MATHEMATICS LESSON PLAN



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Unit: 01 Methodology: Demonstration & lecture

method Unit name: Rational numbers.

Date: From to

Objectives:

1. To understand the properties of rational numbers.

- 2. Concept of representation of rational numbers on number line.
- 3. Rational numbers between two rational numbers.

			Evaluation	Teachers	
Chama	Astinitias To Foresumble Fore	TTI NA	Tools &	1	TIM
<u>Steps</u>	Activities To Favourable For	TLM		Introspecti	E
	Learning		Technique	on	
	Ctant the accessor by abouting the	Classet	S	1A7:11 + + -	
F	Start the session by checking the	Chart,	Discussion	Will try to	
Engage	previous knowledge, by asking the questions related to rational numbers. In	ppt	& group	answers	
	previous class, they knew about rational	color chalks.	discussion.		
	numbers.	Chaiks.			
	Start the session by asking some	chalks,	Questionnai	Answering	
Explore	questions on rational numbers,	Numbers	re	for	
_	operations on rational numbers ect.	chart,		supplement	
	After getting different answers from the	ppt.		ary	
	class, introduce the chapter.	11		questions.	
	Introduction: example 2x=3 is a linear	chalks,	Discussion		
	equation,	Numbers	& group		
	x=3. This leads us to the collection of	chart,	activities		
	rational	ppt.			
	numbers.				
	Properties of rational numbers.				
	Explain the properties of rational				
Explain	numbers with examples.				
_	Closure property				
	 Commutative property Associative property 				
	 Additive inverse 				
	 Multiplicative Inverse Distributive property 				
	Representation of rational numbers				
	on number line:				
	Explain how to represents the rational				
	numbers on number line.				
	Since in $\frac{-5}{6}$, denominator is 6				
	We divide line between 0 & 1 into 6 equal parts.				
	-6 3 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1				
	Make group of students, guide them to	Exercise	Activity	Discussion	
	find the rational numbers. Students	problem		with	
Elaborat		s In		students	
e	numbers.	textbook			
Evaluat	Teacher will assign some problems	Textbook	Evaluation	Try to do	
e	to do work. Students should solve all			all	
	the problems given in the textbook.			problems	
				in	
				textbook.	

Unit: 02 Methodology: Demonstration & project

method Unit name: linear equations in one variable.

Date: From to

Objectives:

1. To solve the linear equations.

- 2. Concept of applications problems on linear equations.
- 3. Solving the equations having the variable on both sides.
- 4. Concept of reducing equations to simple form.

			Evaluation	Teachers	T1 N 4
<u>Steps</u>	Activities To Favourable For	TLM	Tools &	Introspecti	TIM E
25000	Learning		Technique	on	E
	3		s		
	Start the session by checking the	Chart,	Discussion	Will try to	
Engage	previous knowledge, by asking the	ppt	& group	answers	
	questions related to linear equations	color	discussion.		
	learn In previous class. Ask the	chalks.			
	questions about verbal problems like 'if	Projector			
	we add to				
	one number we will get 8".				
	Start the session by asking some	chalks,	Questionnai	Answering	
Explore	questions like 'if we subtract 15 from a	Numbers	re	for	
	number we get 12'. After getting	chart,		supplement	
	different answers from the class,	ppt.		ary	
	introduce the chapter.	1 11	D: :	questions.	
	Solution of linear equation: by taking	chalks,	Discussion		
	different examples, explain how to	Numbers	& group		
	solve the linear equations in simple	chart,	activities		
	Way.	ppt.			
	Example x+5=8, we will get x=3.	Projector			
	Applications: explain how we can solve the applications level by taking different				
Explain	examples. Example: 'one natural number				
Expluin	is 10 more than the other. Their sum is				
	74. Find the number'.				
	74. I ma the number.				
	5x + 1 = 3x + 5				
	X X X X				
	Make group of students, guide them	Exercise	Activity	Discussion	
	to solve the equations individually.	problem		with	
			1	L	

Elaborat	With the help of teacher, solve the	s In		students	
e	additional problems.	textbook			
Evaluat	Teacher will assign some problems to do	Textbook	Evaluation	Try to do all	
e	work. Students should solve all the			problems in	
	problems given in			textbook.	
	the textbook.				

Head master or mistress/Principal

Unit: 03 Methodology: Demonstration & lecture

method Unit name: Understanding quadrilateral.

