MATHEMATICS
LESSON PLAN

2023

LESSON PLAN

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Unit: 01 **Methodology: Demonstration & lecture method**

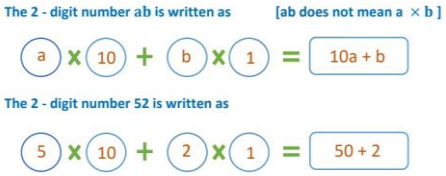
Unit name: Playing with numbers.

Date: From to

Objectives:

1. Concept of numbers in general form.
2. Concept of games in numbers.
3. Letters of digits.
4. To understand the tests of divisibility.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking the questions related to numbers. They knew about all type of numbers.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Teacher will start the class by asking if students have heard the following sentences: ● What is natural numbers?. ● Whole numbers, integers, even and odd numbers. After getting different answers from students introduce the chapter.	chalks, Numbers chart, ppt.	Questionnaire	Answering for supplementary questions.	

Explain	**Numbers in general form:** explain about the numbers in general form. 37=3x10+7x1.  **Games in numbers:** Explain how to play with numbers. **Letters of digits:** ∴ For A = 5, we get 5 + 8 = 13 ∴ The values of B and C = 1(carried on) + 4 + 9 = 14 Thus the addition is 4 5 + 9 8 = 1 4 3 Hence, A = 5, B = 4 and C = 1 **Divisibility rule:** finally explain the divisibility rule of 2, 3, 4, 5, 6, 8, 9 & 11.	chalks, Numbers chart, ppt.	Discussion & group activities		
Elaborate	Make group of students, guide them to find the some more divisibility rules with an examples.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	Teacher will assign some problems to do work. For practice students should do problems in textbook.	Textbook	Evaluation	Try to do all problems in textbook.	

Subject teacher **Head master or mistress/Principal**

Unit: 02 **Methodology: Demonstration & lecture method**

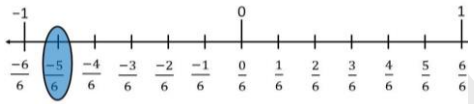
Unit name: Rational numbers.

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking the questions related to rational numbers. In previous class, they knew about rational numbers.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Start the session by asking some questions on rational numbers, operations on rational numbers ect. After getting different answers from the class, introduce the chapter.	chalks, Numbers chart, ppt.	Questionnaire	Answering for supplementary questions.	

Explain	**Introduction:** example 2x=3 is a linear equation, x=$\frac{3}{2}$. This leads us to the collection of rational numbers. **Properties of rational numbers.** Explain the properties of rational 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. 	chalks, Numbers chart, ppt.	Discussion & group activities		
Elaborate	Make group of students, guide them to find the rational numbers. Students should prove the properties of rational numbers.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

8th STANDARD **MATHEMATICS** **LESSON PLAN**

Unit: 03 **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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking the questions related to linear equations learn In previous class. Ask the questions about verbal problems like 'if we add to one number we will get 8".	Chart, ppt color chalks. Projector	Discussion & group discussion.	Will try to answers	
Explore	Start the session by asking some questions like 'if we subtract 15 from a number we get 12'. After getting different answers from the class, introduce the chapter.	chalks, Numbers chart, ppt.	Questionnaire	Answering for supplementary questions.	

Explain	**Solution of linear equation:** by taking different examples, explain how to solve the linear equations in simple way. Example x+5=8, we will get x=3. **Applications:** explain how we can solve the applications level by taking different examples. Example: 'one natural number is 10 more than the other. Their sum is 74. Find the number'. 5x + 1 = 3x + 5 	chalks, Numbers chart, ppt. Projector	Discussion & group activities		
Elaborate	Make group of students, guide them to solve the equations individually. With the help of teacher, solve the additional problems.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 04 **Methodology: Demonstration & lecture method**

