Class X

SYLLABUS OVERVIEW
&
SPLIT-UP SYLABUSS

SUBJECT: MATHEMATICS-A

Teacher: Ma'am RZ

Chapter No.	Name of the Chapter	Marks
	PT-I	
	Real Numbers	
	Polynomial	
	Linear Equations in two Variables	
	HALF YEARLY	
	Quadratic EquationX	
	Statistics	
	PT-II	
	Arithmetic Progressions(AP)	
	Surface Areas and Volumes	
	YEARLY	

TERM-I				
Month	**No. of Days**	**No. of Periods**	**Lesson/Unit**	**Activities/Projects /Practical experiment to be held/Specific Assessment Tools(s)**
Periodic Test- I (April-June)	41	6 9	**Real Numbers** 1. Introductin 2. The Fundamental Theorem of Arithmetic : • Prime Numbers • Composite Numbers • Prime Numbers • HCF and LCM Uniqueness 3. Revisiting Irrational Number **Polynomial** 1. Introduction ○ What is a polynomial? ○ Degree of a polynomial 2. Geometrical meaning of the zeroes of a polynomial. ○ Relation between the graphs and the zeroes ○ Graphical representation of linear and quadritic polynomials	**Activity 1** Number System Puzzle Quest **Activity 2** Design Your Own Polynomial Puzzle

		9	3. Relationship between zeroes and coefficients of a polynomial. ○ Linear polynomial ○ Quadratic polynomial ○ Cubic polynomial **Linear Equations in two Variables** 1.Introduction Meaning of a linear equation in two variables Standard form: ax + by + c = 0 2. Solution of a Linear Equation Concept of solution (i.e., values of x and y that satisfy the equation) Infinitely many solutions 3. Graphical Representation of Linear Equations Plotting linear equations on the Cartesian plane Drawing graphs using solutions 4. Equations of Lines Parallel to Axes Equations of the form x = a (vertical lines) Equations of the form y = b (horizontal lines) 5. Examples and Applications Real-life problems leading to linear equations Framing equations from word problems	**Activity 3** Understanding Graphical and Algebraic Representation of Pair of Linear Equations
Half Yearly (July-Sept)	47	12	**Quadratic Equation** 1.Introduction to Quadratic Equations • Definition of a quadratic equation • Standard form of a quadratic equation: • $ax^2 + bx + c = 0$, where a ≠ 0 . • Comparison with linear and other polynomial equations 2.Roots (Solutions) of a Quadratic Equation • Meaning of the roots/zeros of a quadratic equation • Finding roots using: • Factorization method • Completing the square (optional or additional) • Quadratic formula:$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$ 3.Nature of Roots Discriminant () and its role in determining nature of roots: • If $D > 0$ Two distinct real roots • If $D = 0$ Two equal real roots	**Activity 4** **Design a Quadratic Word Problem**

			• If $D < 0$ No real roots (complex roots) 4.Applications of Quadratic Equations • Solving real-life problems using quadratic equations • Formulating word problems into quadratic equations • Examples: Motion problems, age problems, area problems, etc. **Statistics** 1. Introduction to Statistics Real-life applications of statistics Importance and use of statistical tools 2. Mean of Grouped Data Direct Method Assumed Mean Method Comparison of methods 3. Median of Grouped Data Cumulative frequency distribution Formula for median How to find the median class Application of the median formula 4. Mode of Grouped Data Concept of modal class Mode formula 5. Comparison of Mean, Median, and Mode Which measure is most suitable in a given context Effect of extreme values on each 6. Empirical Relationship (Optional/Enrichment)	**Activiy 5** Survey and Data Handling

TERM-II				
Month	**No. of Days**	**No. of Periods**	**Lesson/Unit**	**Activities/Projects /Practical experiment to be held/Specific Assessment Tools(s)**
Periodic Test- II (Oct-Dec)	38	9	**Arithmetic Progressions(AP)** 1. Introduction to AP • Real-life examples of sequences • Definition of AP • Identification of AP from a given sequence 2. General Term (n^{th} term) of an AP • Derivation of Formula: $a_n = a + (n-1)d$ • Finding the n^{th} term from given a and d • Determining if the a given number is a term of an AP. 3. Sum of Frist n Terms of an AP • Derivation of formula: ○ $S_n = \frac{n}{2}[2a + (n-1)d]$ ○ $S_n = \frac{n}{2}(a + l)$ • Application in problem – solving • Words problems based on daily life 4. Application of an AP • Real life context problems • Word problems involving sum and n^{th} term. **Surface Areas and Volumes** 1.Introduction Real – life relevance of surface area and volume Importance in daily objects and applications 2. Surface Area of a Combination of Solids : Cubes, Cuboids, Spheres, Hemispheres, Cylinders, Cones. 3. Volumes of a Combination of Solids : Cubes, Cuboids, Spheres, Hemispheres, Cylinders, Cones. 4. Conversions of Solids (One Solid to another – melting and recasting). 5. Summary of Formulas CSA and TSA : Cube, Cuboid, Sphere, Hemisphere, Cylinder, Cone.	**Activity 6** Real-life AP Explorer **Activity 7** Design your Mini Water Tank

