LOTUS PETAL SENIOR SECONDARY SCHOOL
GRADE - IX
SUBJECT - MATHS

Month	Chapter	Learning objectives	Teaching Methods	Learning Outcomes	Subject Enrichment Activity	Art Integration /Multi-Disciplinary
APRIL 18	1. NUMBER SYSTEMS 2. POLYNOMIALS 3. COORDINATE GEOMETRY	1. Define and explain real numbers, rational numbers, and irrational numbers. 2. Apply properties of real numbers, such as commutativity, associativity, and distributivity. 3. Simplify expressions involving real numbers. 4. Solve linear equations and inequalities involving real numbers. 5. Represent real numbers on a number line. 1. Define and explain polynomials, monomials, binomials, and trinomials. 2. Add, subtract, and multiply polynomials. 3. Factorize polynomials using various methods. 4. Solve polynomial equations. 5. Represent polynomials graphically. 1. Define and explain the concept of coordinates and	1. Demonstration Method: Use visual aids to demonstrate properties of real numbers. 2. Guided Discovery: Encourage students to explore and discover properties of real numbers through guided activities. 3. Collaborative Learning: Divide students into groups to work on simplifying expressions and solving equations involving real numbers. 4. Technology Integration: Utilize digital tools to visualize real numbers on a number line. 5. Problem-Solving Approach: Encourage students to apply properties of real numbers to solve problems. 1. Define and explain polynomials, monomials, binomials, and trinomials. 2. Add, subtract, and multiply polynomials. 3. Factorize polynomials using	1. Define and explain real numbers, rational numbers, and irrational numbers. 2. Apply properties of real numbers to simplify expressions and solve equations. 3. Represent real numbers on a number line. 4. Solve linear equations and inequalities involving real numbers. 5. Demonstrate understanding of real numbers through problem-solving. 1. Define and explain polynomial concepts. 2. Perform polynomial operations (addition, subtraction, multiplication). 3. Factorize polynomials using various methods. 4. Solve polynomial equations. 5. Represent polynomials graphically.	Graphing Project: Ask students to create graphs representing polynomials. Coordinate Plane Project: Ask students to create a coordinate plane and plot points and create a meaningful picture.	Make a collage representing real-world applications of number systems. 1. Critical Thinking: Analyze and solve problems involving real numbers. 2. Problem-Solving: Apply properties of real numbers to solve problems. 3. Communication: Present solutions to problems involving real numbers. 4. Collaboration: Work in groups to solve problems involving real numbers. 5. Creativity: Find innovative solutions to problems involving real numbers.

		coordinate planes. 2. Plot points on the coordinate plane. 3. Find the distance between two points on the coordinate plane. 4. Find the midpoint of a line segment on the coordinate plane. 5. Determine the equation of a line on the coordinate plane.	various methods. 4. Solve polynomial equations. 5. Represent polynomials graphically. Problem-Solving Approach: Encourage students to apply coordinate geometry concepts to solve problems. Demonstration Method: Use visual aids to demonstrate coordinate geometry concepts.	1. Define and explain coordinate geometry concepts. 2. Plot points and find distances, midpoints, and equations of lines on the coordinate plane. 3. Apply coordinate geometry concepts to solve problems. 4. Represent geometric shapes on the coordinate plane. 5. Demonstrate understanding of coordinate geometry through problem-solving.		1. Critical Thinking: Analyze and solve polynomial problems. 2. Problem-Solving: Apply polynomial concepts to solve problems. 3. Communication: Present solutions to polynomial problems. 4. Collaboration: Work in groups to solve polynomial problems. 5. Creativity: Find innovative solutions to polynomial problems. Geometric Patterns: Ask students to create patterns using geometric shapes on the coordinate plane. 1. Critical Thinking: Analyze and solve coordinate geometry problems. 2. Problem-Solving: Apply coordinate geometry concepts to solve problems. 3. Communication: Present solutions to coordinate geometry problems. 4. Collaboration: Work in groups to solve coordinate geometry problems. 5. Creativity: Find innovative solutions