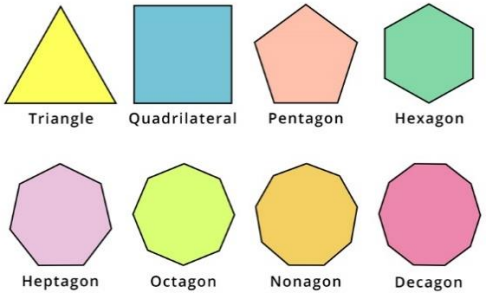
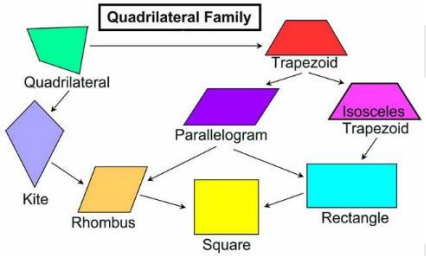
Unit name: Understanding quadrilateral.

Date: From to

Objectives:

1. Definition of polygons, classification.
2. Measurement of polygons.
3. Concept of Quadrilaterals & their types.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
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	Questionnaire	Answering for supplementary questions.	

Explain	**Polygons:** a simple closed curve is made up of only line segments is called polygons.  **Quadrilaterals:** explain about the quadrilaterals and their properties. 	chalks, Numbers chart, ppt. Projector	Discussion & group activities		
Elaborate	Make group of students, guide them to identify different types of quadrilaterals. With the help of teacher, solve the additional problems.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 05 **Methodology: Demonstration cum lecture method**

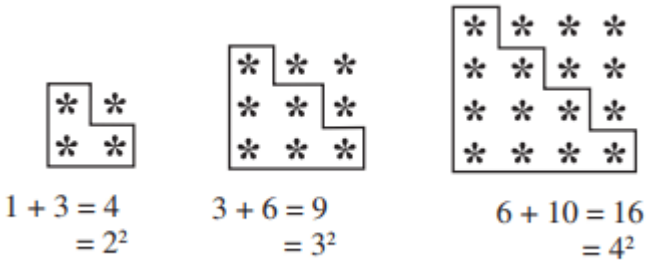
Unit name: Squares & square roots.

Date: From to

Objectives:

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking the numbers which are multiplied its self. They know the numbers, operations of numbers.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
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	Questionnaire	Answering for supplementary 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. $\sqrt{9}=3, \sqrt{49}=7, \sqrt{121}=11$.  $1+3=4$ $=2^2$ $3+6=9$ $=3^2$ $6+10=16$ $=4^2$	chalks, squares and roots chart, ppt. Projector	Discussion & group activities		
Elaborate	Make group of students, give some problems to find the squares and square roots. With the help of teacher, solve the additional problems.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 06 **Methodology: Demonstration & lecture method**

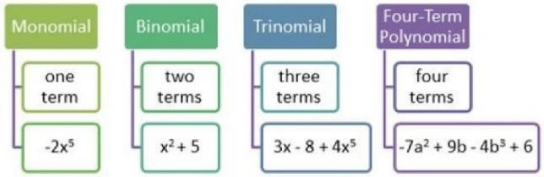
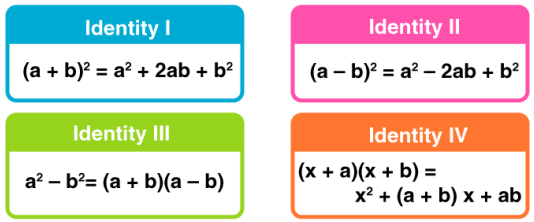
Unit name: Algebraic expressions and identities.

Date: From to

Objectives:

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
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.	Questionnaire	Answering for supplementary questions.	

Explain	**Monomial, binomial & polynomials:** explain about the terms factors, & 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. 	chalks, chart, ppt. Projector	Discussion & group activities		
Elaborate	Make group of students, give some problems to solve the problems on standard identites. With the help of teacher, solve the additional problems.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 07 **Methodology: Demonstration & learning with doing.**

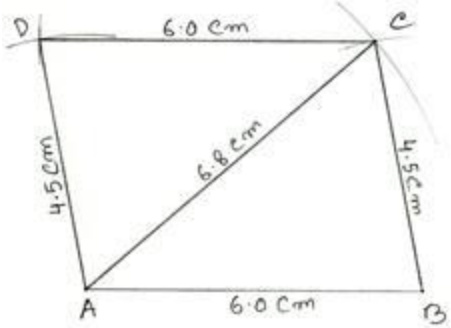
Unit name: Practical Geometry.

