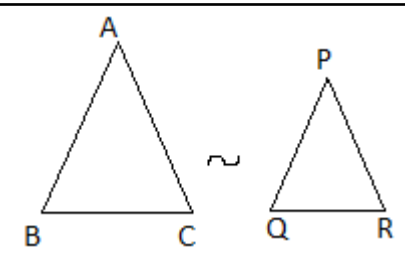Class/Section :- 10   Chapter:- TRIANGLES   Date of Commencement:- 1/8/17
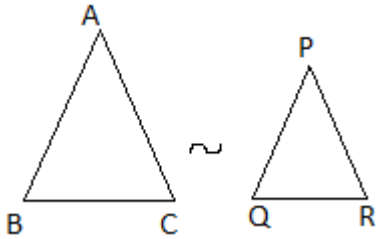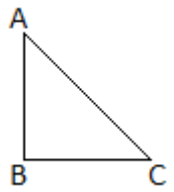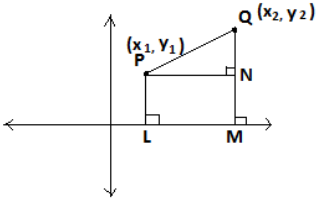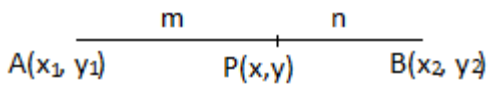
Subject :- MATHS   No. of periods:-15   Expected date of completion:- 14/8/17   Actual date of Completion:-

Gist Of The lesson / Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
SIMILAR FIGURES SIMILARITY IN POLYGONS	The meaning of similarity in figures. How to distinguish between the congruency and similarity of figures ? What is the relation between congruent figures and similar figures ? Two polygons are said to be similar if (i) the corresponding angles are equal (ii) the corresponding sides are proportional	Similarity means figures having the same shape and congruency means same size and shape 	H/W Class Assignments Extra questions from the reference books.
SIMILARITY OF TRIANGLES	Understand the conditions of similarity of triangles and How to prove BPT ?	 if and only if (i) <A=<P, <B=<Q, <C=<R and (ii) $\frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$	H/W Class Assignments Extra questions from the reference books. Class Test-1

		Demonstrate the proof of BPT on the black board and do the exercise problems.	
CRITERIA FOR SIMILARITY OF TRIANGLES	**Understand the different criteria Like AA, AAA,SSS AND SAS And how to apply them in the problems**	Explain the different criteria for similarity by showing them in different problems.	H/W Class Assignments Extra questions from the reference books. Class Test-2 Lab Activity:- Verifying BPT/Pythagoras theorem
AREAS OF SIMILAR TRIANGLES	**Understand the theorem that ' The ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides'.**	then the theorem states that $\frac{ar(\Delta ABC)}{ar(\Delta PQR)} = (\frac{AB}{PQ})^2 = (\frac{BC}{QR})^2 = (\frac{AC}{PR})^2$ Apply the theorem in various problems.	
PYTHAGORAS THEOREM AND ITS CONVERSE	**Understand the proof of Pythagoras theorem and the proof of its converse.**	Demonstrate both proofs on the black board by involving the children. ΔABC is right angled at <B then $AC^2 = BC^2 + AB^2$ and the converse is if in ΔABC if $AC^2 = BC^2 + AB^2$ the angle opposite to AC will be 90^0	

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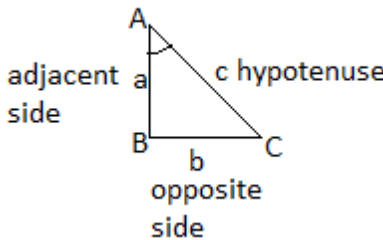**Lesson Plan –Teachers Diary** **[A] Planning Format** **Annexure – 1**

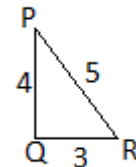Class/Section :- X Chapter:-COORDINATE GEOMETRY Date of Commencement:-25/8/17
Subject :- MATHEMATICS No. of periods:- 10 Expected date of completion:-7/9/17 Actual date of Completion:-

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION **AND** **DISTANCE FORMULA**	Understand the Cartesian system and how to plot the coordinates in the xy-plane. Understand the distance formula to find the distance between two given points whose coordinates are known and they should be able to apply the formula in different situations.	Demonstrate the formation of distance formula on the black board and make the children able to apply the formula in different problems. LM= $x_2 - x_1$, QN= $y_2 - y_1$. By Pythagoras theorem PQ =$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ which is called the distance formula. Help the children to find the distance between two given points by using this formula by using different problems from the text book.	H/W Class Assignments Extra questions from the reference books. Oral Test Class Test-1
SECTION FORMULA **MID-POINT FORMULA**	To understand the section formula to find the coordinates of point of division of a line segment which divides it in the ratio m:n	 $x = \dfrac{mx_2 + nx_1}{m+n}$ $y = \dfrac{my_2 + ny_1}{m+n}$ Find the coordinates of P which divides the line segment joining A(3,2) and B(1,3) in the ratio 1:2	H/W Class Assignments