Promotion Exam (Jan-Feb)	26		Revision	Revision

SYLLABUS OVERVIEW

SUBJECT: MATHEMATICS-B

Teacher: Sir CP

Chapter No.	Name of the Chapter	Marks
	PT-I	
6	**Triangles**	20
7	**Coordinate Geometry**	20
	HALF YEARLY	
8	**Introduction to Trigonometry**	20
10	**Circles**	20
	PT-II	
11	**Areas related to circle**	20
	Surface Areas and Volumes	20
	YEARLY	
	Revision	40

TERM-I

Month	No. of Days	No. of Periods	Lesson/Unit	Activities/Projects/Practical experiment to be held/Specific Assessment Tools(s)
April - June	41	12	**UNIT IV: GEOMETRY** **Chapter-6: TRIANGLES** Definitions, examples, counter examples of similar triangles. 1. (Prove) If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio. 2. State (without proof) If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side. 3. State (without proof) If in two triangles, the corresponding angles are equal, their corresponding sides are proportional and the triangles are similar. 4. State (without proof) If the corresponding sides of two triangles are proportional, their corresponding angles are equal and the two triangles are similar. 5. State (without proof) If one angle of a triangle is equal to one angle of another triangle and the sides	**Activity-1** To verify the Basic Proportionality Theorem.

	12	6	including these angles are proportional, the two triangles are similar. **UNIT III: COORDINATE GEOMETRY** **Chapter-7: Coordinate Geometry** Concepts of coordinate geometry. Distance formula. Section formula (internal division).	**Activity-2 (Projects)** To make a geometry coordinates using chart paper.
Half Yearly (July-Sept)	47	12 10	**UNIT V: TRIGONOMETRY** **Chapter-8: Introduction to Trigonometry** 1. Trigonometric ratios of an acute angle of a right-angled triangle. Proof of their existence (well defined). 2. Motivate the ratios whichever are defined at 0° and 90°.Values of the trigonometric ratios of 30°, 45° and 60°. 3. Relationships between the ratios. 4. Proof and applications of the identity sin2A + cos2A=1. 5. Only simple identities to be given. **UNIT IV: GEOMETRY** **Chapter-10: Circles** Tangent to a circle at point of contact. 1. (Prove) The tangent at any point of a circle is perpendicular to the radius through the point of contact. 2. (Prove) The lengths of tangents drawn from an external point to a circle are equal.	**Activity-2** To write trigonometric ratios, Pythagoras relation, Quotient relation and its Reciprocal (Chart paper). **Activity-4** To obtain the formula for area of a circle.

TERM-II				
Month	**No. of Days**	**No. of Periods**	**Lesson/Unit**	**Activities/Projects /Practical experiment to be held/Specific Assessment Tools(s)**
Periodic Test- II (Oct-Dec)	38	12	**UNIT VI: MENSURATION** **Chapter-11: Areas related to circle** 1. Area of sectors and segments of a circle. 2. Problems based on areas and perimeter /circumference of the above said plane figures. (In calculating area of segment of a circle, problems should be restricted to central angle of 60°, 90° and 120° only.	**Activity-5** To understand and compare the areas of a circle, sector, and segment.
		6	**UNIT VII: STATISTICS AND PROBABILITY** 1. Classical definition of probability. 2. Simple problems on finding the probability of an event.	**Activity-6** To familiarizes with the idea of probability of an event by

				throwing a pair of dice.
Promotion Exam (Jan-Feb)	26	15	1. **Revision Classes** o Brief revision sessions will be conducted for all major chapters. o Focus on important questions, previous year papers, and frequently asked topics. 2. **Remedial Classes** o Special support classes for academically weak students. o Focus on strengthening basic concepts and improving problem-solving skills. o Individual attention will be provided wherever necessary. 3. **Doubt-Clearing Sessions** o Interactive sessions to clear students' doubts before exams. o Subject teachers will be available at scheduled times. 4. **Practice Worksheets & Assignments** o Regular practice material will be provided to reinforce learning. o Homework submissions will be monitored closely. 5. **Pre-Board Examinations** o Will be conducted as per the timetable to simulate board exam conditions. o Helps students assess their preparedness and manage exam pressure. 6. **Feedback & Performance Review** o Detailed analysis of performance in class tests and pre-boards. o One-on-one feedback for improvement. 7. **Parental Involvement** o Parents of slow learners will be informed and involved in the support plan. o Regular communication regarding student progress.	