Date: From to

Objectives:

1. Definition of polygons, classification.

2. Measurement of polygons.

3. Concept of Quadrilaterals & their types.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by asking the questions related to figures, closed open figures ect.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Start the session by asking some questions about curves, plane figure ect. After getting different answers introduce the chapter.	chalks, Numbers chart, ppt. Modals	Questionnai re	Answering for supplement ary questions.	
Explain	Polygons: a simple closed curve is made up of only line segments is called polygons. Triangle Quadrilateral Pentagon Hexagon Quadrilaterals: explain about the quadrilaterals and their properties. Quadrilateral Family Trapezoid Parallelogram Parallelogram Rectangle	chalks, Numbers chart, ppt. Projector	Discussion & group activities		

	Make group of students, guide them to identify different types of quadrilaterals.	Exercise	Activity	Discussion with	
Elaborat	With the help of teacher, solve the	s In		students	
e	additional problems.	textbook			
Evaluat	Teacher will assign some problems to do	Textbook	Evaluation	Try to do all	
e	work. Students should solve all the			problems in	
	problems given in			textbook.	
	the textbook.				

Head master or mistress/Principal

Unit: 04 Methodology: Demonstration & project

method. Unit name: Data handling.

Date: From to

Objectives:

1. Concept of data, representation of data.

- 2. To understand the different types of graphs.
- 3. Organizing data & grouping data.
- 4. Concept of probability & chances.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by asking questions related to data. Students already learnt about data earlier.	Chart, Ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Teacher will ask some questions about different types of grouping studies in previous year. Asks different questions and write on board, then introduce the chapter.	chalks, chart, ppt. projector	Questionnai re	Answering for supplement ary questions.	

	Introduction: give clear information of	Project	Discussion		
	data and representation of data on	or	& group		
	different types of graphs.	Geomet	activities		
Explain	Organizing data: explain how to organize the given data with different examples. Number of students Tally marks Frequency 1 1 1 6 1 1 1 7 1 1 1 7 1 1	ry kit Ppt. Marker Geogebr a Graph sheet			
	Chances and probability: explain				
	about probability and chances with				
	examples.				
	Make group of students, give some	Exercise	Activity	Discussion	
	problems for solve on different types	problem		with	
Elaborat	8 1	s In		students	
e	additional problems given by the teacher.	textbook	_		
Evaluat	Teacher will assign some problems to do	Textbook	Evaluation	Try to do all	
e	work. Students will solve all the			problems in	
	problems given in the textbook.			textbook.	

Head master or mistress/Principal

Unit: 05 Methodology: Demonstration cum lecture

 $method\ Unit\ name:\ Squares\ \&\ square\ roots.$

Date: From to

- 1. Concept of square numbers, properties & some more patterns.
- 2. Concept of Square roots.
- 3. Method of finding the square roots.
- 4. Square roots of decimals & estimation of square roots.
- 5. Concept of Quadrilaterals & their types.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by asking the numbers which are multiplied its self.	Chart, ppt color	Discussion & group discussion.	Will try to answers	

	They know the numbers, operations of numbers.	chalks.			
Explore	Start the session by asking some questions about numbers, like 'how much if3 is multiplied itself 2 times?'. Like other questions, we will get different answers from the class, then introduce the chapter.	chalks, Numbers chart, ppt. Modals	Questionnai re	Answering for supplement ary questions.	
Explain	Square numbers: explain about square numbers, and guide them to memorize the square numbers up 30 or 40. $1^2=1$ $2^2=4$ $3^2=9$ and so on Square roots: explain the square roots numbers, and also the method of finding the square roots. $\sqrt{9}=3, \sqrt{49}=7, \sqrt{121}=11.$	chalks, squares and roots chart, ppt. Projector	Discussion & group activities		
Elaborat e	Make group of students, give some problems to find the squares and square roots. With the help of teacher, solve the additional problems.	Exercise problem s In textbook	Activity	Discussion with students	
Evaluat e	Teacher will assign some problems to do work. Students should solve all the problems given in the textbook.	Textbook	Evaluation	Try to do all problems in textbook.	

Head master or mistress/Principal

Unit: 06 Methodology: Demonstration & lecture

method. Unit name: Cubes and cube roots.

Date: From to

Objectives:

1. Concept of cubes.

- 2. To understand the smallest multiple that is a perfect cube.
- 3. Concept of cube roots.
- 4. To find the cube roots by factorization method.
- 5. Cube root of a cube roots.

