P M English Medium School, Dhinoj

Yearly Plan For Academic Session 2024-2025

Grade: VII   Subject: MATHEMATICS

Month	No.Of Teaching Days	Assessment	Ch.No/Chap. Name	No. of Sessions	Learning Outcomes
April	21	Arithmetic, Data Handling, HOTS	Chapter 1: Integers Chapter 9: Data Handling	Chapter 1:15 Chapter 3: 15 (2 extra required)	Students will be able: ❖ To define and differentiate between Natural numbers, Whole Numbers and Integers. ❖ Represent numbers with positive and negative signs in order to apply various situations. ❖ Apply properties of addition and subtraction of integers in order to simplify arithmetic expressions. ❖ Apply rules of multiplication and division of integers in order to solve various arithmetic expressions and contextual problems. ❖ Apply properties of multiplication of integers in order to simplify arithmetic expressions. ❖ Apply properties of addition,

					subtraction and multiplication of integers in order to devise methods for easier calculation and solve problems based on real-life related to integers. ❖ Apply properties of division of integers in order to simplify arithmetic expressions. ❖ Infer division of integers as inverse operation of multiplication in order to write multiplication statement into corresponding division statement. ❖ Applies rules for multiplication and division in order to solve problems involving two integers with same or different signs. **Chapter 3** Students will be able to: ❖ Identify data to be meaningful and useful, the items of the data must be gathered and recorded in a systematic manner. This is referred to as data handling. ❖ Generalizes the usage of data and its organisation ❖ Defines Range, Arithmetic Mean, Median and Mode ❖ Learn the formula to compute Range, Mean, Median &Mode.

Month	Periods	Topic	Chapter	Reference	Learning Objectives
					❖ Represents data pictorially in order to interpret data using bar graph and double bar graph. ❖ Calculate mean, median and mode in order to find various representative values for simple data from her/ his life.
June	16	Arithmetic, HOTS	Chapter 2: Fractions and Decimals. Chapter 13: Visualising Solid Shapes	Chapter 2: 19 Chapter 13:02	Students will be able to: ❖ Define proper, improper and mixed fractions in order to distinguish between them. ❖ Apply the concept of multiplication as repetitive addition for fraction in order to multiply a fraction and a whole number. ❖ Multiply fractions in order to solve the operator 'of'. ❖ Multiply fractions in order to calculate the total number of parts. ❖ Multiply fractions in order to compare the value of the product with the original fractions. ❖ Invert a given fraction in order to find its reciprocal ❖ Divide two fractions in order to find the smaller parts of fractions. ❖ Apply the concept of decimal representation and expansion in order to perform mathematical operations

					on decimal.

Last column content:

- on decimal.
- ❖ Multiply decimal numbers by 10, 100 and 1000 in order to infer the right shift in decimal point.
- ❖ Divide decimal number by 10, 100 and 1000 in order to left shift in decimal point.
- ❖ Divide decimal numbers by a whole number in order to solve questions related to decimals.
- ❖ Convert decimals into fractions in order to divide a decimal number by another decimal number.

Chapter 13

Students will be able to:
- ❖ Differentiate between: plane and solid Shapes.
- ❖ Recognises 2D and 3D shapes
- ❖ Identifies different shapes in nested objects
- ❖ Represents 3D shapes on a plane surface
- ❖ Find the number of faces, vertices and edges of a given 3-D shape.

- ❖ Draw and identify the nets of solid

					shape. ❖ Draw the isometric and oblique sketch of a solid shape. ❖ Examine cross-section of different solid shapes to interpret and visualise different planes. ❖ Examine solid figures from different angles to view different sections of solids. ❖ Draw different views of solids (Front, side and top) ❖ Practically learns the 'Shadow play' technique
July	24	Geometry, Algebra, HOTS	Chapter 13: Visualising Solid Shapes. (Continue.) Chapter 4: Simple Equations Chapter 5: Lines and Angles	Chapter 13:06 Chapter 4:16 Chapter 5:10	Students will be able to: ❖ Explain the difference between an expression and an equation ❖ Defines equation in one variable ❖ Finds solution of the simple equations and verify the solutions ❖ Applies the concept in solving the Word Problems based on real-life situation ❖ Convert the given equation in words in order to express it in statement form. ❖ Use trial and error methods in order to determine the solution of an equation.