						to coordinate geometry problems.
MAY 11	4. LINEAR EQUATIONS IN TWO VARIABLES 5. INTRODUCTION TO EUCLID'S GEOMETRY 6. LINES AND ANGLES	1. Define and explain linear equations in two variables. 2. Graph linear equations on a coordinate plane. 3. Solve linear equations using substitution and elimination methods. 4. Represent real-world problems using linear equations. 5. Analyze and interpret solutions to linear equations. 1. Define and explain basic geometric concepts (points, lines, angles, planes). 2. Understand and apply Euclid's postulates and theorems. 3. Identify and classify different types of angles and triangles. 4. Apply geometric concepts to solve problems. 5. Develop spatial reasoning and visualization skills. 1. Define and explain basic concepts of lines and angles. 2. Identify and classify different types of angles (acute, obtuse, right, straight). 3. Understand and apply properties of lines and angles (intersection, parallel, perpendicular).	1. Demonstration Method: Use visual aids to demonstrate graphing and solving linear equations. 2. Guided Discovery: Encourage students to explore and discover linear equation concepts through guided activities. 3. Collaborative Learning: Divide students into groups to work on linear equation problems. 4. Technology Integration: Utilize digital tools to visualize linear equations. 5. Problem-Solving Approach: Encourage students to apply linear equation concepts to solve problems. 1. Demonstration Method: Use visual aids to demonstrate geometric concepts. 2. Guided Discovery: Encourage students to explore and discover geometric concepts through guided activities. 3. Collaborative Learning: Divide students into groups to work on geometric problems. 4. Problem-Solving Approach: Encourage students to apply concepts of lines and angles to	1. Define and explain linear equation concepts. 2. Graph and solve linear equations using various methods. 3. Represent real-world problems using linear equations. 4. Analyze and interpret solutions to linear equations. 5. Demonstrate understanding of linear equations through problem-solving. 1. Define and explain basic geometric concepts. 2. Apply Euclid's postulates and theorems to solve problems. 3. Identify and classify different types of angles and triangles. 4. Apply geometric concepts to solve problems. 5. Demonstrate understanding of geometric concepts through problem-solving. 1. Define and explain basic concepts of lines and angles. 2. Identify and classify different types of angles. 3. Apply properties of lines and angles to solve problems. 4. Develop spatial reasoning and visualization skills. 5. Demonstrate understanding	Collaborative Problem-Solving: Assign collaborative problem-solving activities involving lines and angles.	Graph Art: Ask students to create artwork using graphs of linear equations. 1. Critical Thinking: Analyze and solve linear equation problems. 2. Problem-Solving: Apply linear equation concepts to solve problems. 3. Communication: Present solutions to linear equation problems. 4. Collaboration: Work in groups to solve linear equation problems. 5. Creativity: Find innovative solutions to linear equation problems. 1. Critical Thinking: Analyze and solve problems involving lines and angles. 2. Problem-Solving: Apply concepts of lines and angles to solve problems. 3. Communication: Present solutions to

		4. Solve problems involving lines and angles. 5. Develop spatial reasoning and visualization skills.	solve problems.	of concepts of lines and angles through problem-solving.		problems involving lines and angles. 4. Collaboration: Work in groups to solve problems involving lines and angles. 5. Creativity: Find innovative solutions to problems involving lines and angles. Creating mind map to sum up the theorems and properties of line and angles.
JUNE 1	6. LINES AND ANGLE CONT….	Define and explain basic concepts of lines and angles. 2. Identify and classify different types of angles (acute, obtuse, right, straight). 3. Understand and apply properties of lines and angles (intersection, parallel, perpendicular). 4. Solve problems involving lines and angles. 5. Develop spatial reasoning and visualization skills.	1. Demonstration Method: Use visual aids to demonstrate concepts of lines and angles. 2. Guided Discovery: Encourage students to explore and discover concepts of lines and angles. 3. Collaborative Learning: Divide students into groups to work on problems involving lines and angles.	Define and explain basic concepts of lines and angles. 2. Identify and classify different types of angles. 3. Apply properties of lines and angles to solve problems. 4. Develop spatial reasoning and visualization skills. 5. Demonstrate understanding of concepts of lines and angles through problem-solving.		Critical Thinking: Analyze and solve problems involving lines and angles. 2. Problem-Solving: Apply concepts of lines and angles to solve problems. 3. Communication: Present solutions to problems involving lines and angles. 4. Collaboration: Work in groups to solve problems involving lines and angles. 5. Creativity: Find innovative solutions to problems involving lines and angles.
JULY 16	7. TRIANGLES 10. HERON'S	1. Define and explain basic concepts of triangles (angles, sides, vertices).	1. Demonstration Method: Use visual aids to demonstrate triangle concepts.	1. Define and explain basic concepts of triangles. 2. Classify triangles based on	Conducting a quiz where students have to find the area of a	1. Critical Thinking: Analyze and solve triangle problems.

