SANT NANDLAL SMRITI VIDYA MANDIR, GHATSILA

YEARLY SYLLABUS OF MATHEMATICS

SESSION – 2025-2026

STD – IX

MONTH	NO OF DAYS	TOPIC TO BE TAUGHT	ACTIVITY	LEARNING OUTCOME	VALUES & SKILLS IMPARTED	ASSESSMENT
APRIL	21	**Number systems:** Introduction Number line representation of real numbers Examples of non-recurring/non-terminating decimals Rationalization of real numbers of the type $\frac{1}{a+b\sqrt{x}}$ and $\frac{1}{\sqrt{x}+\sqrt{y}}$ Operations on real numbers Laws of exponents for real numbers Operations on real numbers Laws of exponents for real numbers **Co-ordinate Geometry:** Introduction Cartesian system Plotting a point in the plane if its coordinates are given Names and terms associated with the co-ordinate plane, notations.	1. To make a square root spiral by paper folding method. 2. To find $\sqrt{x}$ for any given positive real number x. 3. To obtain mirror images of figures with respect to a given line on a graph paper.	After studying this lesson, students will be able to write the rational and irrational numbers between given two rational numbers. Students should be able to represent different rational and irrational numbers on the number line and are able to recognise the given the numbers After studying this lesson students will be able to understand the Cartesian co-ordinate plane x- axis, y-axis, horizontal line, vertical line, origin, abscissa, ordinate, and different	Plain and simple, number sense is a person's ability to understand, relate, and connect numbers. Children with strong number sense think flexibly and fluently about numbers. They can: Visualize and talk comfortably about numbers. Studying co-ordinate geometry provides many foundational skills and helps to build the thinking skills of logic, deductive reasoning, analytical reasoning, and problem-solving	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will be practiced * Short & Long Questions will be done * Case – study based Questions will be asked

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				quadrants. Students also know the representation of different points in the Cartesian co-ordinate plane Topics Assessment: 1. Number Systems 2. Co-ordinate Geometry	.	
MAY	09	**Linear equation in two variables** Introduction Linear equations , Solution of a linear equation, Graph of a Linear equation in two variables, Equations of lines parallel to x-axis and y-axis Linear equations plotting them and showing that they lie on a line.	4. To represent a linear equation in two variables graphically.	After studying this lesson students will be able to understand the concept of linear equation in one variable and linear equation in two variables. Students should know the method of finding the points on the number line and able to draw its graph. Students also know the representation of the number line in one variable and in two variables Topics Assessment: 1. Linear equation in two variables	Linear equation helps in figuring out income over time, calculating mileage rates, or predicting profit	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will be practiced * Short & Long Questions will be done * Case- study based Questions will be asked

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JUNE	11	**Introduction to Euclid's geometry** Introduction Euclid's definitions, Axioms and postulates Equivalent versions of Euclid's fifth postulate Showing the relationship between axiom and theorem.	5. Make a chart paper on Euclid's Axioms and Postulates.	After studying this lesson students will be able to understand the term geometry and its origin. Students should know about the great mathematician Euclid and his contribution in mathematics. Students should also know about the axioms and postulates of Euclid Geometry. Topics Assessment: 1.Introduction to Euclid's geometry	Studying Euclid's geometry provides many foundational skills and helps to build the thinking skills of logic, deductive reasoning, analytical reasoning, and problem-solving.	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will be practiced * Short & Long Questions will be done *Case- study based Questions will asked

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JULY	26	**Lines and Angles** Introduction Basic terms and definitions If a ray stands on a line, then the sum of the two adjacent angles so formed is 180^0 and the converse. Intersecting lines Pairs of angles Parallel lines and a transversal Lines parallel to the same line Angle sum property of a triangle	6. To find the following by using paper folding: (i) the mid – point of a line segment and the perpendicular bisector of a line segment. (ii) the perpendicular to a line at a point given on the line. (iii) the perpendicular to a line from a point given outside it.	After studying this lesson students will be able to understand the different types of angles with their diagrams, different types of lines, concept of parallel lines and transversal, properties of triangles with proof.	Identify and apply the properties of lines and angles. Understand the concept of parallel, perpendicular, complementary and supplementary angles, vertical angles, and parallel lines cut by a transversal.	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will be practiced * Short & Long Questions will be done *Case – study based Questions will be asked
		Triangles Introduction Congruency of triangles Criteria for congruence of triangles Some properties of a triangle	7.To explore criteria for congruency of triangles, using some cut-outs of triangles.	After studying this lesson student will be able to understand the different types of triangles, different congruence conditions, proof of the important theorems. Topics Assessment: 1. Lines and Angles 2. Triangles	Skill to Identify and apply the Congruency Criteria SAS ,ASA,SSS and RHS Isosceles properties of a triangles.	

