

Subject : MATHEMATICS  
 Grade : IX  
 Year : 2018-19

**YEAR PLANNER**

**Text book used: NCERT Mathematics text book**

MONTH& NO. OF WORKING DAYS	UNIT	SUB- UNITS	OBJECTIVES	ACTIVITIES PLANNED	ASSESSMENT / RECAP
March/ April (19)	<b>Ch 1 : Number System</b>	<ul style="list-style-type: none"> <li>● Rational numbers &amp; Irrational numbers,</li> <li>● Real Numbers.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To represent rational numbers and irrational numbers on the number line .To verify the operations on irrational numbers .Use laws of exponents on Real numbers.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To construct a square root spiral.</li> </ul>	Worksheet-1 <b>Slip Test-1</b>
June (20)	<b>Ch 2 : Polynomials</b> <b>Ch 5 : Introduction to Euclid's Geometry</b>	<ul style="list-style-type: none"> <li>● Polynomials in one variable, zero of a polynomial, Remainder theorem , Factor theorem, Algebraic Identities</li> <li>● Euclid's definitions, Axioms &amp; Postulates.</li> <li>● Equivalent version of Euclid's fifth postulate.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To find factors and zeros of a polynomial using remainder and factor theorem. Use algebraic identities to factorise a polynomial.</li> <li>✓ To know the facts on points, lines &amp; surface.</li> <li>✓ To know the postulates on parallel lines.</li> <li>✓ To understand "Play fair Axiom".</li> </ul>	<ul style="list-style-type: none"> <li>✓ To verify the identity:  <math>(a + b)^3 = a^3 + b^3 + 3ab^2 + 3a^2b</math></li> <li>✓ To prove that an equilateral triangle can be constructed on any line segment.</li> </ul>	Worksheet-2 Worksheet-3  <b>Slip Test-2</b>
	<b>Ch6 : Lines and Angles.</b>	<ul style="list-style-type: none"> <li>● Basic terms &amp; definitions. Intersecting Lines &amp; non-intersecting Lines. Pair of angles made by parallel lines &amp; transversal, Angle Sum property.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To know the types of angles.</li> <li>✓ To know the properties of parallel lines.</li> <li>✓ To verify the sum of interior angles of a triangle.</li> <li>✓ To know exterior angle is greater than either of its interior angles.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To verify equality of alternate and corresponding angles in case of parallel lines.</li> </ul>	

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July (24)	<b>Ch 3: Co-ordinate Geometry</b>  <b>Ch 12: Heron's Formula</b>  <b>Ch 7 Triangles</b>	<ul style="list-style-type: none"> <li>• Cartesian System, Plotting a Point in the cartesian plane if its co-ordinates are given.</li> <li>• Area of triangle by Heron's Formula. Application of Heron's formula in finding areas of quadrilaterals.</li> <li>• Criteria for Congruence of Triangles, Properties of Triangles, Inequalities in a Triangle.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To plot the points in the Cartesian plane.</li> <li>✓</li> <li>✓ Apply Heron's Formula efficiently.</li> <li>✓ To apply the congruence rules: SSS, SAS, ASA and RHS to prove the given triangles are congruent .</li> <li>✓ To understand the inequality property of a <i>triangle</i>.</li> </ul>	Plotting coordinate points on a graph sheet        ➤ Checking if two triangles are congruent or not.	Worksheet-4 Worksheet-5  <b>Slip Test-3</b>  Revision Worksheet-1  <b>PT-1</b>
Aug (21)	<b>Ch 4 Linear Equations in Two variables.</b>	<ul style="list-style-type: none"> <li>• Solution of a Linear Equation, Graphing a linear Equation in two Variables'. Equations of lines parallel to the x-axis and y-axis.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To graph the linear equation.</li> <li>✓ To identify equation of line parallel to x- axis and y- axis.</li> </ul>		Worksheet-6 Worksheet-7  <b>Slip Test-4</b>
	<b>Ch 8 Quadrilaterals</b>	<ul style="list-style-type: none"> <li>• Types of quadrilateral and angle sum property of a quadrilateral.</li> <li>• Properties of parallelogram – state and prove.</li> <li>• Mid- Point Theorem.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To observe the types of quadrilaterals.</li> <li>✓ To identify the properties of parallelograms and prove it.</li> <li>✓ To identify another condition for a quadrilateral to be a Parallelogram.</li> <li>✓ To state and prove the Mid-point Theorem.</li> </ul>	➤ To show that the figure obtained by joining the mid points of the consecutive sides of a quadrilateral is a parallelogram.	Revision Worksheet-2

