INFANT JESUS CONVENT SCHOOL

ANNUAL PLAN

MATHEMATICS

CLASS: VIII

MONTH/NO OF DAYS	TOPIC: SUB TOPIC	OBJECTIVES	AIDS/ACTIVITIES	MULTIPLE INTELLIGENCE SKILLS	LEARNING OUTCOME
APRIL No of Days: 18	RATIONAL NUMBERS: • Rational Numbers • Properties of Rational Numbers • Representation of Rational Numbers on the number line • Insert Rational Numbers between any two rational numbers	Students will be able to: • Differentiate rational and fractional numbers. • Represent rational numbers on the number line • Generalize the properties of rational numbers	**KNOWLEDGE:** • Apply basic operation on fraction • Sketch the number line and mark different numbers • Graphically represent data using different graphs. **SKILLS:** • Critical thinking • Problem solving • Construction **APPLICATION:** • Discussing the number system along with relevant examples • Solving the problems using various concepts • Demonstrating the construction work **UNDERSTANDING:** • Distinguish between all properties of rational numbers	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Make use of rational numbers in real life situations. • Use properties of rational numbers for solving problems based on rational numbers. • Identify and visualize rational numbers on the number

			• Insert rational numbers between two rational numbers		line
MAY No of Days: 14	DATA HANDLING • Draw and depict information from a Pie chart • Probability	Students will be able to: • Interpret data and graphically through pie chart • Understand how to compile data. • Comprehend how to draw a pie chart. • Apply the probability in real life.	**KNOWLEDGE:** • Understand probability and its related term **SKILLS:** • Critical thinking • Problem solving • Mathematical aptitude **APPLICATION:** • Apply probability in real life. • Interepreate the information from pie chart. **UNDERSTANDING:** Classify and Interpret different graphs • Chances and probability related to real life.	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Make use of probability in real life situations. • Represent data through pie chart.
	Linear equations in one variable: • Define, frame and solve the equation. • Cross multiplication. • Rules of solving Transposition. • Application.	Students will be able to: • Define a linear equation. • Frame linear equation for the statement. • Learn and understand the process of cross multiplication. Learn the rules and solve the equations by transposition	**KNOWLEDGE:** • To solve linear equations through grid and square paper. • Frame a real- life situation which can be expressed as a linear equation and whose solution is 10[value of the variable] **SKILLS:** • Imaginative thinking • Problem solving	• Logical-mathematical • Intrapersonal • Spatial	The students will be able to • Explain and frame linear equations. • Simplify linear equations using different

			• Analyical thinking **APPLICATION:** • solve day to day life problems based on algebraic equations such as – speed & time, age related problems, area & perimeter. **UNDERSTANDING:** • Learn the method in solving real life situation problems. Solve equation when variable lies on one side and both sides.		methods. Interpret the given word problems, analyze, frame the equation and solve it.
CONDUCTION OF PT-1 ASSESSMENT					
JULY No of Days: 27	UNDERSTANDING QUADRILATERALS: • Polygons • Angle Sum Property • Kinds of Quadrilaterals • Elements of parallelogram	Students will be able to: • Find missing angle of quadrilateral • Find sum of interior angle and diagonals of polygon • Define different quadrilaterals	**KNOWLEDGE:** • Understand polygons • Sides and angles of different polygons **SKILLS:** • Critical thinking • Problem solving • Mathematical aptitude **APPLICATION:** • Design quadrilateral robot • Finding different properties of quadrilteral . **UNDERSTANDING:** Use the property of each type of quadrilateral	• Logical-mathematical • Intrapersonal • Spatial	The students would be able to: • Use the property of each type of quadrilateral and learns to construct special types of quadrilaterals

	SQUARES AND SQUARE ROOTS • Square numbers • Properties of square numbers • Square root • Square of decimals • Estimating square root.	Students will be able to: • Define perfect square. • identify various patterns and properties related to square numbers. • know about Pythagorean triplets. • define square root • explain relation between square and square root. • Know methods of finding square root.	**KNOWLEDGE:** • Activity on square root clock • Squares of number 1-20 **SKILLS:** • Critical thinking • Problem solving • Analyical thinking **APPLICATION:** • Solving the problems using various concepts • Demonstrating the square root on word problems by different methods **UNDERSTANDING:** • Analyze and apply the properties of square numbers. • Differentiate between perfect square and square root.	• Computation • Kinesthetic • Intrapersonal • Spatial • Logical methematical intelligency	The students would be able to: • Identify squares and square number • Find the unknown value in Pythagorean triplets. • Calculate square root of a number by repeated subtraction, prime factorization, long division and estimation methods.
AUGUST No of Days: 23	<u>Cubes and cube roots.</u> • Cubes • Properties • cube root	Students will be able to: • Define cube and cube root of a number.	**KNOWLEDGE:** • Cubical blocks • grid **SKILLS:** • Critical thinking	• Kinesthetic intelligence • Logical-mathematical intelligence	The students will be able to • Relate that