Date: From to

Objectives:

1. Concept of constructing the quadrilaterals.
2. To construct a quadrilateral if they give four sides.
3. To construct a quadrilateral if they give two diagonals and three sides.
4. To construct a quadrilateral if they give two adjacent sides and three angles.
5. To construct a quadrilateral if they give three sides and two included angles.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking questions how to draw a line, how to construct a triangle.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Start the session by asking some questions about construction of triangles, then introduce the chapter.	chalks, chart, ppt.	Questionnaire	Answering for supplementary questions.	

Explain	**Construction of quadrilaterals:** first of all, teacher should give the clear information to students that how to construct a quadrilaterals.  Then guide them to construct all the four methods of constructing the quadrilaterals.	Geometry kit Projector Geogebra Ppt.	Discussion & group activities		
Elaborate	Make group of students, give some problems to construct a quadrilaterals. With the help of teacher, solve the additional problems.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 08 **Methodology: Demonstration & lecture method.**

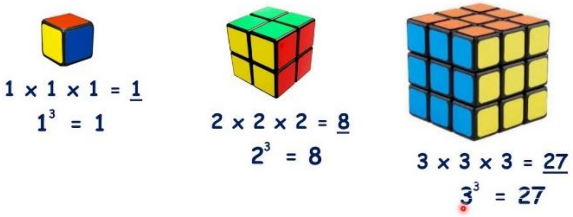
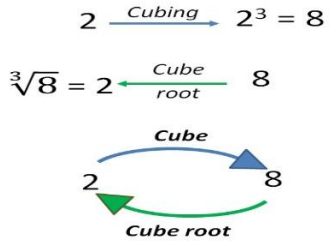
Unit name: Cubes and cube roots.

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking questions related to squares, square roots. Students already learnt about squares in the earlier.	Chart, ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Start the session by asking some questions like 'if a number is multiplied by 3 times what will get?'. Then introduce the chapter.	chalks, chart, ppt.	Questionnaire	Answering for supplementary questions.	

Explain	**Introduction:** explain about cube numbers, practice them to remember the cube numbers. When you multiply a number by itself, and then multiply it by itself again, you get a cube number.  $1 \times 1 \times 1 = 1$ $1^3 = 1$ $2 \times 2 \times 2 = 8$ $2^3 = 8$ $3 \times 3 \times 3 = 27$ $3^3 = 27$ **Cube roots:** explain about cube roots with different examples.  	Projector dies Ppt.	Discussion & group activities		
Elaborate	Make group of students, give some problems to solve on cube and cube roots. With the help of teacher, solve the additional problems.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 09 **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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
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.	Questionnaire	Answering for supplementary 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.	Projector dies Ppt.	Discussion & group activities		
Elaborate	Make group of students, give some problems to laws of exponents. Students will solve additional problems given by the teacher.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 10 **Methodology: Demonstration & project method.**

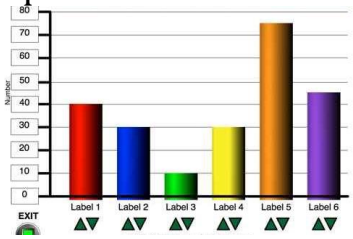
Unit name: Data handling.

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
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	Questionnaire	Answering for supplementary questions.	