			Evaluation	Teachers	TIM
<u>Steps</u>	Activities To Favourable For	TLM	Tools &	Introspecti	E
	Learning		Technique	on	
			S		
	Start the session by checking the	Chart,	Discussion	Will try to	
Engage	previous knowledge, by asking	ppt	& group	answers	
	questions related to squares, square	color chalks.	discussion.		
	roots. Students already learnt	CHaiks.			
	about squares in the earlier. Start the session by asking some	chalks,	Questionnai	Answering	
Explore	questions like 'if a number is	chart,	re	for	
Explore	multiplied by 3 times what will get?'.	ppt.	16	supplement	
	Then introduce the chapter.	ppt.		ary	
	Then introduce the chapter.			questions.	
	Introduction: explain about cube	Projecto	Discussion	questions.	
	numbers, practice them to remember	r dies	& group		
	the cube numbers.	Ppt.	activities		
	When you multiply a number by itself, and then multiply it by itself	Γ.			
	again, you get a cube number.				
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				
Explain	$2^3 = 8$ $3 \times 3 \times 3 = \frac{27}{3}$				
	3 ³ = 27				
	Cube roots: explain about cube roots				
	with different examples.				
	$2 \xrightarrow{Cubing} 2^3 = 8$				
	$\sqrt[3]{8} = 2 \frac{Cube}{root} = 8$				
	Cube				
	Cube root				
	Make group of students, give some	Exercise	Activity	Discussion	
	problems to solve on cube and cube	problem		with	
Elaborat		s In		students	
e	additional problems.	textbook			
Evaluat	Teacher will assign some problems to do	Textbook	Evaluation	Try to do all	
e	work. Students should solve all the			problems in	
	problems given in			textbook.	
	the textbook.				

Head master or mistress/Principal

Unit: 07 Methodology: Demonstration & lecture

method. Unit name: COMPARING QUANTITIES.

Date: From to

Objectives:

1. Concept ratios and percentage.

2. To understand the discounts.

- 3. Simple and compound interest.
- 4. To learn about applications of compound interest.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by explaining about ratios and proportions. Students already learnt about proportions in previous chapter.	Chart, Ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Teacher will ask the class about quantities, percentage ect. After getting different answers from class, then introduce the chapter.	chalks, chart, ppt. projector	Questionnai re	Answering for supplement ary questions.	
Explain	Introduction: Explain about percentage and ratios. By taking different examples introduce the concept of discount. BEST PRICE Compound interest: introduce the concept of C.I then will do some problems on it. $A = P(1+i)^n$ A = final amount including principal P = principal amount i = interest rate per year $n = \text{number of years invested}$	Projecto r Ppt. Marke r Modal s 2D & 3D shapes.	Discussion & group activities		
Elaborat e	Make group of students, give some problems for solve on discounts, compound interests. Students will solve additional problems given by the teacher.	Exercise problem s In textbook	Activity	Discussion with students	
Evaluat e	Teacher will assign some problems to do work. Students will solve all the problems given in the textbook.	Textbook	Evaluation	Try to do all problems in textbook.	

Unit: 08 Methodology: Demonstration & lecture

method Unit name: Algebraic expressions and identities.

Date: From to

- 1. Concept of terms, factors and coefficients.
- 2. Addition and subtraction of algebraic expressions.
- 3. Multiplications of algebraic expressions.
- 4. Concept of identities.
- 5. To solve the problems on identities.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by asking questions on simple linear equations. x+3=5. They knew the knowledge of linear equations.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Start the session by asking some questions about linear equations, then introduce the chapter.	chalks, chart, ppt.	Questionnai re	Answering for supplement ary questions.	
Explain	Monomial, binomial & polynomials: explain about the terms factors, & coefficients of the polynomials. Monomial Binomial Trinomial Four-Terms (actors) & coefficients of the polynomials. Monomial Binomial Trinomial Four-Terms (actors) & coefficients of the polynomials. Then explain addition, subtraction and multiplication of polynomials with different examples. Identities: now teacher introduce the identities. Explain and solve the problems on it. Identity	chalks, chart, ppt. Projecto r	Discussion & group activities		
Elaborat e	Make group of students, give some problems to solve the problems on standard identites. With the help of teacher, solve the additional problems.	Exercise problem s In textbook	Activity	Discussion with students	
Evaluat e	Teacher will assign some problems to do work. Students should solve all the problems given in the textbook.	Textbook	Evaluation	Try to do all problems in textbook.	

Unit: 09 Methodology: Demonstration & lecture

method. Unit name: MENSURATION.