	Introduction to Graphs. • A line graph. • Linear graph. • Location of a point/coordinate	• discuss the properties of cubes and their application. • Explain the difference between cube and cube root. • find cube root of a number by prime factorization. • explain about estimation method. * *apply concepts of cube and cube root in real life situations. Students will be able to: • Know about line graph. • Draw a line graph for given data and read it. • Know about linear graph. • Explain about Cartesian plane and terms related to it. • locate points on the graph and describe about coordinates, • Select appropriate scale to locate points. • Read the given linear graph.	• Problem solving • Analyical thinking **APPLICATION:** • Solving the problems using various concepts • Demonstrating the cube root on word problems by different methods **UNDERSTANDING:** • Analyze and apply the properties of cubes • Differentiate between cube root and square root. **KNOWLEDGE:** • Plot various coordinates on a graph sheet and join to make any figure. • Plotting of points. **SKILLS:** • Logical thinking • Problem solving • Analyical thinking **APPLICATION:** • Cartesian plane and terms related to it. • Construct a line graph and interpret it. **UNDERSTANDING:** • compute linear graph by plotting the coordinates	• Intrapersonal intelligence • Computation • Kinesthetic • Intrapersonal • Logical methematical intelligency	cube and cube root are inverse of each other. • develops the applicatio n skills in usage of cubes and cube roots. • discuss how to estimate cube root for perfect cube numbers The students will be able to • Define a line graph. • define a linear graph. • differentiat e between a line graph and a linear graph.

			• Depict data in the form of linear graph		
SEPTEMBER No of Days: 05	**REVISION OF TERM -1**				
CONDUCTION OF TERM -1 ASSESSMENT					
OCTOBER No of Days: 22	Ch. 8 Comparing quantities: *Ratios and percentages *increase and decrease percent *Discount, tax. *Profit and loss. *Compound interest *Annually and semi-annually.	Students will be able to: • Recall and recollect knowledge related to ratios and percentages. • find increase and decrease percent. • Find discount on a commodity. • familiarize with the concept of tax. • find profit and loss. • know the concept of compound interest. • use formula of compound interest in solving problems. • define the terms compounded-annually and semi-annually. • use of the concepts in real life.	**KNOWLEDGE:** • list any 5 essential household items needed. Find the cost and the tax imposed on them and prepare a bill. • Make a comic strip on profit and loss or compound interest **SKILLS:** • Critical thinking • Problem solving • Analyical thinking **APPLICATION:** • calculate gain or loss with respect to cost price • find tax imposed and the net amount. **UNDERSTANDING:** • compute increase and decrease of the value with respect to percentage. • calculate discount with respect to marked price and find	• Computation • Kinesthetic • Intrapersonal • Spatial	The students will be able to • differentiate between simple interest and compound interest. • analyze and apply the formula of compound interest in solving problems related to real life situations

	Exponents and Powers: • Powers with negative exponents. • Laws of exponents. • scientific notation	Students will be able to: • simplify powers with negative exponents. • apply laws of exponents. • express very large and very small numbers in scientific notation or standard form.	selling price. **KNOWLEDGE:** • find the mass of the planets and represent in scientific notation. • Make a chain /hanger displaying Laws of exponents. **SKILLS:** • Critical thinking • Problem solving • Analyical thinking **APPLICATION:** • Simplify exponents with negative powers. • Compute increase and decrease of the value with respect **UNDERSTANDING:** • Compute very large and small numbers into scientific notation • Laws of exponents	• Kinesthetic intelligence • Logical-mathematical intelligence • Intrapersonal intelligence	Students will be able to: • Simplify given expressions by applying laws of exponents. • Convert very small and very large numbers into scientific notation
November No of Days: 23	Algebraic expressions and identities: • basic terms related to algebra. • addition and subtraction of expressions. • multiplication of algebraic expressions • what is an identity? • standard	Students will be able to: • identify the terms related to algebraic expressions. • identify like and unlike terms to add and subtract algebraic expressions. • use distributive property for multiplication of algebraic expressions. • simplify expressions	**KNOWLEDGE:** • To prove the identity $(a+b)^2 = a^2 + 2ab + b^2$ • To know the standard identities **SKILLS:** • Critical thinking • Problem solving • Analyical thinking **APPLICATION:** • Regonise like and unlike terms and perform addition and	• Kinesthetic intelligence • Logical-mathematical intelligence • Intrapersonal intelligence	Students will be able to • define terms like monomial, binomial, trinomial, variable. • find add, subtract. product of algebraic

