



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	<p>Chapter : 1</p> <p>Number Systems</p> <p>Review of representation of natural numbers, integers, and rational numbers on the number line.</p> <p>Rational numbers as recurring/terminating decimals. Operations on real numbers. Examples of non-recurring/non-terminating decimals.</p> <p>Existence of non-rational numbers (irrational numbers) such as $\sqrt{2}$ and $\sqrt{3}$ their representation on the number line.</p> <p>Definition of nth root of a real number.</p> <p>Rationalization</p> <p>Recall of laws of exponents with integral powers. Rational exponents with positive real bases</p>	<p>By the end of this chapter students will be able to understand</p> <ul style="list-style-type: none">• Difference between rational and irrationals.• Representations of real numbers on real line.• How to rationalize.	<p>To construct a square root spiral.</p>	14	<p>PT- 1 Portion</p> <p>Ch.1. Number Systems</p> <p>Ch. 2. Polynomials</p> <p>Ch.3. CO-ORDINATE GEOMETRY</p> <p>Ch. 4. LINEAR EQUATIONS IN TWO VARIABLES</p>

	<p>Chapter 2:</p> <p>POLYNOMIALS</p> <p>Definition of and types of a polynomials .</p> <p>Coefficients, degree, value, factors and multiples , zeros of a polynomials.</p> <p>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.</p> <p>Recall of algebraic expressions and identities. Verification of identities:</p> <p>$(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$</p> <p>$(x \pm y)^3 = x^3 \pm y^3 \pm 3xy(x \pm y)$ $(x^3 \pm y^3) = (x \pm y)(x^2 + y^2 \mp xy) \pm 3xy(x \pm y)$ $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$ and their use in factorization of polynomial</p> <p>*some topics will be carried forward to next month</p>	<p>By the end of this chapter students will be able to</p> <ul style="list-style-type: none"> • Identify any polynomial • Find the degree of a polynomial. • Find the remainder of any polynomial 	<p>To verify the algebraic identity $(x + y)^2 = x^2 + 2xy + y^2$</p>	<p>15</p>	
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May	<p>Chapter 3:</p> <p>COORDINATE GEOMETRY</p> <p>The Cartesian plane, coordinates of a point, names and terms associated with the coordinate plane, notations.</p>	<p>By the end of this chapter students will be able to</p> <ul style="list-style-type: none"> • 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	<p>Chapter 4:</p> <p>LINEAR EQUATIONS IN TWO VARIABLES</p> <p>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.</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> • 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	<p>Chapter 5:</p> <p>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.</p> <p>The five postulates of Euclid. Showing the relationship between axiom and theorem.</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> About axioms and postulates. Difference between axioms and postulates. Different terms related to basic geometry. 	<p>To verify experimentally that if two lines intersect each other then</p> <p>(i) the vertically opposite angles are equal.</p> <p>(ii) the sum of two adjacent angles is 180°.</p> <p>(iii) the sum of all the four angles is 360°.</p>	8	
	<p>Chapter :6</p> <p>LINES AND ANGLES</p> <p>1. (Motivate) If a ray stands on a line, then the sum of the two adjacent angles so formed is 180° and the converse.</p> <p>2. (Prove) If two lines intersect, vertically opposite angles are equal.</p> <p>3. (Motivate) Lines which are parallel to a given line are parallel.</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> About different types of angles. Complementary and supplementary angles. Set of angles formed when parallel lines are intersected by any transversal. 	<p>To show the sum of angles of a triangle is 180° by paper cutting.</p>	13	

August	<p>Chapter 7: TRIANGLES</p> <p>Concept of congruence</p> <p>Congruence in triangles</p> <p>Condition of congruence in triangles</p> <p>(Motivate) (SAS Congruence).</p> <p>(Prove) (ASA Congruence).</p> <p>(Motivate) (SSS Congruence).</p> <p>(Motivate) (RHS Congruence).</p> <p>(Prove) The angles opposite to equal sides of a triangle are equal.</p> <p>(Motivate) The sides opposite to equal angles of a triangle are equal</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> • About triangle and its parts. • Congruent and similar figures. • About different congruent conditions 	<p>To verify experimentally the different criteria of congruency of triangles using triangle cut outs.</p>	20	
September	REVISION				<p>TERM - 1 Portion</p> <p>Ch.1. Number Systems</p> <p>Ch. 2. Polynomials</p> <p>Ch.3. Co-ordinate geometry</p> <p>Ch. 4. Linear equations in two variables</p> <p>Ch.5.Introduction to Euclid's Geometry</p> <p>Ch.6.Lines and angles</p> <p>Ch.7. Triangles</p>

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October	<p>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 parallel and equal. (Motivate) In a parallelogram, the diagonals bisect each other and conversely. Mid- point theorem and its converse.</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> • About different parts of quadrilaterals. • Types of quadrilaterals. • How to find any unknown angle of any quadrilateral. 	<p>To verify angles sum property of a quadrilateral by paper cutting.</p>	15	<p>PT - 2 Portion Ch. 8. Quadrilaterals Ch.9. Circles Ch.10. Heron's Formula</p>

Month	Course Description	Learning Outcome	Activity	No. of Periods	Portion for PT & TERM Assessment
November	<p>Chapter 9: CIRCLES</p> <p>Definition and different terms of circle.</p> <p>(Prove) Equal chords of a circle subtend equal angles at the center and (motivate) its converse.</p> <p>(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.</p> <p>(Motivate) Equal chords of a circle (or of congruent circles) are equidistant from the center (or their respective centers) and conversely.</p> <p>(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.</p> <p>(Motivate) Angles in the same segment of a circle are equal.</p> <p>(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</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> • About different parts of circle. • Difference among tangent, secant and chord. • About the important proofs related to sector, chord, tangent etc. 	<p>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.</p>	16	

	<p>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</p>				
	<p>Chapter 11 : HERON'S FORMULA Area of a triangle using Heron's formula (without proof)</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> • How to use Heron Formula to find area of a triangle. • Using Heron Formula to find area in day to day life problem. 	<p>Class activity related to umbrella question.</p>	4	
December	<p>Chapter 12: SURFACE AREAS AND VOLUMES Surface areas and volumes of spheres (including hemispheres) and right circular cones.</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> • About common solids. • How to find surface area of a cone and sphere. • How to find volume of a cone and sphere. 	<p>To verify the relationship among the volumes of a right circular cone and a hemisphere of equal radii and equal heights.</p>	16	
	<p>Chapter 13: STATISTICS Bar graphs, histograms (with varying base lengths), and frequency polygons.</p>	<p>By the end of this chapter students will be able to know</p> <ul style="list-style-type: none"> • About data and its significance of representation. • How to draw bar graph, histogram and frequency polygon. 	<p>To draw a histogram for classes of equal widths and varying widths.</p>	8	

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January + February	Revision			4	TERM - 2 Portion Entire syllabus