COORDINATES OF CENTROID OF A TRIANGLE		Make the children understand how to solve such problems. By using section formula derive mid –point formula and coordinates of centroid as $x = \frac{x_1 + x_2}{2}$, $y = \frac{y_1 + y_2}{2}$ and $x = \frac{x_1 + x_2 + x_3}{3}$ $y = \frac{y_1 + y_2 + y_3}{3}$	Extra questions from the reference books. Class Test-2
AREA OF TRIANGLE AREA OF QUADRILATERAL CONDITION OF COLLINEARITY OF THREE GIVEN POINTS.	Able to apply the formula for finding the area of triangle to find the area of a triangle, to find the area of a quadrilateral, to verify whether the given points are collinear or not.	Demonstrate the formula for finding the area for finding the area of triangle whose vertices are $A(x_1, y_1)$, $B(x_2, y_2)$ And $C(x_3, y_3)$ is $ar(\Delta ABC) = \frac{1}{2}[x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)]$ If three given points A, B and C are collinear then ar(Δ ABC)=0 To find the area of a quadrilateral divide the quadrilateral into two triangles by joining one diagonal. Show the methods in different problems.	H/W Class Assignments Extra questions from the reference books Dictation Oral Test. LAT

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Class/Section :- X   **Chapter:- INTRODUCTION TO TRIGONOMETRY**   **Date of Commencement:- 8/9/17**
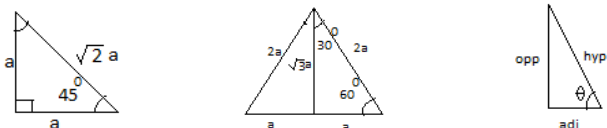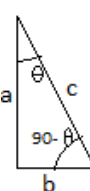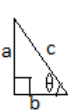
Subject :- MATHS   **No. of periods:- 12**   **Expected date of completion:- 25/9/17**   **Actual date of Completion:-**

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION OF TRIGONOMETRIC RATIOS	**Able to understand how to name the three sides of a right angled triangle with respect to an acute angle and how to define the T-ratios.**	Introduce Trigonometric ratios as the ratios of sides of a right angled triangle. The ratios $\frac{a}{b}$, $\frac{b}{a}$, $\frac{a}{c}$, $\frac{c}{a}$, $\frac{b}{c}$, $\frac{c}{b}$ are called T-ratios they are specifically defined as follows. $Sine\ of < A = \frac{opp}{hyp}\ or\ SinA = \frac{opp}{hyp}$ $Cosine\ of < A = \frac{adj}{hyp}\ or\ CosA = \frac{adj}{hyp}$ **Tangent of <A** $= \frac{opp}{adj}\ or\ TanA = \frac{opp}{adj}$ $Cosecant\ of < A = \frac{hyp}{opp}\ or\ CosecA = \frac{hyp}{opp}$ $Secant\ of < A = \frac{hyp}{adj}\ or\ SecA = \frac{hyp}{adj}$ $Cotangent\ of < A = \frac{adj}{opp}\ or\ CotA = \frac{adj}{opp}$	Oral test Dictation Name the sides with respect to <P and write the T- ratios of <P

To find the T-ratios of an angle from a given triangle with known sides	Able to know how to find the unknown side by using Pythagoras theorem and how to write the T-ratios.	If a T-ratio is given or two sides are given the third side can be calculated by using Pythagoras theorem. Then write the other T- ratios. If $Cos\theta = \frac{3}{5}$ the adj side and hyp can be taken as 3k and 5k so that the other side is 4k. But in the ratios k will be cancelled. Do different problems from the exercise.	C/W and H/W Class test