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AUGUST	24	**Heron's Formula** Area of a triangle by Heron's Formula	8. Make a chart paper on history of mathematical concept (Pythagoras Theorem).	After studying this lesson students will be able to understand different types of triangles, method of finding perimeter of different types of triangles, method of finding the area of different Triangles by using different methods, students should know the Heron's formula. Topics Assessment: 1. Heron's Formula	Skill to determine the area of a triangle, when provided its three side lengths. It can be applied to any shape or kind of triangle, as long as we are familiar with its three side lengths. It is also referred to as Hero's Formula.	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will be practiced * Short & Long Questions will be done *Case – study based Questions will be asked
SEPTEMBER	21	**Revision and Half yearly examination**				
OCTOBER	18	**Polynomials** Introduction Polynomials in one variable Zeroes of a polynomial Remainder theorem Factorisation of polynomials Factor theorem	9. To verify experimentally the identity $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$.	After studying this lesson students will be able to differentiate between algebraic expressions and polynomials, types of polynomials on the basis of terms and on	Skill to find the roots of any polynomial function.	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will

		Algebraic identities **Quadrilaterals** Angle sum property of a quadrilateral Types of quadrilaterals Properties of a parallelogram The midpoint theorem	10. To explore the properties of quadrilaterals 11. To verify the mid-point theorem	the basis of their degrees, zeroes and coefficients of polynomials, remainder and factor theorem at least 10 algebraic identities. After studying this lesson student should able to understand the definition of Quadrilateral, Different types of Quadrilaterals, properties of a parallelogram and the mid – point Theorem. Topics Assessment: 1. Polynomials 2. Quadrilaterals	Skill to describe and classify the properties of, and relationship between plane and solid geometric figures.	be practiced * Short & Long Questions will be done *Case – study based Questions will be asked.
NOVEMBER	23	**Circles** Circles and its related terms Angle subtended by a chord at a point Equal chords and their distances from the centre Perpendicular from the centre to a chord	12.To verify experimentally that angles formed in the same segment of a circle are equal. 13.To verify	After studying this lesson student should able to understand the definition of centre, radius, diameter, chord, sector, and segment of the circle. Understand the theorems and their	Circles helps to deal with real problems that real people experience every day.	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will be practiced

		Circle through three points Angle subtended by an arc of a circle Cyclic quadrilaterals.	experimentally that the opposite angles of a cyclic quadrilateral are supplementary.	applications in different problems .Understand the cyclic quadratic their properties and their application in different problems. Topics Assessment: 1. Circles		* Short & Long Questions will be done *Case – study based Questions will be asked.
DECEMBER	19	**Surface Areas and volumes** Introduction Surface area of a right circular cone Surface area of a sphere and hemisphere Volume of a right circular cone Volume of a sphere and hemisphere	14. To find the surface area of a cone experimentally	After studying this lesson students will be able to understand different types of solid figures, their vertices, edges and faces. Students should know the all the formulas of surface area and volume of solid figures and their application in finding the surface area and volume of different solid figures and in the combination of the solid figures. Topics Assessment: 1. Surface Areas and Volumes	It helps to develop the skill of finding the capacity of any shapes in real life and also to find the space occupied by a particular geometrical shapes	* Exercise Questions will be assessed * Questions from other reference book will be done * MCQ based question will be practiced * Short & Long Questions will be done *Case – study based Questions will be asked
JANUARY	22	**Statistics** Introduction Collection of data Bar graphs, histograms (with varying base lengths) , and	15. To draw histogram for classes of equal width and unequal widths.	After studying this lesson students will be able to understand depth of knowledge in algebra, analysis, or	Statistics skill are generally a combination of several qualifying traits, including math, computer	* Exercise Questions will be assessed * Questions from other

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		frequency polygons.		statistics. Students will formulate complete, concise, and correct mathematical proofs. Students will frame problems using multiple mathematical and statistical representations of relevant structures and relationships and solve using standard techniques. Topics Assessment: 1. Statistics	literacy, critical thinking, bar graphs, histograms and frequency polygons.	reference book will be done * MCQ based question will be practiced * Short & Long Questions will be done *Case – study based Questions will be asked.
FEBRUAR Y	22	**Revision and Annual examination**				

Subject Teacher: Sudipta Kr. Ghosh, Swaraj Kr. Rana. **Principal**