	FORMULA 11. SURFACE AREAS AND VOLUMES	2. Classify triangles based on sides (equilateral, isosceles, scalene) and angles (acute, obtuse, right). 3. Apply properties of triangles (congruence, similarity) to solve problems. 4. Solve problems involving triangle inequalities and trigonometric ratios. 5. Develop spatial reasoning and visualization skills. 1. Define and explain Heron's Formula for finding the area of a triangle. 2. Apply Heron's Formula to find the area of a triangle given its side lengths. 3. Solve problems involving Heron's Formula. 4. Develop problem-solving skills using Heron's Formula. 5. Apply Heron's Formula to real-world problems. 1. Define and explain surface area and volume of 3D shapes. 2. Apply formulas to find surface area and volume of 3D shapes. 3. Solve problems involving surface area and volume. 4. Develop spatial reasoning and visualization skills. 5. Apply surface area and volume concepts to real-world problems.	2. Guided Discovery: Encourage students to explore and discover triangle concepts. 3. Collaborative Learning: Divide students into groups to work on triangle problems. 1. Demonstration Method: Use visual aids to demonstrate Heron's Formula. 2. Guided Discovery: Encourage students to explore and discover Heron's Formula. 3. Collaborative Learning: Divide students into groups to work on problems involving Heron's Formula. 4. Technology Integration: Utilize digital tools to visualize Heron's Formula. 5. Problem-Solving Approach: Encourage students to apply Heron's Formula to solve problems. 1. Demonstration Method: Use visual aids to demonstrate surface area and volume concepts. 2. Guided Discovery: Encourage students to explore and discover surface area and volume concepts. 3. Collaborative Learning: Divide students into groups to work on surface area and volume problems. 4. Technology Integration: Utilize digital tools to visualize surface area and volume concepts. 5. Problem-Solving Approach: Encourage students to apply surface area and volume	sides and angles. 3. Apply properties of triangles to solve problems. 4. Solve problems involving triangle inequalities and trigonometric ratios. 5. Demonstrate understanding of triangle concepts through problem-solving. 1. Define and explain Heron's Formula. 2. Apply Heron's Formula to find the area of a triangle. 3. Solve problems involving Heron's Formula. 4. Develop problem-solving skills using Heron's Formula. 5. Demonstrate understanding of Heron's Formula through problem-solving. 1. Define and explain surface area and volume concepts. 2. Apply formulas to find surface area and volume of 3D shapes. 3. Solve problems involving surface area and volume. 4. Develop spatial reasoning and visualization skills. 5. Demonstrate understanding of surface area and volume concepts through problem-solving.	triangle using Heron's Formula Surface Area and Volume Project: Ask students to create a project involving surface area and volume..	2. Problem-Solving: Apply triangle concepts to solve problems. 3. Communication: Present solutions to triangle problems. 4. Collaboration: Work in groups to solve triangle problems. 5. Creativity: Find innovative solutions to triangle problems. 1. Critical Thinking: Analyze and solve problems involving Heron's Formula. 2. Problem-Solving: Apply Heron's Formula to solve problems. 3. Communication: Present solutions to problems involving Heron's Formula. 4. Collaboration: Work in groups to solve problems involving Heron's Formula. 5. Creativity: Find innovative solutions to problems involving Heron's Formula. 1. Critical Thinking: Analyze and solve problems involving surface area and volume. 2. Problem-Solving: Apply surface area

