Subject ……Mathematics………………   Class ………IX……………..

MONTH & CHAPTER	CONTENT	ACTIVITIES/ Co-curricular Activities
(APRIL) NUMBER SYSTEM	Review of representation of natural numbers, integers, rational numbers on the number line. Rational numbers as recurring/ terminating decimals. Operations on real numbers. 1. Examples of non-recurring/non-terminating decimals. Existence of non-rational numbers (irrational numbers) such as , $\sqrt{2}, \sqrt{3}$ and their representation on the number line 2. Rationalization (with precise meaning) of real numbers of the type 1	Square root spiral.
(MAY) POLYNOMIALS	Definition of a polynomial in one variable, with examples and counter examples. Coefficients of a polynomial, terms of a polynomial and zero polynomial. Degree of a polynomial. Constant, linear, quadratic and cubic polynomials. Monomials, binomials, trinomials. Factors and multiples. Zeros of a polynomial. Factorization of $ax^2 + bx + c$, a $\neq 0$ where a, b and c are real numbers, and of cubic polynomials using the Factor Theorem. Recall of algebraic expressions and identities. Verification of identities	Proof of $(a+b)^2$ by cut & paste method
(JUNE) COORDINATE GEOMETRY	The Cartesian plane, coordinates of a point, names and terms associated with the coordinate plane, notations, plotting points in the plane.	Draw a map of India on the Cartesian plane and ,find the quadrants in which Delhi , Mumbai, Kolkata and Chennai lie.
LINEAR EQUATIONS IN TWO VARIABLES	Recall of linear equations in one variable. Introduction to the equation in two variables. Focus on linear equations of the type ax+by+c=0. Explain that a linear equation in two variables has infinitely many solutions and justify their being written as ordered pairs of real numbers, plotting them and showing that they lie on a line. Graph of linear equations in two variables. Examples, problems from real life with algebraic and graphical solutions being done simultaneously	Go to the nearby park on bicycle note your speed after every five minutes and draw its speed time graph.
(JULY)	1. (Motivate) If a ray stands on a line, then the sum of the two adjacent angles so formed is 180˚ and the converse. 2. (Prove) If two lines intersect, vertically opposite	1. Angles sum property of a triangle is 180°.

LINES AND ANGLES	angles are equal. 3. (Motivate) Results on corresponding angles, alternate angles, interior angles when a transversal intersects two parallel lines. 4. (Motivate) Lines which are parallel to a given line are parallel. 5. (Prove) The sum of the angles of a triangle is $180°$. 6. (Motivate) If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interior opposite angles.	2. Models of exterior angle of a triangle.
TRIANGLES	1. (Motivate) Two triangles are congruent if any two sides and the included angle of one triangle is equal to any two sides and the included angle of the other triangle (SAS Congruence). 2. (Motivate) Two triangles are congruent if any two angles and the included side of one triangle is equal to any two angles and the included side of the other triangle (ASA Congruence). 3. (Motivate) Two triangles are congruent if the three sides of one triangle are equal to three sides of the other triangle (SSS Congruence). 4. (Motivate) Two right triangles are congruent if the hypotenuse and a side of one triangle are equal (respectively) to the hypotenuse and a side of the other triangle. (RHS Congruence) 5. (Prove) The angles opposite to equal sides of a triangle are equal. 6. (Motivate) The sides opposite to equal angles of a triangle are equal. 7. (Motivate) The sides opposite to equal angles of a triangle are equal.	Model of exterior angle of a triangle is equal to sum of interior opposite angles.
(AUGUST) HERON'S FORMULA Revision UT -I	Area of a triangle using Heron's formula (without proof). UT-I	
(SEPTEMBER) STATISTICS	Introduction to Statistics: Collection of data, presentation of data — tabular form, ungrouped / grouped, bar graphs, histograms	Collect the data of family members of 15 to 20 families(age-wise). Find their mean, median and mode. Also draw the Histogram of collected data
Revision UT-II	UT - II Exams	

MONTH & CHAPTER	CONTENT	ACTIVITIES/ Co-curricular Activities
(OCTOBER) QUADRILATERALS	1. (Prove) The diagonal divides a parallelogram into two congruent triangles. 2. (Motivate) In a parallelogram opposite sides are equal, and conversely. 3. (Motivate) In a parallelogram opposite angles are equal, and conversely. 4. (Motivate) A quadrilateral is a parallelogram if a pair of its opposite sides is parallel and equal. 5. (Motivate) In a parallelogram, the diagonals bisect each other and conversely. 6. (Motivate) In a triangle, the line segment joining the mid points of any two sides is parallel to the third side and in half of it and (motivate) its converse.	The sum of either pair of the opposite angles of a cyclic quadrilateral is 180°.(by cut and paste method)
CIRCLES Revision Term -I	Through examples, arrive at definition of circle and related concepts-radius, circumference, diameter, chord, arc, secant, sector, segment, subtended angle. 1. (Prove) Equal chords of a circle subtend equal angles at the centre and (motivate) its converse. 2. (Motivate) The perpendicular from the centre of a circle to a chord bisects the chord and conversely, the line drawn through the centre of a circle to bisect a chord is perpendicular to the chord. 3. (Motivate) Equal chords of a circle (or of congruent circles) are equidistant from the centre (or their respective centres) and conversely. 4. (Motivate) The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle. 5. (Motivate) Angles in the same segment of a circle are equal. 6. (Motivate) The sum of either of the pair of the opposite angles of a cyclic quadrilateral is 180° and its converse.	The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle. (by cut and paste method)
(NOVEMBER)	TERM - I Exams	

(DECEMBER) CONSTRUCTIONS	1. Construction of bisectors of line segments and angles of measure $60°$, $90°$, $45°$ etc., equilateral triangles. 2. Construction of a triangle given its base, sum/difference of the other two sides and one base angle.	
PROBABILITY	History, Repeated experiments and observed frequency approach to probability. Focus is on empirical probability. (A large amount of time to be devoted to group and to individual activities to motivate the concept; the experiments to be drawn from real - life situations, and from examples used in the chapter on statistics).	Collect the data of family members of 15 to 20 families(age-wise). Find the probability for number of children , government employees, female working members , school going children etc.
SURFACE AREA AND VOLUME	Surface areas and volumes of cubes, cuboids, spheres (including hemispheres) and right circular cylinders/cones.	Models of cubes, cuboids, cylinders, Cones .
(JANUARY)	UT - III Exams	
(FEBRUARY- MARCH)	Revision of Term - II and Exams	

Syllabus for Unit Test - I : Number System , Linear Equations in two variables , Coordinate Geometry, Lines and Angles.

Syllabus for Unit Test - II : Triangles , Heron's formula , Statistics.

Syllabus for Term - I : Number System , Linear Equations in two variables , Coordinate Geometry , Lines and Angles , Triangles , Heron's formula , Statistics.

Syllabus for Unit Test - III : Polynomials , Quadrilaterals , Surface area and Volume.

Syllabus for Term -II : Polynomials , Quadrilaterals , Circles , Constructions , Surface area and Volume , Probability.