INFANT JESUS CONVENT SCHOOL
ANNUAL PLAN, 2023-24
MATHEMATICS - CLASS: IX

MONTH/NO OF DAYS	TOPIC: SUB TOPIC	OBJECTIVES	AIDS/ACTIVITIES	MULTIPLE INTELLIGENCE SKILLS	LEARNING OUTCOME
EXTRA CLASSES No of Days:10 April No of Days - 17	NUMBER SYSTEMS: • Rational and irrational numbers • Representation on the number line • Decimal expansion	Students will be able to: • Differentiate between rational and irrational numbers • Represent irrational numbers on the number line • Compute decimal expansion of rational and irrational numbers	**KNOWLEDGE:** • Indicate different numbers in the number system • Convert decimals into rational numbers • Sketch the number line and mark different rational numbers **SKILLS:** • Analytical thinking • Problem solving • Construction **APPLICATION:** • Discussing the number system along with relevant examples • Solving the problems using various concepts • Demonstrating the construction	• Logical-mathematical • Intrapersonal	Students will be able to: • Comprehend the difference between rational and irrational numbers • Solve and obtain the decimal expansion of real numbers • Identify and visualize irrational numbers on the number line

			work **UNDERSTANDING:** • Distinguish between rational and irrational numbers • Express decimal expansion of real numbers • Locate irrational numbers on the number line		
	NUMBER SYSTEMS: • Rationalization • Laws of exponents COORDINATE GEOMETRY: • Basic terminology • Identification and plotting of coordinates LINEAR EQUATIONS IN TWO VARIABLES: • Standard form • Solutions of linear equations in two variables	Students will be able to: • Analyze the given denominator and rationalize • Identify different laws of exponents and apply the same • Identify and plot different coordinates on the graph sheet • Find area of different figures formed by joining various coordinates along with their mirror	**KNOWLEDGE:** • Recall rational and irrational numbers in the number system • Compute square root of the given irrational numbers • State different algebraic identities • Enlist different laws of exponents • Recall basic terminology associated with the graph sheet • Substitute different values to solve the given linear equation **SKILLS:** • Critical thinking • Deductive	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Interpret the problems and apply the method of rationalization/laws of exponents • Plot various coordinates on the graph sheet and interpret • Obtain mirror image of the given coordinates • Translate the linear equations in two variables in standard form and find solutions using hit and trial method

		image • Translate the linear equations in two variables in standard form • Solve linear equations in two variables and find solutions	reasoning • Construction • Visual representation **APPLICATION:** • Illustrating the method of rationalization along with relevant examples • Interpreting and solving the problems based on different laws of exponents • Demonstrating the construction work and plotting of various coordinates on the graph sheet • Giving examples of standard form and solving linear equations in two variables **UNDERSTANDING:** • Solve problems based on rationalization and various laws of exponents • Plot and label various coordinates on the		

			graph sheet • Write the linear equations in two variables in standard form and find solutions		
MAY No of Days:12	LINEAR EQUATIONS IN TWO VARIABLES: • Graph of linear equations in two variables	Students will be able to: • Translate the word problems and interpret mathematically • Draw the graph of linear equations in two variables	**KNOWLEDGE:** • Recall the basic terminology associated with the graph • Plot coordinates on a graph sheet **SKILLS:** • Logical thinking • Deductive reasoning • Visual representation **APPLICATION:** • Interpreting the problems mathematically and framing linear equations in two variables • Demonstrating the graph work by plotting given coordinates on the graph sheet **UNDERSTANDING:** • Solve word	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Interpret the problems mathematically and frame the linear equations in two variables • Represent the linear equations in two variables graphically

			problems based on linear equations in two variables • Draw the graph of linear equations in two variables		
	REVISION: PT-1				
CONDUCTION OF PT-1 ASSESSMENT					
JULY No of Days:23	INTRODUCTION TO EUCLID'S GEOMETRY: • Euclid's biography and his contribution in Mathematics • Euclid's definitions, axioms and postulates STATISTICS: • Graphical representation of data	Students will be able to: • Enlist Euclid's axioms and postulates and differentiate between them • Identify the application of Euclid's axioms and postulates in various geometrical concepts • Reiterate Euclid's fifth postulate • Represent the given data graphically	**KNOWLEDGE:** • Recall the basic geometric terms • Define average • Make ungrouped frequency distribution table • Draw bar graphs, histograms of uniform and varying width and frequency polygons **SKILLS:** • Analytical thinking • Deductive reasoning • Formulating hypothesis • Visual representation **APPLICATION:** • Illustrating Euclid's axioms and postulates	• Logical-mathematical • Intrapersonal • Linguistic • Spatial	Students will be able to: • Know about Euclid's contribution in mathematics • Differentiate between Euclid's axioms and postulates • Apply Euclid's axioms and postulates in various geometrical concepts • Analyze the equivalent version of Euclid's fifth postulate • Draw the bar graph, histogram and frequency polygon based on the given data

			along with relevant examples • Interpreting Euclid's fifth postulate in a different way • Applying Euclid's axioms and postulates in different problems • Representing data using bar graphs and histograms of uniform and varying width **UNDERSTANDING:** • Identify Euclid's axioms and postulates and express with relevant examples • Represent the given data graphically		
AUGUST No of Days:23	LINES AND ANGLES: • Basic geometrical terms related to lines and angles • Angle axioms related to parallel lines • Properties based on triangles HERON'S FORMULA: • Area of triangles with no height given	Students will be able to: • Recall basic geometrical terms related to lines and angles • Identify different angles made by the	**KNOWLEDGE:** • Recall the basic geometric terms related to lines and angles • State angle axioms and properties related to triangles • Recall formulae to find area of various two-	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Revise basic geometrical terms related to lines and angles • Corelate different angles made by the transversal with parallel lines