			concepts to solve problems.			and volume concepts to solve problems. 3. Communication: Present solutions to problems involving surface area and volume. 4. Collaboration: Work in groups to solve problems involving surface area and volume. 5. Creativity: Find innovative solutions to problems involving surface area and volume. **Surface area and volume- craft** Students create 3D models using various materials (clay, cardboard, etc.) and calculate the surface area and volume.
AUGUST 14	8. QUADRILATERALS And Revision	1. Define and explain quadrilaterals and their properties. 2. Identify and classify different types of quadrilaterals (parallelogram, rectangle, square, trapezoid). 3. Apply properties of quadrilaterals to solve problems. 4. Develop spatial reasoning and visualization skills. 5. Apply quadrilateral concepts to real-world problems.	1. Demonstration Method: Use visual aids to demonstrate quadrilateral concepts. 2. Guided Discovery: Encourage students to explore and discover quadrilateral concepts. 3. Collaborative Learning: Divide students into groups to work on quadrilateral problems. 4. Problem-Solving Approach: Encourage students to apply quadrilateral concepts to solve problems.	1. Define and explain quadrilateral concepts. 2. Identify and classify different types of quadrilaterals. 3. Apply properties of quadrilaterals to solve problems. 4. Develop spatial reasoning and visualization skills. 5. Demonstrate understanding of quadrilateral concepts through problem-solving.		Creating mind map. 1. Critical Thinking: Analyze and solve problems involving quadrilaterals. 2. Problem-Solving: Apply quadrilateral concepts to solve problems. 3. Communication: Present solutions to problems involving quadrilaterals. 4. Collaboration: Work in groups to

						solve problems involving quadrilaterals. 5. Creativity: Find innovative solutions to problems involving quadrilaterals.
SEPTEMBER 8	EXAMS	-	-	-	-	-
OCTOBER 10	9. CIRCLES	1. Define and explain circle concepts (center, radius, diameter, circumference). 2. Apply formulas to find circumference and area of circles. 3. Identify and explain properties of circles (congruent circles, concentric circles). 4. Solve problems involving circles. 5. Develop spatial reasoning and visualization skills.	1. Demonstration Method: Use visual aids to demonstrate circle concepts. 2. Guided Discovery: Encourage students to explore and discover circle concepts. 3. Collaborative Learning: Divide students into groups to work on circle problems. 4. Technology Integration: Utilize digital tools to visualize circle concepts. 5. Problem-Solving Approach: Encourage students to apply circle concepts to solve problems.	1. Define and explain circle concepts. 2. Apply formulas to find circumference and area of circles. 3. Identify and explain properties of circles. 4. Solve problems involving circles. 5. Demonstrate understanding of circle concepts through problem-solving.	To verify that angles in the same segment are equal.	1. Critical Thinking: Analyze and solve problems involving circles. 2. Problem-Solving: Apply circle concepts to solve problems. 3. Communication: Present solutions to problems involving circles. 4. Collaboration: Work in groups to solve problems involving circles. 5. Creativity: Find innovative solutions to problems involving circles.
NOVEMBER 12	12. STATISTICS	1. Define and explain basic statistical concepts (mean, median, mode, range). 2. Collect and analyze data to solve problems. 3. Interpret and present data in graphical and numerical forms. 4. Apply statistical concepts to real-world problems. 5. Develop critical thinking and problem-solving skills.	1. Demonstration Method: Use visual aids to demonstrate statistical concepts. 2. Guided Discovery: Encourage students to explore and discover statistical concepts. 3. Collaborative Learning: Divide students into groups to work on statistical problems. 4. Technology Integration:	1. Define and explain basic statistical concepts. 2. Collect and analyze data to solve problems. 3. Interpret and present data in graphical and numerical forms. 4. Apply statistical concepts to real-world problems. 5. Demonstrate understanding of statistical concepts through	Data Collection: Conduct surveys or experiments to collect data. AI Activity Description Rock-Paper-Scissors: Ask the students to go on the link: https://www.afiniti.com	Data Visualization: Ask students to create visual representations of data using graph. 1. Critical Thinking: Analyze and interpret data. 2. Problem-Solving: Apply statistical concepts to solve

