

**HANSRAJ MODEL SCHOOL**  
**PUNJABI BAGH, NEW DELHI**  
**CURRICULUM PLAN**  
**SESSION: 2024-25**  
**CLASS: VII**  
**SUBJECT: MATHEMATICS**

MONTH	TOPIC / SUB-TOPICS	LEARNING INTENTIONS (Learning Outcomes + Competencies)	ACTIVITIES / ASSIGNMENTS	ASSIGNMENTS
April	<p><b>Chapter 1</b> <b>(Rational Numbers)</b></p> <ul style="list-style-type: none"> <li>*Introduction</li> <li>*Properties of fractions</li> <li>*Positive rational numbers</li> <li>*Negative rational numbers</li> <li>*Properties of rational numbers including equivalent forms of a given rational number</li> <li>*Standard form of a rational number</li> <li>*Problems based on finding the unknown values to make two or</li> </ul>	<p>The learners:</p> <ul style="list-style-type: none"> <li>*Recall various types of numbers viz. natural numbers, whole numbers, fractions, integers</li> <li>*Define a rational number</li> <li>*Appreciate that all rational numbers are not fractions</li> <li>*Identify which rational numbers are fractions</li> <li>*Write Rational Number in the standard form</li> <li>*Find equivalent rational numbers</li> <li>*Find absolute value of a rational number</li> <li>*Represent rational number on a number line</li> </ul>	<ul style="list-style-type: none"> <li>❖ Ice – Breaking activity ‘MATH ABOUT ME’</li> <li>❖ Finding equivalent rational numbers using coloured strips of same size by folding</li> </ul>	<p><b>A-1 Pg 6, 9, 10</b></p> <p>WS-2 Q.1 (i), Q.3 (i, ii), Q.4</p> <p>WS-3 Q.1 (i, ii), Q.2 (i)</p> <p>WS-4 Q.3</p> <p><b>A-2 Pg 11, 12, 15</b></p> <p>WS-5 Q.2 (i, ii), Q.3 (i, ii)</p> <p>WS-6 Q.1 (i, ii), Q.2 (i, ii), Q.3 (i, ii)</p>

	<p>three rational numbers equivalent</p> <p>*Absolute value of a rational number</p> <p>*Comparing absolute values of rational numbers in pairs</p> <p>*Representation of rational numbers on a number line</p> <p>Comparing two rational numbers</p> <p>*Arranging rational numbers in ascending order and descending order</p>	<p>*Compare rational numbers by making same denominator</p> <p>*Compare rational numbers through number line</p> <p>*Compare rational numbers through cross multiplication method</p> <p>*Solve Brain Teasers questions</p> <p>*Develop creative thinking and problem solving skills</p>		
April	<p><b>Chapter 2</b> <b>(Operations On Rational Numbers)</b></p> <p>*Addition of rational numbers</p>	<p>The learners:</p> <p>*Apply operations on two or more rational numbers</p> <p>*Relate and verify the properties (closure, associativity, existence of identity, commutative) of rational</p>	<p>❖ Frayer's Model</p> <p>❖ Addition of rational numbers with</p>	<p><b>A-3 Pg 25, 26, 30, 31</b></p> <p>WS-1 Q.1 (i, ii), Q.3 (i), Q.4 (i), Q.5 (i)</p> <p>WS-2 Q.1 (i, ii), Q.3, Q.6 (i)</p>

	<p><b>*Properties of addition of rational numbers</b></p> <p><b>*Subtraction of rational numbers</b></p> <p><b>*Properties of subtraction of rational numbers</b></p>	<p>numbers under algebraic operations (+, -)</p> <p><b>*Solve problems based on rational numbers</b></p>	<p>same/different denominators using grid</p>	
May	<p><b>Chapter 2 (Operations On Rational Numbers)_Contd.</b></p> <p><b>*Multiplication of rational numbers</b></p> <p><b>*Properties of multiplication of rational numbers</b></p> <p><b>*Reciprocal of a rational number</b></p> <p><b>*Division of rational numbers</b></p> <p><b>*Properties of division of rational numbers</b></p> <p><b>*Finding rational numbers between two rational numbers</b></p>	<p>The learners:</p> <p><b>*Relate and verify the properties (closure, associativity, existence of identity, existence of inverse, commutative and distribution) of rational numbers under all algebraic operations (X, ÷)</b></p> <p><b>*Solve problems based on rational numbers</b></p> <p><b>*Find the reciprocal of a rational number</b></p> <p><b>*Find rational numbers between two given rational numbers</b></p> <p><b>*Solve Brain Teasers questions</b></p> <p><b>*Apply the knowledge and exhibit their creativity</b></p>	<p>❖ Jigsaw Puzzle (matching problem with correct answer)</p>	<p><b>A-4 Pg-35, 36, 38</b></p> <p>WS-3 Q.1 (i, ii), Q.2 (i), Q.3 (i), Q.7 (i, ii)</p> <p>WS-4 Q.1,2</p> <p><b>A-5 Pg 44, 45, 46</b></p> <p>WS-5 Q.1 (i, ii), Q.2</p> <p>WS-6 Q.2 (i, ii), Q.3 (i, ii), Q.4 (i)</p>
May	<p><b>Chapter 14 (Visualising Solids)</b></p>	<p>The learners:</p> <p><b>*Visualise solid shapes</b></p>		<p>Activity based</p>