					❖ Create a strategy in order to solve the given simple equation. ❖ Understand the concept of Transposition and balancing of an equation. ❖ Construct simple equations in order to solve them for the given contextual problems/puzzles **Chapter 5** Students will be able to: ❖ Recall the concept of line, line segment and angles in order to identify them in the given figure(s) ❖ Classify pairs of angles based on their properties in order to describe linear, supplementary, complementary, adjacent and vertically opposite angles ❖ Verifies the properties of linear pair & vertically opposite angles. ❖ Apply the properties of linear, supplementary and complementary angles in order to find the value of one angle when the other one is given ❖ Learns a new geometrical concept of parallel lines. ❖ Draws the corresponding ∠s, alternate

					interior ∠s, consecutive interior ∠s ❖ Verify the properties of various pairs of angles formed when a transversal cuts two lines in order to demonstrate the properties of angles when two lines are parallel.
August	19	Geometry, HOTS	Chapter 5: Lines and Angles Chapter 6: Triangles (Extra Topic: Introduction of Squares and Square Roots till 400.)	Chapter 5:04 Chapter 6:21	Students will be able to: ❖ Compare different triangles in order to classify them on the basis of their sides and angles. ❖ Recall the parts of a triangle in order to describe it for the given triangle. ❖ Defines Median and Altitude of a Triangle of(acute angled triangle, obtuse -angled triangle and Right - angled triangle) ❖ Proves the Exterior Angle property and Angle Sum property of a Triangle ❖ Apply exterior angle property and angle sum property of a triangle in order to find the measure of an unknown angle(s) in the given figure. ❖ Learns about two special triangles – Isosceles &Equilateral ❖ Practically proves that the sum of lengths of two sides of a triangle is greater than the third side ❖ Learns how to use Pythagoras theorem in a Right -Angled triangle

					and apply the Pythagoras property to find the length of the unknown side in a right-angled triangle. ❖ Apply the property of lengths of sides of a triangle in order to determine whether a triangle is possible for the given side lengths or not.
September	10	Term 1 Exam Chapters: 1,2,3,4,5,6,13	**REVISION TERM 1 EXAM** Extra Topic: Introduction to Congruence of Triangles	**REVISION TERM 1 EXAM** Sessions:05	

October	18	Arithmetic, HOTS	Chapter 7: Comparing Quantities.
			Chapter 8: Rational Numbers
				Chapter 7: 16
				Chapter 8: 08
					Students will be able to:
					
					❖ Define Ratio and Percentage
					❖ Compare quantities using ratio and percentage.
					❖ Represent quantities as ratios to compare.
					❖ Evaluating percentages as another way to compare quantities.
					❖ Convert:
					    1. Ratio to %
					    2. Decimal to %
					    3. % to Ratio
					    4. % to Decimal

					❖ To find exact number when a certain per cent of the total quantity is given. ❖ Calculate Increase or decrease in quantity as percentage in order to examine change in quantity based on real life problems. ❖ Calculate cost and selling price to determine profit/ loss percentage. ❖ Define Simple Interest, Principal, Rate of Interest, Time Period, Amount. ❖ Make use of percentage in order to calculate simple interest for multiple years **Chapter 8** ❖ Students will be able to: ❖ Define rational numbers in order to classify a number as a rational number. ❖ Define and differentiate fraction and rational number. ❖ Represent integers in the form of numerator/ denominator. ❖ Find Equivalent rational numbers. ❖ Define positive and negative rational numbers. ❖ Represent rational numbers on the number line. ❖ Represent rational numbers in

					standard form.
					❖ Simplify rational number such that there is no common factor between numerator and denominator in order to represent the number in standard form. ❖ Compare rational numbers. ❖ Calculate and find rational numbers between any 2 rational numbers in order to infer that there are infinite rational numbers between any two given rational numbers. ❖ Analyses the properties of addition, subtraction, multiplication and division of rational numbers ❖ Apply the rules of rational numbers operations in order to simplify arithmetic operations.
November	17	Mensuration, HOTS	Chapter 8: Rational Numbers. (Continue) Chapter 9: Perimeter and Area.	Chapter 8: 03 Chapter 9: 20	Students will be able to: ❖ Define Perimeter and Area. ❖ Apply a formula in order to determine the area of triangle as half of the area of a rectangle. ❖ Generalising for other Congruent Parts of Rectangle ❖ Recall the concept of congruent figures in order to generalise the area of congruent parts of rectangles.