			Utilize digital tools to collect, analyze, and present data. 5. Problem-Solving Approach: Encourage students to apply statistical concepts to solve problems.	problem-solving.	/corporate/rock-paper-scissors and click on play the game.	problems. 3. Communication: Present data in graphical and numerical forms. 4. Collaboration: Work in groups to collect and analyze data. 5. Creativity: Find innovative ways to present data. **STATISTICS-MUSIC** Study the frequency of musical notes or chords in a song, or the lengths of musical phrases. Represent the data using histograms or frequency tables.
DECEMBER 13	REVISION	1. Review and reinforce understanding of all topics covered in the syllabus. 2. Identify and address areas of weakness or misunderstanding. 3. Develop problem-solving skills and strategies. 4. Apply mathematical concepts to real-world problems. 5. Demonstrate confidence and fluency in mathematical skills.	1. Review Sessions: Conduct review sessions to reinforce understanding of key concepts. 2. Practice Tests: Administer practice tests to identify areas of weakness. 3. Collaborative Learning: Divide students into groups to work on practice problems. 4. Technology Integration: Utilize digital tools to provide additional practice and review. 5. Formative Assessments:	1. Demonstrate understanding of all topics covered in the syllabus. 2. Apply mathematical concepts to solve problems. 3. Identify and address areas of weakness or misunderstanding. 4. Develop problem-solving skills and strategies. 5. Demonstrate confidence and fluency in mathematical skills.	1. Math Olympiad: Participate in math olympiad competitions to challenge students. 2. Math Fair: Host a math fair where students can showcase their projects.	Recalling the concepts by creating colourful flow charts. 1. Critical Thinking: Analyze and solve mathematical problems. 2. Problem-Solving: Apply mathematical concepts to solve problems. 3. Communication:

			Regularly assess student understanding to inform instruction.			Present mathematical concepts and solutions. 4. Collaboration: Work in groups to solve mathematical problems. 5. Creativity: Find innovative solutions to mathematical problems.
JANUARY 6	REVISION	1. Review and reinforce understanding of all topics covered in the syllabus. 2. Identify and address areas of weakness or misunderstanding. 3. Develop problem-solving skills and strategies. 4. Apply mathematical concepts to real-world problems. 5. Demonstrate confidence and fluency in mathematical skills.	1. Review Sessions: Conduct review sessions to reinforce understanding of key concepts. 2. Practice Tests: Administer practice tests to identify areas of weakness. 3. Collaborative Learning: Divide students into groups to work on practice problems. 4. Technology Integration: Utilize digital tools to provide additional practice and review. 5. Formative Assessments: Regularly assess student understanding to inform instruction.	1. Demonstrate understanding of all topics covered in the syllabus. 2. Apply mathematical concepts to solve problems. 3. Identify and address areas of weakness or misunderstanding. 4. Develop problem-solving skills and strategies. 5. Demonstrate confidence and fluency in mathematical skills.	1. Math Olympiad: Participate in math olympiad competitions to challenge students. 2. Math Fair: Host a math fair where students can showcase their projects.	Recalling the concepts by creating colourful flow charts. 1. Critical Thinking: Analyze and solve mathematical problems. 2. Problem-Solving: Apply mathematical concepts to solve problems. 3. Communication: Present mathematical concepts and solutions. 4. Collaboration: Work in groups to solve mathematical problems. 5. Creativity: Find innovative solutions to mathematical problems.
FEBRUARY	REVISION	1. Review and reinforce understanding of all topics covered in the syllabus. 2. Identify and address areas of weakness or misunderstanding.	1. Review Sessions: Conduct review sessions to reinforce understanding of key concepts. 2. Practice Tests: Administer practice tests to identify areas	1. Demonstrate understanding of all topics covered in the syllabus. 2. Apply mathematical concepts to solve problems.	1. Math Olympiad: Participate in math olympiad competitions to challenge students. 2. Math Fair: Host a	Recalling the concepts by creating colourful flow charts. 1. Critical Thinking:

		3. Develop problem-solving skills and strategies. 4. Apply mathematical concepts to real-world problems. 5. Demonstrate confidence and fluency in mathematical skills.	of weakness. 3. Collaborative Learning: Divide students into groups to work on practice problems. 4. Technology Integration: Utilize digital tools to provide additional practice and review. 5. Formative Assessments: Regularly assess student understanding to inform instruction.	3. Identify and address areas of weakness or misunderstanding. 4. Develop problem-solving skills and strategies. 5. Demonstrate confidence and fluency in mathematical skills.	math fair where students can showcase their projects.	Analyze and solve mathematical problems. 2. Problem-Solving: Apply mathematical concepts to solve problems. 3. Communication: Present mathematical concepts and solutions. 4. Collaboration: Work in groups to solve mathematical problems. 5. Creativity: Find innovative solutions to mathematical problems.
MARCH	NEW SESSION					