T- ratios of specific angles	Understand the T-ratios of 0^0, $30^0,45^0$, $60^0,90^0$ and able to apply the values in different problems.	From a right angled isosceles triangle get the T-ratios of 45^0 And from an equilateral triangle we get the T-ratios 30^0 and 60^0 $Sin45^0 = \frac{a}{\sqrt{2}a} = \frac{1}{\sqrt{2}}$, $Cos45^0 = \frac{a}{\sqrt{2}a} = \frac{1}{\sqrt{2}}$, $Tan45^0 = \frac{a}{a} = 1$ $Cosec45^0 = \frac{\sqrt{2}}{1}$, $Sec45^0 = \frac{\sqrt{2}}{1}$, $Cot45^0 = 1$ $Sin30^0 = \frac{a}{2a} = \frac{1}{2}$, $Cos30^0 = \frac{\sqrt{3}}{2a} = \frac{\sqrt{3}}{2}$, $Tan30^0 = \frac{1}{\sqrt{3}}$ Similarly define T-ratios of 60^0 When $\theta = 0$ then opp.side=0 adj side=hyp then Sin0=0 Cos0=1 and hence define the other ratios. When $\theta = 90^0$ then adj side =0 and opp=hyp So Sin $90^0 = 1$ **Cos**$90^0 = 0$ and hence the other rarios.	H/W Class Assignments Extra questions from the reference books Dictation Oral Test.
T-ratios of Complementary angles.	To know the relation between the T-ratios of an angle and its complementary angle.	 **Sin** $\theta = \frac{b}{c}$ **=Cos(90− θ), Cos** $\theta = \frac{a}{c}$**= Sin (90− θ)** Similarly the other ratios and apply these relations in simplifying the given expressions.	H/W Class Assignments Extra questions from the reference books Dictation Oral Test.
Trigonometric identities	To understand the basic identities $Sin^2\theta + Cos^2\theta = 1$ $Sec^2\theta - Tan^2 = 1 \ and$	 $a^2 + b^2 = c^2 \Rightarrow \frac{a^2}{c^2} + \frac{b^2}{c^2} = 1 \Rightarrow Sin^2\theta + Cos^2\theta = 1$	

	$Cosec^2\theta - Cot^2\theta = 1$ $\frac{Sin\theta}{Cos\theta} = Tan\theta \ and \ \frac{Cos\theta}{Sin\theta} = Cot\theta$	$\frac{a^2}{b^2} + 1 = \frac{c^2}{b^2} \Rightarrow Tan^2\theta + 1 = Sec^2\theta$ $1 + \frac{b^2}{a^2} = \frac{c^2}{a^2} \Rightarrow 1 + Cot^2\theta = Cosec^2\theta$ **Demonstrate the applications of these identities in various problems on the b lack board.**	LAT

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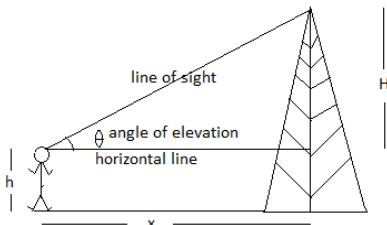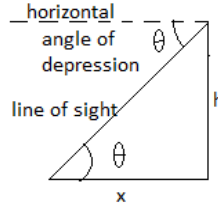
Class/Section :- X **Chapter:- SOME APPLICATIONS OF TRIGONOMETRY** **Date of Commencement:-**
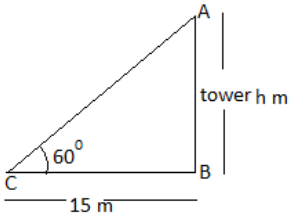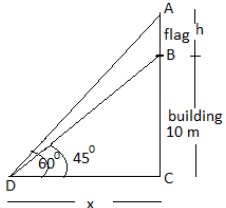**Subject :- MATHS** **No. of periods:- 9** **Expected date of completion:-** **Actual date of Completion:-**

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION **ANGLE OF ELEVATION AND ANGLE OF DEPRESSION** **Skill:- Understanding, creativity** **and applications**	**Understand the angle of elevation and angle of depression and what is the use of them.** **Apply the concept of trigonometry to find the height/distance .**	**Explain angle of elevation and depression through power point presentation and by drawing them on the board** $tan\theta = \frac{H}{x}$ **then H = tanθ $\times x$ then height of the tower = H+h** $tan\theta = \frac{h}{x}$ **Explain the concepts using different examples.**	**H/W** **Class Assignments** **Extra questions from the reference books** **Dictation** **Oral Test.** **Class Test**

PROBLEMS CONTAINING ONLY ON UNKNOWN	**Understand the problems containing only one unknown either height or distance.**	Demonstrate egs1 $tan60 = \dfrac{h}{15}$ $\dfrac{\sqrt{3}}{1} = \dfrac{h}{15}$ $h = 15\sqrt{3}$ **m**	
PROBLEMS CONTAINING TWO UNKNOWNS	**Understand how to make the conditions from the given situations and solve for the unknowns.**	 **Egs: 4** $In\ \Delta BCD\ \ tan45 = \dfrac{10}{x}$ $1 = \dfrac{10}{x}$ $x = 10\ m$ $In\ \Delta ACD\ \tan\ tan\ 60 = \dfrac{h+10}{x}$ $\sqrt{3} = \dfrac{h+10}{10}$ $10\sqrt{3} = h + 10$ $h = 10\sqrt{3} - 10$ $= 10\left(\sqrt{3} - 1\right)$ $= 10 \times 0.732$ $= 7.32\ m$ **Demonstrate the applied level questions and make the children understand how to draw the figure from the given situations and how to make the conditions in trigonometric ratios.**	**H/W** **Class Assignments** **Extra questions from the reference books** **Dictation** **Oral Test.** **LAT**