	identities and application.	for a given value of the variable. • define and compare equation and identity. • use multiplication of binomials to explore and verify identities.	subtraction of expressions • calculate value of the variable by simplifying the expressions. **UNDERSTANDING:** • Enable students to understand that there can be different approaches to solve problems in life. So stay positive and solve problems confidently.		expressions • Use various algebraic identities in order to solve problems related to day to day life.
December No of Days: 11	<u>Mensuration:</u> *plane figures *Area of trapezium *Area of polygons *Surface area of cube, cuboid and cylinder. *Volume of cube, cuboid and cylinder.	Students will be able to: • recall basic formulas for areas and perimeter of plane figures. • Breakdown a given trapezium into known plane figures. • express areas of polygons by dividing it into triangles and rectangles. • illustrate 2D representation of a cube, cuboid and cylinder. • find surface area of cube, cuboid and cylinder. • find volume of a given cube, cuboid and	**KNOWLEDGE:** • Collage/Formula chart on mensuration • illustrate 2D and 3 D representation of various figures **SKILLS:** • Logical thinking • Problem solving • Analyical thinking **APPLICATION:** • Discuss about the area and perimeter of the ground required for different sports. • Estimate the capacity of the water tanks. **UNDERSTANDING:** • differentiate between volume and capacity. • convert the units into required form.	• Computation • Kinesthetic • Intrapersonal • Logical methematical intelligency	Students will be able to • Use appropriate methods to calculate area of a given polygon. • Analyse 3D figures and selects appropriate formula and compute surface area and volume of given

		cylinder. • calculate volume of given solid in order to find time taken at given rate.			cuboidal and cylindrical objects.
	REVISION : PT -2				
	CONDUCTION OF PT -2				
JANUARY No of Days: 21	Direct & inverse Proportions • Direct proportion. • Inverse proportion.	Students will be able to: • observe relationship between two quatities. • Examine situations and decide whether the two quantities are proportional to each other. • convert the given statement between two quantities into a table and identify the missing quantity.	**KNOWLEDGE:** • Give examples of real life situations that involve variations. • Represent proportion on a chart creatively. **SKILLS:** • Problem solving • Analytical thinking **APPLICATION:** • factorizing is a useful skill in real life. • understanding time and making calculations during travel. **UNDERSTANDING:** • Recognize and analyse the value in given situation • calculate value of the variable by simplifying the proportion	• Computation • Kinesthetic • Intrapersonal • Logical methematical intelligence	The students will be able to • analyse and find the type of variation between given two quantities. • calculate the missing value in the given situation. • solve real life problems related to variations. •
FEBRUARY No of Days:	Factorisation • Factors	Students will be able to:	**KNOWLEDGE:** • finding factors of the	•	The

22	• common factor method. • Regrouping method. • factorization using identities • Division of algebraic expressions. • Finding errors.	• express each term into irreducible factors. • find common factors for the given terms. explain about factorization by common factors method	given expressions using cards. • finding area of a plot when dimensions are given in factors form. **SKILLS:** • Critical thinking • Problem solving • Analytical thinking **APPLICATION:** • Represent the terms as product of their factors. • Apply the Identities **UNDERSTANDING:** • factorize the given expression by common factors methods. factorize by regrouping the terms express the algebraic expressions by applying identities.		student s will be able to • Use common factors method and divide the polynomial s. • check the mathemati cal statements in order to find the errors and rectify.
FEBRUARY No of Days: 22	**REVISION OF TERM -II**				
MARCH	**CONDUCTION OF FINAL ASSESSMENT**				