Date: From to

- 1. Concept area and perimeter of plane figures.
- 2. Area of trapezium.
- 3. Area of general quadrilaterals.
- 4. Area of polygons.
- 5. Area & volume of solid shapes.

			Evaluation	Teachers	1
Chama	Astinitias To Foresumble Fore	TTI NA	Tools &	1	TIM
<u>Steps</u>	Activities To Favourable For	TLM	Technique	Introspecti	Е
	Learning		1 -	on	
	Ctaut the good on by abadring the	Chart	S	1A7:11 + +	
F	Start the session by checking the	Chart,	Discussion	Will try to	
Engage	previous knowledge, by asking questions	•	& group	answers	
	related to solid shapes and plane figures.	color	discussion.		
	Students already learnt	chalks.			
	about proportions in previous chapter.				
_	Teacher will ask the class about 3D	chalks,	Questionnai	Answering	
Explore	shapes, perimeter and area of the plane	chart,	re	for	
	figures ect. After getting different	ppt.		supplement	
	answers from class, then introduce the	projector		ary	
	chapter.			questions.	
	Perimeter and area: Explain about	Projecto	Discussion		
	perimeter and area of the plane	r Ppt.	& group		
	figures.	Marke	activities		
	Area of trapezium: introduce the topic	r			
	trapezium and explain about formula	Modal			
	then do some problems on it.	s 2D &			
	Area of quadrilaterals: formula	3D			
Explain	of area of quadrilateral with	shapes.			
	problems.	- · •			
	h ₁ , h ₂				
	C D A = (% x AC x BE) + (% x AC x DF)				
	Area of solid shapes: explain about				
	area of solid shapes then do some				
	problems on it.				
	Surface Area Formulas				
	Rectangular SA=2m + 2m + 2m Solid Cube SA= 6m + 2m + 2m				
	Cone $SA = 3r^2 + 3r\sqrt{r^2 + n^2}$ Sphere $SA = 4\pi r^2$				
	Volume of solid shapes: explain about				
	volume of solid shapes then do some				
	problems on it.				

	Make group of students, give some problems for solve on area and volumes	Exercise problem	Activity	Discussion with	
Elaborat	of solid shapes.	s In		students	
e		textbook			
Evaluat	Teacher will assign some problems to do	Textbook	Evaluation	Try to do all	
e	work.			problems in	
	Students will solve all the problems			textbook.	
	given in the textbook.				

Head master or mistress/Principal

Unit: 10 Methodology: Demonstration & lecture

method. Unit name: Exponents & powers.

Date: From to

Objectives:

1. Powers with negative exponents.

2. To understand the laws of exponents.

3. Comparing very large and small numbers.

4. To solve the problems on laws of exponents.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by asking questions related to squares, cubes ect. Students already learnt about squares & cubes in the earlier.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Teacher will ask some questions like 'how can we write if a number is multiplied 3 times?'. Asks different questions and write on board, then introduce the chapter.	chalks, chart, ppt.	Questionnai re	Answering for supplement ary questions.	
Explain	Powers with negative exponents: explain how power numbers and base numbers will have With different examples. Laws of exponents: explain 5 laws of exponents by taking different examples. Law I $a^m \times a^n = a^{m+n}$ Law II $\frac{a^m}{a^n} = a^{m-n}$ Law III $(a^m)^n = a^{mn}$ Law IV $a^m \times b^m = (ab)^m$ Law V $\frac{a^m}{b^m} = \left(\frac{a}{b}\right)^m$ Law VI $a^0 = 1$ By using different examples, explain all 5 laws of exponents to the pupils.	Projecto r dies Ppt.	Discussion & group activities		

	Make group of students, give some problems to laws of exponents.	Exercise problem	Activity	Discussion with
Elaborat	Students will solve additional problems	s In		students
e	given by the teacher.	textbook		
Evaluat	Teacher will assign some problems to do	Textbook	Evaluation	Try to do
e	work. Students will solve all the			all
	problems given in the textbook.			problems
				in
				textbook.

Head master or mistress/Principal

Unit: 11 Methodology: Demonstration & lecture

method. Unit name: Direct and Inverse Proportions.