Date:-   **Name and Signature of the Teacher:-**   **VP**

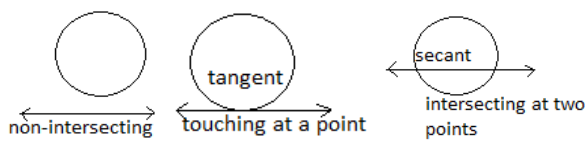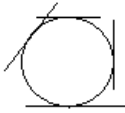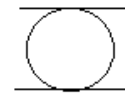# Lesson Plan –Teachers Diary   [A] Planning Format   Annexure – 1

Class/Section :- X   **Chapter:- CIRCLES**   **Date of Commencement:-**

Subject :- MATHS   **No. of periods:- 07**   **Expected date of completion:-**   **Actual date of Completion:-**

Gist Of The lesson / Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION:- TANGENTS AND SECANTS **Skill:- Understanding**	Understand the three different cases in which a circle and a line can be drawn together on the same plane. Identify which is tangent and which is normal	non-intersecting / tangent / touching at a point / secant / intersecting at two points The line just touches the circle at one point is called a tangent to the circle The point at which the tangent touches the circle is called the pint of _contact._ The line which intersect the circle at two distinct points is called a secant.	H/W Class Assignments Extra questions from the reference books Dictation Oral Test.

			Class Test

PROPERTIES OF TANGENTS TO A CIRCLE
 	
 Skill:- Understanding, creativity
	Understand the properties of tangents
	
	 Understand the theorem " The tangent is perpendicular to the radius at the point of contact".
		On a circle _infinite_ tangents can be drawn.
		  A circle can have two parallel tangents at most.
		  From a given external point two tangents can be drawn.
		  Given circle with centre O.
		 Let XY is a tangent at P.
		 Let Q be an arbitrary point on XY.
		 Join OP and OQ
		 If Q lies in the interior XY becomes a tangent which is not possible.	

		If Q lies on the circle XY has two points of intersection with the circle which is not possible. **So Q must lie in the exterior of the circle.** **Hence OQ>OP, the radius.** **Since Q is arbitrary OP is the shortest distance from O to XY.** **Hence OP⊥XY.** **Do the problems based on the theorem.**	**H/W** **Class Assignments** **Extra questions from the reference books**
TANGENTS DRAWN FROM A POINT ON A CIRCLE **Skill:- Understanding, application, thinking**	**Understand the concept of length of tangent from an external point to a circle** **Application of congruence of triangles in proving the theorem " Two tangents drawn from an external point to a circle are equal in length".**	**The length of tangent from an external point to a circle is defined as the distance from the external point and the point of contact.** **In** $\Delta PAO\ and\ \Delta PBO$ $< PAO\ =< PBO\ =\ 90^{0}$ **(OA⊥PA and OB⊥ PB)** $OA\ =\ OB$ **(radii of the same circle)** **OP=OP (common)** $\Delta PAO \cong PBO$ **(RHS congruence rule)** **PA=PB (CPCT)**	**reference books** **Dictation** **Oral Test.** **LAT**

	DO the egs and the exercise problems and make the children understand the theorem and its applications.	

Date:-   **Name and Signature of the Teacher:-**   **VP**

Lesson Plan –Teachers Diary   **[A] Planning Format**   **Annexure – 1**
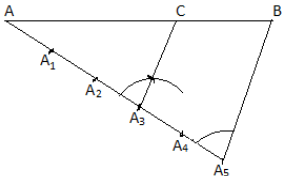
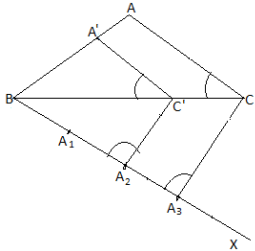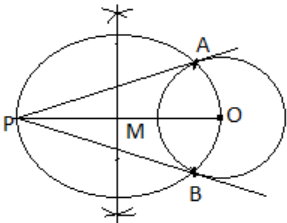**Class/Section :- X**   **Chapter:- CONSTRUCTIONS**   **Date of Commencement:-**

Subject :-   **No. of periods:- 06**   **Expected date of completion:-**   **Actual date of Completion:-**

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
CONSTRUCTION 1-Divide a line segment in a given ratio. Skill:- Understanding, Drawing	To draw a line segment and divide it in a given ratio.	Demonstrate the construction by drawing a line segment of length 7cm and divide it in the ratio 2:3. 1) Draw AB = 7 cm 2) Draw AX making an acute angle with AB	H/W Class Assignments

