BISHOP SCOTT BOYS' SCHOOL

C - Curriculum

D - Development &

L - Learning

O - Objectives

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MATHS

BISHOP SCOTT BOYS' SCHOOL

STUDENT CURRICULUM MANUAL

Subject : Mathematics	**Class : IX**	**Academic Plan : 2025 -26**

Month	Course Description	Learning Outcome	Activity	No. of Periods	Portion for PT & TERM Assessment
April	Chapter : 1 Number Systems Review of representation of natural numbers, integers, and rational numbers on the number line. Rational numbers as recurring/ terminating decimals. Operations on real numbers. Examples of non-recurring/non-terminating decimals. Existence of non-rational numbers (irrational numbers) such as √2 and √3 their representation on the number line. Definition of nth root of a real number. Rationalization Recall of laws of exponents with integral powers. Rational exponents with positive real bases	By the end of this chapter students will be able to understand • Difference between rational and irrationals. • Representations of real numbers on real line. • How to rationalize.	To construct a square root spiral.	14	PT- 1 Portion Ch.1. Number Systems Ch. 2. Polynomials Ch.3. CO-ORDINATE GEOMETRY Ch. 4. LINEAR EQUATIONS IN TWO VARIABLES

	Chapter 2: POLYNOMIALS Definition of and types of a polynomials . Coefficients, degree, value, factors and multiples , zeros of a polynomials. Motivate and State the Remainder Theorem with examples. Statement and proof of the Factor Theorem. Factorization of ax^2 + bx + c, a ≠ 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: $(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$ $(x \pm y)^3 = x^3 \pm y^3 \pm 3xy(x \pm y)$ $(x^3 \pm y^3) = (x \pm y)(x^2 + y^2 \mp xy)$ $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$ and their use in factorization of polynomial ***some topics will be carried forward to next month**	By the end of this chapter students will be able to • Identify any polynomial • Find the degree of a polynomial. • Find the remainder of any polynomial	To verify the algebraic identity $(x + y)^2 = x^2 + 2xy = y^2$	15	

Month	Course Description	Learning Outcome	Activity	No. of Periods	Portion for PT & TERM Assessment
May	Chapter 3: COORDINATE GEOMETRY The Cartesian plane, coordinates of a point, names and terms associated with the coordinate plane, notations.	By the end of this chapter students will be able to • Understand abscissa, ordinate, quadrant etc. • Representation of different points in the Cartesian plane. • Find the coordinate of any point.	To find the values of abscissae and ordinate of various points given in a Cartesian plane.	8	
June	Chapter 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.	By the end of this chapter students will be able to know • Condition of equation. • Types of equation. • Solution of equation • Graphical representation of linear equations	To draw the graph of given equation.	12	

Month	Course Description	Learning Outcome	Activity	No. of Periods	Portion for PT & TERM Assessment
July	Chapter 5: INTRODUCTION TO EUCLID'S GEOMETRY 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. Chapter :6 LINES AND ANGLES 1. (Motivate) If a ray stands on a line, then the sum of the two adjacent angles so formed is 180^{o} 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.	By the end of this chapter students will be able to know • About axioms and postulates. • Difference between axioms and postulates. • Different terms related to basic geometry. By the end of this chapter students will be able to know • About different types of angles. • Complementary and supplementary angles. • Set of angles formed when parallel lines are intersected by any transversal.	To verify experimentally that if two lines intersect each other then (i) the vertically opposite angles are equal. (ii) the sum of two adjacent angles is 180^{0}. (iii) the sum of all the four angles is 360^{0}. To show the sum of angles of a triangle is 180^{0} by paper cutting.	8 13	

August	Chapter 7: TRIANGLES Concept of congruence Congruence in triangles Condition of congruence in triangles (Motivate) (SAS Congruence). (Prove) (ASA Congruence). (Motivate) (SSS Congruence). (Motivate) (RHS Congruence). (Prove) The angles opposite to equal sides of a triangle are equal. (Motivate) The sides opposite to equal angles of a triangle are equal	By the end of this chapter students will be able to know • About triangle and its parts. • Congruent and similar figures. • About different congruent conditions	To verify experimentally the different criteria of congruency of triangles using triangle cut outs.	20	
September	REVISION				TERM - 1 Portion Ch.1. Number Systems Ch. 2. Polynomials Ch.3. Co-ordinate geometry Ch. 4. Linear equations in two variables Ch.5.Introduction to Euclid's Geometry Ch.6.Lines and angles Ch.7. Triangles

Month	Course Description	Learning Outcome	Activity	No. of Periods	Portion for PT & TERM Assessment
October	Chapter: 8 QUADRILATERALS Definition, parts and types of quadrilaterals. (Prove) The diagonal divides a parallelogram into two congruent triangles. (Motivate) In a parallelogram opposite sides are equal, and conversely. (Motivate) In a parallelogram opposite angles are equal, and conversely. (Motivate) A quadrilateral is a parallelogram if a pair of its opposite sides is	By the end of this chapter students will be able to know • About different parts of quadrilaterals. • Types of quadrilaterals. • How to find any unknown angle of any quadrilateral.	To verify angles sum property of a quadrilateral by paper cutting.	15	PT - 2 Portion Ch. 8. Quadrilaterals Ch.9. Circles Ch.10. Heron's Formula

	parallel and equal. (Motivate) In a parallelogram, the diagonals bisect each other and conversely. Mid- point theorem and its converse.				

Month	Course Description	Learning Outcome	Activity	No. of Periods	Portion for PT & TERM Assessment
November	Chapter 9: CIRCLES Definition and different terms of circle. (Prove) Equal chords of a circle subtend equal angles at the center and (motivate) its converse. (Motivate) The perpendicular from the center of a circle to a chord bisects the chord and conversely, the line drawn through the center of a circle to bisect a chord is perpendicular to the chord. (Motivate) Equal chords of a circle (or of congruent circles) are equidistant from the center (or their respective centers) and conversely.	By the end of this chapter students will be able to know • About different parts of circle. • Difference among tangent, secant and chord. • About the important proofs related to sector, chord, tangent etc.	To verify that the angle subtended by an arc of a circle at the centre is double the angle subtended by any point on the remaining part of circle.	16	

	(Prove) The angle subtended by an arc at the center is double the angle subtended by it at any point on the remaining part of the circle. (Motivate) Angles in the same segment of a circle are equal. (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. (Motivate) The sum of either of the pair of the opposite angles of a cyclic quadrilateral is 180° and its converse				
	Chapter 11 : HERON'S FORMULA Area of a triangle using Heron's formula (without proof)	By the end of this chapter students will be able to know • How to use Heron Formula to find area of a triangle. • Using Heron Formula to find area in day to day life problem.	Class activity related to umbrella question.	4	

December	Chapter 12: SURFACE AREAS AND VOLUMES Surface areas and volumes of spheres (including hemispheres) and right circular cones.	By the end of this chapter students will be able to know • About common solids. • How to find surface area of a cone and sphere. • How to find volume of a cone and sphere.	To verify the relationship among the volumes of a right circular cone and a hemisphere of equal radii and equal heights.	16	
	Chapter 13: STATISTICS Bar graphs, histograms (with varying base lengths), and frequency polygons.	By the end of this chapter students will be able to know • About data and its significance of representation. • How to draw bar graph, histogram and frequency polygon.	To draw a histogram for classes of equal widths and varying widths.	8	
Month	Course Description	Learning Outcome	Activity	No. of Periods	Portion for PT & TERM Assessment
January + February	Revision			4	TERM - 2 Portion Entire syllabus


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