Explain	**Introduction:** give clear information of data and representation of data on different types of graphs.  **Organizing data:** explain how to organize the given data with different examples. **Chances and probability:** explain about probability and chances with examples.	Projector Geometry kit Ppt. Marker Geogebra Graph sheet	Discussion & group activities		

Number of students appeared	Tally marks	Frequency
1	𝍸 I	6
2	𝍸 II	7
3	𝍸 I	6
4	𝍸 III	8
5	𝍸 II	7
6	𝍸 I	6
Total		40

Elaborate	Make group of students, give some problems for solve on different types of graphs. Students will solve additional problems given by the teacher.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 11 **Methodology: Demonstration & lecture method.**

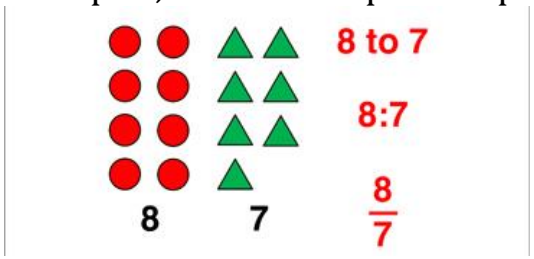
Unit name: Inverse Proportions.

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
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	Questionnaire	Answering for supplementary questions.	

Explain	**Introduction:** explain about ratios. With different examples, come to the point of proportion.  **Proportion:** explain about proportions with problems. Solve and give some problems to learners as home work. Equations with 2 equal ratios $\frac{2}{3}=\frac{4}{6}$ $\frac{5}{15}=\frac{1}{3}$ Proportions can involve variables. $\frac{x}{8}=\frac{5}{16}$ $\frac{x+3}{7}=\frac{x-2}{4}$ **Inverse proportion:** explain about inverse proportion with application problems.	Projector Geometry kit Ppt. Marker Geogebra Graph sheet	Discussion & group activities		
Elaborate	Make group of students, give some problems for solve on proportions. Students will solve additional problems given by the teacher.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

8th STANDARD **MATHEMATICS** **LESSON PLAN**

Unit: 12 **Methodology: Demonstration & lecture method.**

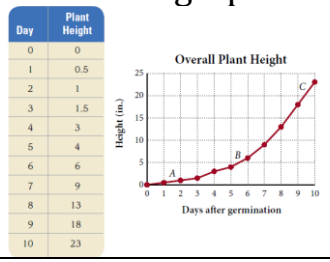
Unit name: Introduction to graph.

Date: From to

Objectives:

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 x and y coordinates.
5. Relationship between dependent and independent variable is shown graph.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking questions about how we represents the data. Students already learnt about graphs earlier.	Chart, Ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Start the session by asking different questions on data handling. After getting different answers from class, then introduce the chapter.	chalks, chart, ppt. projector	Questionnaire	Answering for supplementary 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.  	Projector Geometry kit Ppt. Marker Geogebra Graph sheet	Discussion & group activities		
Elaborate	Make group of students, give some problems for solve on different graphs. Students will solve additional problems given by the teacher.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 13 **Methodology: Demonstration & lecture method.**

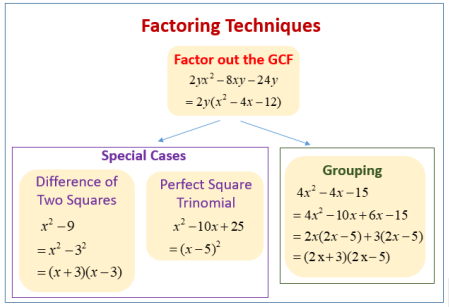
Unit name: FACTORIZATION.

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
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	Questionnaire	Answering for supplementary questions.	

Explain	**Factorization:** explain about factorization, definition examples and some problems on it. Factorize: $2x^2+4x$, y^2+4y+4. **Methods of factorization:** explain about methods of factorization with different examples.  Factorization by identities: Explain how to factorise by using identities with examples. $(a+b)^2 = a^2+b^2+2ab$ $(a+b)^2 = a^2+b^2-2ab$ $(a-b)\ (a+b) = a^2-b^2$	Projector Ppt. Marker	Discussion & group activities		
Elaborate	Make group of students, give some problems for solve on factors. Students will solve additional problems given by the teacher.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 14 **Methodology: Demonstration & lecture method.**