		3) Mark 5 (2+3) equidistant points on AX such that $AA_1=AA_2=AA_3=AA_4=AA_5$ 4) Join BA_5 5) Through A_3 draw a line parallel to BA_5 which intersect AB at C such that AC:CB=2:3(by BPT) Make the children understand the method through different examples	**Extra questions from the reference books** **Dictation**
CONSTRUCTION 2:- Draw a triangle similar to a given triangle with a given scale factor	**Understand the concept of scale factor and how to draw a triangle similar to a given triangle with the given scale factor.**	 **1) Draw the given triangle ABC** **2) Draw ray BX making acute angle with BC** **3) Mark A_1,A_2,and A_3 (3 is the max)on BX such that they are equidistant.** **4) Join CA_3(the D^r)** **5) Draw line through A_2 parallel to CA_3which intersect BC at C'.** **6) Draw a line parallel to AC through C' which intersect AB at A'.** **Then A'BC' is the required triangle by BPT.** **Similarly explain with figure the case where D^r is less.**	**Oral Test.** **Class Test**
CONSTRUCTION3:- Construction of tangents to a circle from an external point Skill:-understanding, Drawing	**Understand the method construction of tangents to a circle from an external point.**	 **1) Draw the given circle with centre O.** **2) Mark the point P with the given condition.** **3) Join OP.** **4) Draw perpendicular bisector of OP such that M is the mid-point.** **5) With M as centre and PM as the radius draw another circle which intersect the given circle at A and B.** **6) Join PA and PB which are the required tangents** **Draw the figures from the exercise.**	**H/W** **Class Assignments** **Extra questions from the reference books** **Dictation** **Oral Test.** **LAT**

Date:-   **Name and Signature of the Teacher:-**   **VP**

Lesson Plan –Teachers Diary   [A] Planning Format   Annexure – 1

Class/Section :- X   Chapter:- AREA RELATED TO CIRCLES   Date of Commencement:-
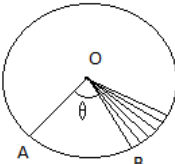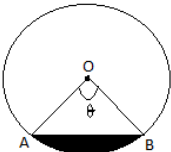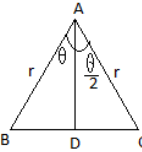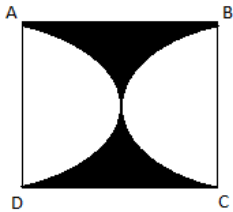
Subject :- MATHS   No. of periods:-   Expected date of completion:-   Actual date of Completion:-

Gist Of The lesson / Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION: AREA AND PERIMETER OF A CIRCLE	Understand the formula for finding the area and perimeter of a circle	Area of a circle $=\pi r^{2}$ and perimeter or circumference of a circle $= 2\pi r$ where r is the radius of the circle and $\pi = \frac{22}{7}$ or 3.14. Demonstrate different problems from the examples and exercise. Make the children understand how the formulae can be used in various situations.	**H/W** **Class Assignments**

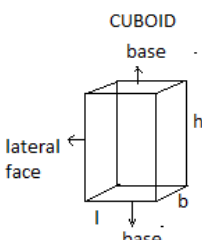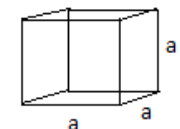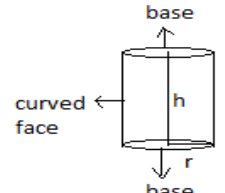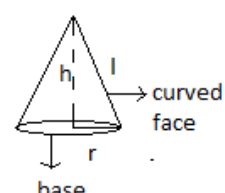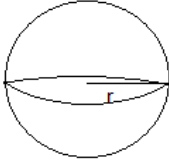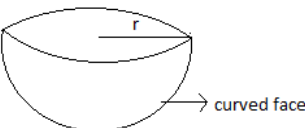|		Make the understand how the formula is developed.	**Extra questions from the reference books**
AREA OF SECTOR	Understand the formula for the area of a sector and the use of it in the different situations Applications of the formulae in the daily life problems	The circle is divided into 360 equal sectors of area $\frac{\pi r^2}{360}$. So the area of a sector of central angle is θ is given by $\frac{\pi r^2}{360} \times \theta$ or $\frac{\theta}{360} \times \pi r^2$ Also the length of the arc is given by $\frac{\theta}{360} \times 2\,\pi r$ Demonstrate the egs as well as the exercise problems	**Dictation** **Oral Test.** **Class Test**
SEGMENT OF A CIRCLE	Understand the formula for finding the area of a segment Apply the formula in various problems.	Area of the segment = area of the sector – area of the triangle In ΔADC ,r sin $sin \frac{\theta}{2}$ = DC and $r \cos cos \frac{\theta}{2}$ =AD $$\therefore ar(\Delta ABC) = \frac{1}{2}BC \times AD$$ $$= \frac{1}{2} \times 2 \times r\ sin\ sin\ \frac{\theta}{2}\ r\ cos\ cos\ \frac{\theta}{2} =$$ $$r^2\ sin\ sin\ \frac{\theta}{2}\ cos\ cos\ \frac{\theta}{2}$$ Area of segment = $\frac{\theta}{360} \times \pi r^2$ $- \quad r^2\ sin\ sin\ \frac{\theta}{2}\ cos\ cos\ \frac{\theta}{2}$ Use the formulae in various problems from the text book	
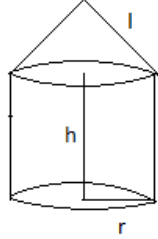
AREA OF COMBINATION OF PLANE FIGURES	Understand how to find the area of combined figure.	In the given figure the shaded region is given by area of square – area of two semi circles. Like this examples make the children understand how to identify the shaded region and how that area can be written in terms of areas of plane figures.	**H/W** **Class Assignments** **Extra questions from the reference books** **Dictation** **Oral Test.** **Lab Activity:-** **LAT**