					❖ Area of a parallelogram: Use unit square grid sheets in order to find the perimeter and estimate the area of parallelogram. ❖ Develop and apply a formula in order to determine the area of a parallelogram. ❖ Area of triangle Compare the area of a triangle and its corresponding parallelogram in order to discuss their relation. ❖ Use direct or indirect methods to find the circumference of a circle, semicircle. ❖ Develop and apply the formula to find the area of circle and semicircle.
December	10	Algebra, HOTS	Chapter 10: Algebraic Expressions	Chapter 10: 13	Students will be able to: ❖ Differentiate between arithmetic and algebraic expression. ❖ Define variable, term, expression, constant, coefficient, factors of an expression, equation, like and unlike terms, monomial, binomial, trinomial and polynomial. ❖ Find the terms, factors and constant terms of an expression. ❖ Examine the given algebraic expressions in order to distinguish

					between the terms which are constants and those which are not. ❖ Examine the given algebraic expression in order to determine the numerical coefficient of the given variable. ❖ Examine the algebraic factors of the given terms in order to distinguish between like and unlike terms. ❖ Differentiate between like and unlike terms. ❖ Examine the given algebraic expressions in order to classify them as monomial, binomial, trinomial, polynomial. ❖ Combine like terms in order to simplify the given algebraic expression ❖ Use the given value of variable(s) in order to evaluate the algebraic expression. ❖ Simplify and find the value of an expression. ❖ Find the coefficient/numerical coefficient of an expression. ❖ Translates a real-life situation in the form of a simple algebraic equation in order to arrive at a generalized problem and solution for the situation.
Jan-24	22	Geometry, Arithmetic, HOTS	Chapter 11: Exponents and Powers. Chapter 12: Symmetry	Chapter 11: 16 Chapter 12: 13	Chapter 11: Students will be able to

					❖ Describe exponential form of numbers in order to express numbers in exponential notation. ❖ Applies properties of exponential numbers in order to simplify problems involving ❖ multiplication and division of large numbers. ❖ Examine the exponential form of the given number in order to identify its base and exponent. ❖ Examine the numbers given in exponential form in order to compare and represent them in an order. ❖ Find prime factors of numbers in order to express them as the product of powers of prime factors ❖ Apply laws of exponents to simplify a given expression. ❖ Write numbers using powers of 10 to express them in standard form. ❖ Expand the given numbers using powers of 10 in order to express it in the exponent form. ❖ Represent large numbers in exponential form in order to read, understand and compare them easily. Chapter 12: Students will be able to: ❖ Define symmetry and identify the symmetrical objects.

					❖ Define and draw lines of symmetry ❖ Determine lines of symmetry for the given figures in order to classify them on the basis of no. Of lines of symmetry. ❖ Examine regular polygons in order to determine their lines of symmetry. ❖ Complete the mirror reflection of the given figure(s) along the mirror line (i.e., the line of symmetry). ❖ Give example(s) for rotational symmetry in order to describe their centre of rotation and the direction of rotation. ❖ Examine the given figure in order to determine its angle of rotation. ❖ Examine the given figure in order to determine its order of rotation. Line symmetry and rotational symmetry ❖ Examine the given figures in order to identify figures which have both line symmetry as well as rotational symmetry.
Feb-25	18		**REVISION**	**REVISION**	

March-25	0	Term2-Exam Chapters -7, 8, 9,10,11,12	**TERM 2 EXAM**	**TERM 2 EXAM**	
Total	**175**				