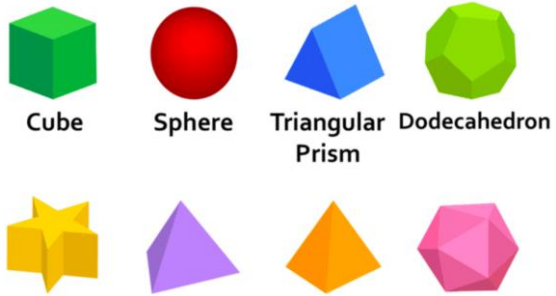
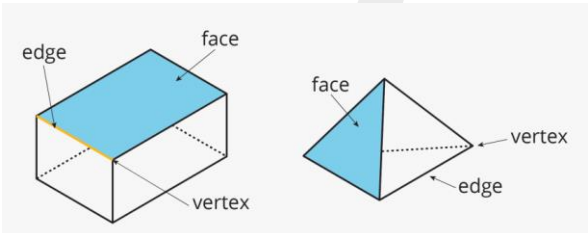
Unit name: VISUALIZING SOLID SHAPES.

Date: From to

Objectives:

1. Concept of solid shapes.
2. To understand the views of 3D-shapes.
3. To learn about faces, edges and vertices of solid shapes.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by explaining about plane shapes and solid shapes. Students already learnt about shapes in previous year.	Chart, Ppt color chalks.	Discussion & group discussion.	Will try to answers	
Explore	Teacher will ask the class about plane figures, 2D shapes and solid shapes. After getting different answers from class, then introduce the chapter.	chalks, chart, ppt. projector	Questionnaire	Answering for supplementary questions.	

Explain	**Introduction:** Explain about shapes and solid figures. **3D-Shapes view:** show the different types of 3D shapes to pupils and explain about this.  **Faces, vertices and edges:** explain about faces, edges and vertices of the solid shapes with Euler's formula. 	Projector Ppt. Marker Modals 2D & 3D shapes.	Discussion & group activities		
Elaborate	Make group of students, give some problems for solve on factors. Students will solve additional problems given by the teacher.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 15 **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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
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	Questionnaire	Answering for supplementary questions.	

Explain	**Introduction:** Explain about percentage and ratios. By taking different examples introduce the concept of discount.  **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 = number of years invested	Projector Ppt. Marker Modals 2D & 3D shapes.	Discussion & group activities		
Elaborate	Make group of students, give some problems for solve on discounts, compound interests. Students will solve additional problems given by the teacher.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**

Unit: 16 **Methodology: Demonstration & lecture method.**

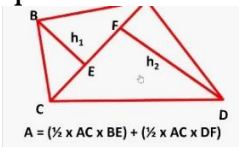
Unit name: MENSURATION.

Date: From to

Objectives:

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.

Steps	Activities To Favourable For Learning	TLM	Evaluation Tools & Techniques	Teachers Introspection	TIME
Engage	Start the session by checking the previous knowledge, by asking questions related to solid shapes and plane figures. 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 3D shapes, perimeter and area of the plane figures ect. After getting different answers from class, then introduce the chapter.	chalks, chart, ppt. projector	Questionnaire	Answering for supplementary questions.	

Explain	**Perimeter and area:** Explain about perimeter and area of the plane figures. **Area of trapezium:** introduce the topic trapezium and explain about formula then do some problems on it. **Area of quadrilaterals:** formula of area of quadrilateral with problems.  **Area of solid shapes:** explain about area of solid shapes then do some problems on it. Surface Area Formulas Figure / Formula / Diagram Rectangular Solid: $SA=2lw + 2wh + 2lh$ Cube: $SA= 6s^2$ Cylinder: $SA = 2\pi rh + 2\pi r^2$ Cone: $SA = \pi r^2 + \pi r\sqrt{r^2 + h^2}$ Sphere: $SA = 4\pi r^2$ **Volume of solid shapes:** explain about volume of solid shapes then do some problems on it.	Projector Ppt. Marker Modals 2D & 3D shapes.	Discussion & group activities		
Elaborate	Make group of students, give some problems for solve on area and volumes of solid shapes.	Exercise problems In textbook	Activity	Discussion with students	
Evaluate	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.	

Subject teacher **Head master or mistress/Principal**