Date:-   **Name and Signature of the Teacher:-**   **VP**
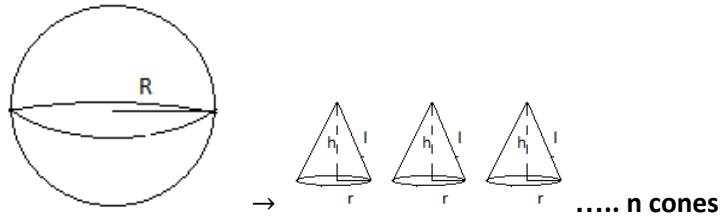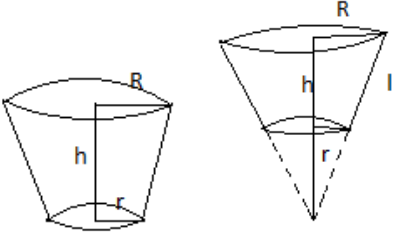
Lesson Plan –Teachers Diary   [A] Planning Format   Annexure – 1

Class/Section :- X   Chapter:-SURFACE AREAS AND VOLUMES   Date of Commencement:-

Subject :- MATHS   No. of periods:- 12   Expected date of completion:-   Actual date of Completion:-

Gist Of The lesson / Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION:-SURFACE AREA AND VOLUMES OF CUBOID CUBE	To understand the concept of surface area and volume of solids. To understand the formula for finding the surface area and volume	Demonstration through Power Point. CUBOID Total base area = 2lb, LSA= 2(lh+bh) And TSA= 2(lb+lh+bh) Volume = lbh	H/W Class Assignments Extra questions from the reference books
SURFACE AREA AND VOLUMES OF CUBOID AND CUBE	of different solids already the children had learned in the previous classes.	CUBE Total base area a^2, LSA= $4a^2$ And TSA= $6a^2$ Volume =a^3	Dictation Oral Test. Class Test
SURFACE AREA AND VOLUMES OF CYLINDER		CYLINDER Total base area = $2\pi r^2$, CSA= $2\pi rh$ And TSA= $2\pi r(r + h)$, Volume = $\pi r^2 h$	
SURFACE AREA AND VOLUMES OF CONE	To understand the concept of surface area and volume of solids. To understand the formula for	CONE base area = πr^2, CSA= πrl And TSA= $\pi r(r + l)$, Volume =$\frac{1}{3}\pi r^2 h$	H/W Class Assignments

SURFACE AREA AND VOLUMES OF SPHERE	finding the surface area and volume of different solids already the children had learned in the previous	SPHERE Surface *area* = $4\pi r^2$, **Volume** = $\frac{4}{3}\pi r^3$	Extra questions from the reference books Dictation Oral Test.
SURFACE AREA AND VOLUMES OF HEMISPHERE		HEMISPHERE → curved face *base area* = πr^2, **CSA**= $2\pi r^2$ And **TSA**= $\pi r(r + l)$, **Volume** =$\frac{1}{3}\pi r^2 h$ **Make the children understand the different formulae and explain how to use them in various problems**	
SURFACE AREA AND VOLUMES OF COMBINATION OF SOLIDS	Understand the formulae for finding the TSA and Volume of combination of different solids	**Make the children understand the meaning of the combination of solids and how to identify their surfaces and how to find its area how to get the volume** **TSA = CSA of cone + CSA of cylinder +** **base area of cylinder** = $\pi r l + 2\pi r h + \pi r^2$ **Volume = Volume of cone + volume of cylinder** = $\frac{1}{3}\pi r^2 h += \pi r^2 h$	

		Demonstrate more problems from the egs and exercises.	**H/W** **Class Assignments** **Extra questions from the reference books** **Dictation**