Date: From to

Objectives:

1. Concept of proportion.

2. To understand the concept of direct and inverse proportion.

3. To solve problems on direct and inverse proportion.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by asking questions ratios. Students already learnt about ratios earlier.	Chart, Ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Teacher will ask some questions about ratios like 'if we mixed 2kg sugar to 3kg rice' how can we write in ratio?" After getting different answers from class, then introduce the chapter.	chalks, chart, ppt. projector	Questionnai re	Answering for supplement ary questions.	
Explain	Introduction: explain about ratios. With different examples, come to the point of proportion.	Project or Geomet ry kit Ppt. Marker Geogebr a Graph sheet	Discussion & group activities		

	Inverse proportion: explain about inverse proportion with application problems.				
Elaborat e	Make group of students, give some problems for solve on proportions. Students will solve additional problems given by the teacher.	Exercise problem s In textbook	Activity	Discussion with students	
Evaluat e	Teacher will assign some problems to do work. Students will solve all the problems given in the textbook.	Textbook	Evaluation	Try to do all problems in textbook.	

Head master or mistress/Principal

Unit: 12 Methodology: Demonstration & lecture

method. Unit name: FACTORIZATION.

Date: From to

Objectives:

1. Concept factorisation.

- 2. To understand method of factorisation.
- 3. Concept of factorization using identities.
- 4. To understand the division of algebraic expressions.

<u>Steps</u>	Activities To Favourable For Learning	TLM	Evaluation Tools & Technique s	Teachers Introspecti on	TIM E
Engage	Start the session by checking the previous knowledge, by asking questions about algebraic terms. Students already learnt about terms in previous year.	Chart, Ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Teacher will ask the class about factors, algebraic terms ect. After getting different answers from class, then introduce the chapter.	chalks, chart, ppt. projector	Questionnai re	Answering for supplement ary questions.	

	Factorization: explain about	Projecto	Discussion		
	factorization, definition examples and some problems on it. Factorize: $2x^2 + 4x$,	r Ppt. Marker	& group activities		
	y ² +4y+4.				
	Methods of factorization: explain				
Evalain	about methods of factorization with				
Explain	different examples.				
	Factoring Techniques Factor out the GCF $2yx^2 - 8xy - 24y$ $-2y(x^2 - 4x - 12)$ Special Cases Difference of Two Square Trinomial $x^2 - 9$ $= x^2 - 3^2$ $= (x - 5)^2$				
	Factorization by identities:				
	Explain how to factorise by using				
	identities with examples. (a + b) ² = a ² + b ² + 2ab				
	$(a + b)^2 = a^2 + b^2 - 2ab$				
	$(a - b) (a + b) = a^2 - b^2$				
	Make group of students, give some	Exercise	Activity	Discussion	
El ab anat	problems for solve on factors. Students	problem		with	
Elaborat	will solve additional problems given by the teacher.	s In textbook		students	
Evaluat	Teacher will assign some problems to do		Evaluation	Try to do	
e	work. Students will solve all the	TOMEDOOR	2, aiddioii	all	
	problems given in the textbook.			problems	
				in textbook.	
				tevenour.	

Head master or mistress/Principal

Unit: 13 Methodology: Demonstration & lecture

method. Unit name: Introduction to graph.

Date: From to

- 1. Concept of bar graph, pie chart, & histogram.
- 2. To understand the representing the line graph.
- 3. Concept of linear graph.
- 4. To understand the \boldsymbol{x} and \boldsymbol{y} coordinates.
- 5. Relationship between dependent and independent variable is shown graph.

			Evaluation	Teachers	TIM
<u>Steps</u>	Activities To Favourable For Learning	TLM	Tools & Technique s	Introspecti on	E

Engage	Start the session by checking the previous knowledge, by asking questions	Chart, Ppt	Discussion & group	Will try to answers	
Linguage	about how we represents the data.	color	discussion.	answers	
	Students already learnt about graphs earlier.	chalks.			
Explore	Start the session by asking different questions on data handling. After getting different answers from class,	chalks, chart, ppt.	Questionnai re	Answering for supplement	
	then introduce the chapter.	projector		ary questions.	
Explain	Introduction: explain about bar graph, pie chart and histogram by using different examples. Line and linear graph: explain about line graph and linear graph with examples.	Project or Geomet ry kit Ppt. Marker Geogebr a Graph sheet	Discussion & group activities		
	Make group of students, give some	Exercise	Activity	Discussion	
Elaborat e	problems for solve on different graphs. Students will solve additional problems given by the teacher.	problem s In textbook		with students	
Evaluat e	Teacher will assign some problems to do work. Students will solve all the problems given in the textbook.	Textbook	Evaluation	Try to do all problems in textbook.	

Head master or mistress/Principal