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September(06)	Revision		--	-----	Half-Yearly Exam/ PT-2
October (14)	Ch 10 Circles	<ul style="list-style-type: none"> <li>● Circles and its related terms.</li> <li>● Angle subtended by a chord at a point.</li> <li>● Perpendicular from the centre to the chord.</li> <li>● Angles subtended by an arc of a circle.</li> <li>● Cyclic Quadrilateral.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To verify equal chords of a circle subtend equal angles at the centre.</li> <li>✓ To prove perpendicular from the centre bisects the chord.</li> <li>✓ To understand one and only one circle can be drawn through three given points.</li> <li>✓ To verify the relation between equal chords and their distance.</li> <li>✓ To verify facts on cyclic quadrilaterals.</li> </ul>		Worksheet -8 Worksheet-9  <b>Slip Test-5</b>
	Ch 11 Constructions	<ul style="list-style-type: none"> <li>● Basic constructions</li> <li>● Some constructions of Triangles.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To bisect a given angle and draw perpendicular bisector of a given line.</li> <li>✓ To construct a triangle when base length, base angle, and sum or difference of other two sides is given. Also when perimeter is given.</li> </ul>	➤ To construct a triangle in which two base angles are given and perimeter is given.	
Nov (19)	Ch 9 Areas of Parallelograms and triangles.	<ul style="list-style-type: none"> <li>● Figures on the same base and between the same parallels</li> </ul>	<ul style="list-style-type: none"> <li>✓ To prove Parallelograms on the same base and between the same parallels are equal in area.</li> </ul>		Worksheet-10 Worksheet-11  <b>Slip Test-6</b>

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		<ul style="list-style-type: none"> <li>• Parallelograms on the same base and between the same parallels.</li> <li>• Triangles on the same base and between the same parallels.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To verify the Triangles on the same base and between the same parallels are equal in area.</li> <li>✓ To prove median of a Triangle divides it into two triangles of equal area.</li> </ul>		
	<b>Ch 13 Surface area and Volume.</b>	<ul style="list-style-type: none"> <li>• Surface Area of a cuboid, cube , right circular cylinder. Right circular cone and sphere.</li> <li>• Volume of a Cuboid, Cylinder, Right circular cone, Sphere and hemisphere.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To calculate the surface area of cuboid, cube, cylinder, cone and sphere using the formulas efficiently.</li> <li>✓ To find the volume of the given solid shape.</li> </ul>	➤ To compare the volume of a cone with that of a cylinder.	Revision Worksheet-3  <b>PT-3</b>
Dec (22)	<b>Contd..... of Ch. 13 Surface Area and Volume</b>  <b>Ch 14 Statistics</b>	<ul style="list-style-type: none"> <li>• Collection and Presentation of data.</li> <li>• Graphical Representation of data.</li> <li>• Measures of Central tendency.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To represent data in the form a frequency table.</li> <li>✓ To represent data graphically as bar graph, Histogram and Frequency Polygon.</li> </ul> <p>To calculate Mean, Median and mode for the given data</p>	Collect the marks of subject Maths & calculate the Mean & Mode. Also represent graphically	Worksheet-12 Worksheet-13
Jan (19)	<b>Ch15 Probability</b>	<ul style="list-style-type: none"> <li>• Probability – an experimental approach.</li> </ul>	<ul style="list-style-type: none"> <li>✓ To identify and calculate the probability in different events</li> </ul>	Create your own practical problem and predict it probability.	Worksheet-14 Worksheet-15  Revision Worksheet-4
Feb (22)		REVISION			<b>ANNUAL</b>