CONVERSION OF SOLIDS INTO ANOTHER SHAPE	Understand that when a solid is converted into another solid the volume remains the same.	SPHERE → ..... n cones Then the volume of n cones = volume of the circle. Use the concept in different problems.	Oral Test. Lab Activity:-Surface area of a cylinder LAT
SURFACE AREA AND VOLUME OF A FRUSTUM.	To understand the concept of frustum and how to find the TSA and Volume of the frustum	Demonstrate the shape of frustum by drawing on the board and show its relation with a cone. CSA of the frustum = $\pi\left(r_1 + r_2\right)l$ where $l = \sqrt{h^2 + (r_1 - r_2)^2}$ TSA $= \pi r_1^2 + \pi r_2^2 += \pi\left(r_1 + r_2\right)l$ Volume $= \frac{1}{3}\pi h(r_1^2 + r_2^2 + r_1 r_2)$	

Date:-   Name and Signature of the Teacher:-

Lesson Plan –Teachers Diary   [A] Planning Format   Annexure – 1

Class/Section :-   X   **Chapter:- PROBABILITY**   **Date of Commencement:-**

Subject :- MATHS   **No. of periods:- 6**   **Expected date of completion:-**   **Actual date of Completion:-**

Gist Of The lesson Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION:- BASIC TERMS RELATED WITH PEOBABILITY	To understand the concept of certain, impossible and uncertain situations.	Make the children understand the concept of certainty, impossibility and uncertainty through different examples from the daily life. 'Take a blue pen from a box containing blue pens only' is certain to be happened. 'Take a blue pen from a box containing black pens only' is impossible. 'Take a blue pen from a box containing blue and black pens' is uncertain to be happened.	H/W
RANDOM EXPERIMENT	To understand what type of experiments are called random experiments.	An experiment having more than two results which vary in an unpredictable manner from trial to trial are called random experiments. 'Tossing of a coin' – the possible results are head and tail	Class Assignments
OUT COMES AND SAMPLE SPACE	To understand the concept of outcomes and able to write the sample space of a given experiment.	The result in a single trial is called an out come or elementary event. The collection of all possible outcomes of a random experiment is called the sample space of the experiment. In the experiment 'Tossing a coin' the out comes are head and tail. Then the sample space S = { H, T } If two coins are tossed S = { HH, HT, TH, TT } Make the children understand how to write the sample space through different examples.	Extra questions from the reference books Dictation Oral Test.
EVENTS, COMPLEMENTARY EVENTS AND EQUALLY LIKELY EVENTS	To understand the meaning of events ,the complementary events, equally likely events	An outcome or a collection of outcomes are called events. When a die is thrown 'getting the number 6' , ' getting an even number' are events. When an event occur the event which does not occur in the random experiment is called the complementary event. If A- the event occur the complementary event is represented by $\overline{A}$	

		When a coin is tossed 'getting head' and 'getting tail' are complementary events. The events having the same chances to be happened are called equally likely events. When a die is thrown 'getting the number 1' 'getting the number 6' are equally likely events. Make the children understand the concepts through various problems.	H/W Class Assignments
EXPERIMENTAL PROBABILTY ANF THEORETICAL PROBABILITY.	To understand the meaning of probability and how to find the probability of an event .	Experimental probability of an event is obtained by doing the experiment, and P(A) = $\frac{the\ no.\ of\ trials\ in\ which\ A\ is\ happened}{total\ no.\ of\ trials}$ Theoretical probability or classical probability is defined as P(A) = $\frac{the\ no.\ of\ oucomes\ favourable\ to\ the\ event\ A}{total\ no.\ of\ all\ possible\ outcomes} = \frac{n(A)}{n(S)}$ When a die is thrown the sample space is { 1,2,3,4,5,6 } P(a prime number) = $\frac{3}{6} = \frac{1}{2}$ (prime nos= 2,3,5) Explain the method to find the probability through different problems.	Extra questions from the reference books Dictation Oral Test.
PROPERTIES OF PROBABILITY	To be able to understand the properties of probability through different problems.	If A is an event which cannot be happened in the given random experiment then n(A) = 0. $P(A) \geq 0$ If A is sure to be happened, then n(A) = n(S). $\therefore P(A) = 1$ If A is an uncertain event the probability lies between 0 and 1 Consider the throwing of a die P(1)=P(2)=P(3)=P(4)=P(5)=P(6)=$\frac{1}{6}$ so that their sum is 1 Sum of the probabilities of the elementary events is 1. Hence the properties are 1) $0 \leq P(A) \leq 1$ 2) $P(S) = 1$ 3) $P(E_1) + P(E_2) + P(E_3)+ \ldots + P(E_n) = 1$ 4) $P(A) + P(\overline{A}) = 1$	LAT

Date:-   **Name and Signature of the Teacher:-**   **PRINCIPAL**

Class/Section :- X　　　　　　**Chapter:- STATISTICS**　　　　　　**Date of Commencement:-**
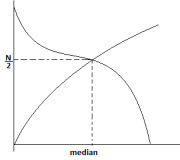
Subject :- MATHS　　　　**No. of periods:-10**　　　　**Expected date of completion:-**　　　　**Actual date of Completion:-**