		transversal with parallel lines • State different properties related to triangles and apply the same in figure based questions • Find area of triangles using Heron's formula	dimensional figures **SKILLS:** • Critical thinking • Deductive reasoning • Formulating hypothesis • Visual representation • Problem solving **APPLICATION:** • Demonstrating angle axioms and properties related to triangles along with relevant figure based questions • Discussing Heron's formula along with relevant illustrations **UNDERSTANDING:** • Identify different angle axioms • Explain the proof of various properties related to triangles • Solve figure based questions • Find area of		• Prove the properties related to triangles • Solve figure based questions using different axioms and properties • State Heron's formula • Find area of triangles using Heron's formula

			triangles using Heron's formula		
SEPTEMBER No of Days:05	**REVISION: PT 2/TERM-1**				
CONDUCTION OF PT 2/TERM-1 ASSESSMENT					
OCTOBER No of Days:22	QUADRILATERALS: • Quadrilateral and its types • Properties of various quadrilaterals • Theorems along with application based questions	Students will be able to: • Distinguish various kinds of quadrilaterals based on properties and figures • Understand different theorems along with relevant illustrations	**KNOWLEDGE:** • Identify various quadrilaterals based on properties and figures **SKILLS:** • Logical thinking • Deductive reasoning • Visual representation • Problem solving **APPLICATION:** • Giving examples of figure based questions using different properties and theorems **UNDERSTANDING:** • Classify various quadrilaterals on the basis of their properties • Solve figure based questions using	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Recall the properties of various quadrilaterals • Solve figure based questions using different properties and theorems

			different properties and theorems		
NOVEMBER No of Days:22	POLYNOMIALS: • Basic terms and definitions • Theorems • Factorization of polynomials • Algebraic identities TRIANGLES: • Basic definitions • Congruence of triangles • Properties of a triangle	Students will be able to: • Find zeroes of a polynomial • Understand the application of theorems in various polynomials • Factorize polynomials using middle term split method and algebraic identities • Differentiate among different criteria for congruence of triangles • State and prove the properties based on a triangle • Solve figure based questions	**KNOWLEDGE:** • Recall the basic terminology associated with polynomials • Identify various algebraic identities • State different congruence rules and properties based on triangles **SKILLS:** • Logical thinking • Deductive reasoning • Visual representation • Problem solving **APPLICATION:** • Discussing the terms and degree of polynomials • Explaining the application of theorems • Giving examples of various polynomials for factorization using middle term split method and	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Rehearse the basic terminology • Classify polynomials on the basis of terms and degrees • Analyze the theorems and understand the application • Identify different algebraic identities to factorize the polynomials • Enlist different congruence criterion for triangles • Apply different congruence rules and properties to solve figure based questions

			algebraic identities • Demonstrating congruence rules and properties related to triangles along with relevant figure based questions **UNDERSTANDING:** • Classify various quadrilaterals on the basis of their terms and degrees • Solve questions to find zeroes of a polynomial • Recognize various algebraic identities and theorems to factorize the polynomials • Identify different properties and congruence criteria to solve figure based questions		
	REVISION: PT-3				
CONDUCTION OF PT-3 ASSESSMENT					
DECEMBER No of Days:12	SURFACE AREAS AND VOLUMES: • Surface areas and	Students will be able to: • Identify	**KNOWLEDGE:** • Recall the basic terminology	• Logical-mathematical • Intrapersonal	Students will be able to: • Rehearse the basic

	volumes of different solid figures	similarities and differences among different solid figures • Enlist different formulae to find surface areas and volumes • Apply relevant formulae and compute surface areas and volumes of three dimensional figures	associated with solid figures • Identify various solid figures in the surroundings **SKILLS:** • Analytical thinking • Deductive reasoning • Visual representation • Problem solving **APPLICATION:** • Discussing the formulae to find surface areas and volumes using relevant illustrations • Explaining the application of different formulae in various questions **UNDERSTANDING:** • Classify various solid figures on the basis of their properties • Recognize various formulae to find surface areas and volumes • Solve questions to	• Spatial	terminology associated with three dimensional figures • Identify different formulae to compute surface areas and volumes of solid figures

			understand the application of different formulae		
JANUARY No of Days:18	CIRCLES: • Basic terms and definitions • Theorems based on circles • Application of theorems in figure based questions	Students will be able to: • Identify different parts of a circle • State and prove various theorems based on circles • Apply different theorems to solve figure based questions	**KNOWLEDGE:** • Define basic terms associated with a circle • List various theorems based on circles **SKILLS:** • Analytical thinking • Deductive reasoning • Visual representation • Problem solving **APPLICATION:** • Illustrating various theorems using relevant examples • Investigating the theorem to solve figure based questions **UNDERSTANDING:** • Locate different parts of a circle • Discuss various theorems along with relevant illustrations • Solve figure based	• Logical-mathematical • Intrapersonal • Spatial	Students will be able to: • Revise the basic terminology associated with circles • Identify the theorems to solve figure based questions

			questions		
FEBRUARY No of Days:23	**REVISION: FINAL TERM ASSESSMENT**				
MARCH	**CONDUCTION OF FINAL TERM ASSESSMENT**				