BLOOM PUBLIC SCHOOL

C-8 Vasant Kunj, New Delhi

Syllabus for the Session 2025-26

Class: IX

Subject: Mathematics

SYLLABUS			
MONTH	**CHAPTER (NCERT Text book)**	**CONTENT**	**PRACTICAL**
April	Ch.1: Number Systems	1. Review of representation of natural numbers, integers, and rational numbers on the number line. Rational numbers as recurring/ terminating decimals. Operations on real numbers. 2. 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. Explaining that every real number is represented by a unique point on the number line and conversely, viz. every point on the number line represents a unique real number. 3. Definition of nth root of a real number. 4. Rationalization (with precise meaning) of real numbers of the type $\frac{1}{a+b\sqrt{x}}$ and $\frac{1}{\sqrt{x}+\sqrt{y}}$ (and their combinations) where x and y are natural numbers and a and b are integers. 5. Recall of laws of exponents with integral powers. Rational exponents with positive real bases (to be done by particular cases,	**Activity 1-** (Art-integration) Make a Square-root spiral with $\sqrt{2}$, $\sqrt{3}$, $\sqrt{4}$, $\sqrt{5}$, $\sqrt{6}$, $\sqrt{7}$, $\sqrt{8}$,....., $\sqrt{17}$ and incorporate it in the tribal art of Cave Painting using your own ideas

	Ch 2: Polynomials	allowing learner to arrive at the general laws.) 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. Motivate and State the Remainder Theorem with examples. Statement and proof of the Factor Theorem. 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: (x+y+z)² = x²+y²+z²+ 2xy+2yz+2zx (x+y)³ = x³+ y³ +3xy(x+y) (x-y)³ = x³- y³-3xy(x-y) x³+ y³= (x+y)(x²-xy+y²) x³- y³=(x-y)(x² +xy+y²) x³+ y³+z³ -3xyz= (x+y+z) (x²+y²+z²-xy-yz-zx) and their use in factorization of polynomials.	**Activity 2- (Maths lab file)** To verify the algebraic identity $$(a + b)^2 = a^2 + 2ab + b^2$$
May	Ch 2: Polynomials (contd.)		

	Ch-3 Coordinate Geometry	The Cartesian plane, coordinates of a point, names and terms associated with the coordinate plane, notations.	**Activity 3- (Maths lab file)** To find the values of abscissae and ordinates of various points given in a cartesian plane.
	Ch.4: 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.	**Activity 4- (Maths lab file)** Exemplifies a linear equation in two variables and its possible solutions using real life examples. **Activity 5-** (Art-integration)- Spider webs-Art integration in linear equations
July	Ch.4: Linear Equations in two variables (contd.) Ch 5: Introduction to Euclid's Geometry. Ch 6: Lines and Angles	History - Geometry in India and Euclid's geometry. Euclid's method of formalizing observed phenomenon into rigorous Mathematics with definitions, common/obvious notions, axioms/postulates and theorems. The five postulates of Euclid. Showing the relationship between axiom and theorem, for example: (Axiom) 1. Given two distinct points, there exists one and only one line through them. (Theorem) 2. (Prove) Two distinct lines cannot have more than one point in common. 1. (Motivate) If a ray stands on a line, then the sum of the two adjacent angles so	**Activity 6- (Maths lab file)** To explain Euclid's 5th postulate with the help of a diagram. **Activity 7- (Maths lab file)** To verify experimentally that if two lines intersect, then (i) the vertically opposite angles are equal (ii) the sum of two adjacent angles is 180º (iii) the sum of all the four angles is 360º

		formed is 180 and the converse. 2. (Prove) If two lines intersect, vertically opposite angles are equal. 3. (Motivate) Lines which are parallel to a given line are parallel.	
August	Ch 6: Lines and Angles (contd.) Ch.7: 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. (Prove) 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.	**Activity 8- (Maths lab file)** To verify that the sum of the angles of a triangle is 180º.
September		Revision for Mid-Term Examination	

October	Ch 8: 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.	**Activity 9- (Maths lab file)** To verify experimentally that the sum of the angles of a quadrilateral is 360º. **Activity 10- (Maths lab file)** To verify that the quadrilateral formed by joining the mid point of the sides of a quadrilateral is a parallelogram.
	Ch 9: Circles	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. (Prove) 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.	**Activity 11- (Maths lab file)** To prove that 'Equal chords subtend equal angles at the center'. **Activity 12- (Maths lab file)** To prove that "opposite angles of the cyclic quadrilateral are supplementary". **Activity 13** (Art-integration)- Students can make different art-forms using circles or parts of circles like quadrants.

		5. (Motivate) Angles in the same segment of a circle are equal. 6. (Motivate) If a line segment joining two points subtends equal angle at two other points lying on the same side of the line containing the segment, the four points lie on a circle. 7.(Motivate) The sum of either pair of the opposite angles of a cyclic quadrilateral is 180° and its converse.	
November	Ch 9: Circles (contd.) Ch 10: Heron's Formula	Area of a triangle using Heron's formula (without proof)	**Activity 14** (Art-integration)- To calculate the area of a tile with a given design of triangles. **Activity 15** To find area of rectangle, parallelogram and triangle.
December	Ch 11: Surface Areas and Volumes	Surface areas and volumes of spheres (including hemispheres) and right circular cones.	**Activity 16- (in register)** To find the relationship among the volumes of a right circular cone, a hemisphere and a right circular cylinder of equal radii and equal heights.
January	Ch 12: Statistics	Bar graphs, histograms (with varying base lengths), and frequency polygons.	**Activity 17- (in register)** To draw histograms for classes of equal widths and varying widths.
February	Annual Exam	Revision for Annual Exam.	
ASSESSMENT SYLLABUS			

PERIODIC ASSESSMENT -1	Ch 1: Number System Ch 2: Polynomials **Activity**: Exemplifies a linear equation in two variables and its possible solutions using real life examples.
PERIODIC ASSESSMENT -2	Ch 8: Quadrilaterals Ch 9: Circles **Activity:** Finds areas of rectangle, parallelogram and triangle.
MID-TERM EXAM	Ch1: Number System Ch 2: Polynomials Ch 3: Coordinate Geometry Ch 4: Linear Equations in Two Variables Ch 5: Introduction to Euclid's Geometry Ch 6: Lines and Angles Ch 7: Triangles
ANNUAL EXAM	Ch1: Number System Ch 2: Polynomials Ch 3: Coordinate Geometry Ch 4: Linear Equations in Two Variables Ch 5: Introduction to Euclid's Geometry Ch 6: Lines and Angles Ch 7: Triangles Ch 8: Quadrilaterals Ch 9: Circles Ch 10: Heron's Formula Ch 11: Surface Areas and Volumes Ch 12: Statistics