Gist Of The lesson / Focused skills/Competencies	Targeted learning outcomes (TLO)	Teaching learning activities planned for achieving the TLO using suitable resources and classroom management strategies	ASSESSMENT STRATEGIES PLANNED
INTRODUCTION:- Measures of central tendency- MEAN, MEDIAN AND MODE	To understand the definitions and the calculations of mean, median and mode of a data.	Make the children understand that mean = $\frac{sum\ of\ the\ terms}{no.\ of\ terms}$ Median is the observation in middlemost position when the data is arranged in the ascending or descending order, And the mode is the most frequent item in the data. Explain the terms with simple examples.	H/W Class Assignments Extra questions from the reference books Dictation Oral Test.
MEAN OF A GROUPED DATA	To understand the formula and how to apply it in doing the problems	For an ungrouped frequency table having the observations x_1, x_2, x_3, x_4, …………, x_n with the respective frequencies f_1, f_2, f_3, f_4, …………… , f_n Then the arithmetic mean $\bar{x} = \frac{x_1 f_1 + x_2 f_2 + x_3 f_3 +, ………x_n f_n}{f_1 + f_2 + f_3 + f_4, ………+f_n}$ $\bar{x} = \frac{\Sigma xf}{\Sigma f}$ If the data is given in grouped frequency table take the mid-values (class marks) as the values of x_1, x_2, x_3, x_4, …………, x_n Class mark = $\frac{Upper\ class\ limit + Lower\ class\ limit}{2}$ Demonstrate different questions from the exercise.	
ASSUMED MEAN METHOD	To be able to do the problem in short way by taking deviations from an assumed mean.	From the given observations choose a middle value as the assumed mean say (A). Then find the deviations $x_1 - A$ $x_2 - A$, $x_3 - A$, $x_4 - A$, …………, $x_n - A$. Let them be d_1, d_2, d_4…………d_n then $\bar{x} = \bar{d}+A$ Demonstrate problems on the board.	

STEP-DEVIATION METHOD	To understand the shortest way to find the mean of a grouped data.	In this case find $\dfrac{x_1-A}{c}, \dfrac{x_2-A}{c}, \dfrac{x_3-A}{c}, \ldots\ldots\ldots, \dfrac{x_n-A}{c}$ where c is the class interval. Let them be $u_1, u_2, u_3, \ldots\ldots, u_n$ Then $\bar{x} = c\,\bar{u}+A$ Demonstrate problems on the board.
MODE OF A GROUPED DATA	To understand how to find the Mode of a grouped data	Identify the class having the highest frequency, called modal class. From this class the mode can be calculated by the formula **Mode** $= l + \left[\dfrac{f_1-f_0}{2f_1-f_0-f_2}\right]\times h$ Where l = lower limit of the modal class $h =$ size of the class interval f_1 = frequency of the modal class f_0 = frequency of the class preceding the modal class f_2 = frequency of the class succeeding the modal class. Apply the formula in different problems.

MEDIAN OF A GROUPED DATA	**To be able to find the cumulative frequency and apply the formula to find the median.**	Cumulative frequency can be defined in two ways less than and more than. Less than cumulative frequency of an observation is the total no. of observations up to that observation and more than cumulative frequency of an observations is the total number of observations more than that observation.
		To find the less than cumulative frequency add successively the frequencies starting from the first frequency and the more than cumulative frequency by subtracting the frequencies starting from the first frequency from the total no. of observations.
		To find the median make the less than cumulative frequency table. If N is odd find the cf in which N lies and then the corresponding observation is the median. If N is even Find the observation corresponding to $\frac{N}{2}$ and $\frac{N}{2}+1$ Then their average will be the median
		If the data is a continuous frequency distribution, find $\frac{N}{2}$ then the corresponding class is called median class. From the class median can be calculated by the formula, median $= l + \left[\dfrac{\frac{N}{2}-cf}{f}\right] \times h$
		Where $l =$ lower limit of median class
		    N = number of observations
		    cf = cumulative frequency of class preceding the median class
		    f = frequency of median class
		    h = class size
		Demonstrate the problems from the text book.
			Class Assignments
			
			Extra questions from the reference books
			
			Dictation
			
			Oral Test.
			
			Lab Activity:- Find the median from the ogives

GRAPHICAL REPRESENTATION OF CUMULATIVE FREQUENCY DISTRIBUTION TABLE	**To draw the cumulative frequency curves called ogives and how to find the median from the graph**	To draw the ogives take the class limits along the x-axis and cf along the y-axis. Plot the corresponding points and join them by free hand curve. They will intersect at a point corresponding to $\frac{N}{2}$ on y-axis, whose x-coordinate gives the median of the given data. Do more problems from the text book	**LAT**

Date:- **Name and Signature of the Teacher:-** **PRINCIPAL**