	<p><b>*Introduction</b>  <b>*Faces , edges and vertices of solid (cube , cuboid , pyramids)</b>  <b>*Nets for 3D shapes</b></p>	<p><b>*Draw a solid on a sheet of paper</b>  <b>*Unfold a solid shape on a sheet of paper in the form of a net</b>  <b>*Obtain a solid from a net by paper folding</b>  <b>*Solve Brain Teasers questions</b>  <b>*Develop creative thinking skills</b></p>	<ul style="list-style-type: none"> <li>❖ <b>Making pull-up nets of solids</b></li> <li>❖ <b>Draw net of any solid and fold it to make a 3-D model of it. Colour congruent faces with same colour and draw happy emoji on its all faces</b></li> </ul>	
<b>May</b>	<p><b>Chapter 3</b>  <b>(Rational Numbers As Decimals)</b></p> <p><b>*Conversion of rational numbers into decimals without division</b>  <b>*Conversion of rational numbers into decimals by long division</b>  <b>*Conversion of terminating decimals into rational numbers</b></p>	<p><b>The learners:</b></p> <p><b>*Understand the concept of conversion of rational number into decimal number</b>  <b>*Differentiate between Terminating &amp; Non-Terminating decimals</b>  <b>*Classify Terminating &amp; Non-Terminating decimals with the help of long division method &amp; without actual division method</b>  <b>*Solve Brain Teasers questions</b>  <b>*Develop critical thinking and problem solving skills</b></p>	<ul style="list-style-type: none"> <li>❖ <b>Expressing a number in different forms (Natural numbers, whole numbers, integers, rational numbers, decimal numbers, terminating and non-terminating)</b></li> <li>❖ <b>Tic-Tac-Toe</b></li> </ul>	<p><b>A-6 Pg 52, 57</b>  <b>WS-1 Q.1 (i, iv, vii, x)</b>  <b>WS-2 Q.1 (i, ii, iv), Q.2 (i, ii, iii), Q.3 (i)</b></p> <p><b>A-7 Pg 61</b>  <b>WS-3 Q.1 (i, ii), Q.2 (i, ii), Q.3 (i, ii), Q.4 (i, ii), Q.5 (i, ii)</b></p>
<b>July</b>	<p><b>Chapter 12</b>  <b>(Data Handling)</b></p> <p><b>*Mean</b>  <b>*Median</b>  <b>*Mode</b></p>	<p><b>The learners:</b></p> <p><b>*Define data, range, arithmetic mean, median , mode</b>  <b>*Organise the raw data</b>  <b>*Differentiate between data and raw data</b></p>	<ul style="list-style-type: none"> <li>❖ <b>To find range, mean, median and mode of data using playing cards</b></li> </ul>	<p><b>A-8 Pg 229, 230, 232, 237, 238</b>  <b>WS-1 Q.1, 2, 7</b>  <b>WS-2 Q.1, 2</b>  <b>WS-4 Q.1, 5</b></p>

	<p><b>*Reading and Drawing of bar graph and double bar graph</b></p>	<p><b>*Recall and recite the formulae of range, arithmetic mean and median</b>  <b>*Find the range, arithmetic mean, median and mode of the given data/ observations</b>  <b>*Differentiate among the three measures of central tendency</b>  <b>*Handle with data</b>  <b>*Make data meaningful for further analysis</b>  <b>*Make interpretations from data analysis</b>  <b>*Solve Brain Teasers questions</b>  <b>*Analyse information, Organisational skills</b></p>	<p>❖ <b>Create bar graph/double bar graph using squared sheet paper</b></p>	
<p><b>July</b></p>	<p><b>Chapter 8 (Triangle And Its Properties)</b></p> <p><b>*Isosceles triangle and its properties</b>  <b>*Exterior angles of a triangle</b>  <b>*Relation between exterior angle and interior opposite angles</b>  <b>*Angle sum property of a triangle</b>  <b>*Triangle Inequality Property</b>  <b>*Pythagoras Theorem</b>  <b>*Medians and centroid of triangle</b></p>	<p><b>The learners:</b></p> <p><b>*Understand the properties of an isosceles triangle</b>  <b>*Learn exterior angles of a triangle and Exterior Angle Property</b>  <b>*Learn Triangle Inequality Property</b>  <b>*Appreciate Pythagoras Theorem</b>  <b>*Differentiate amongst Centroid, Orthocentre, Circumcentre and Incentre of a Triangle</b>  <b>*Solve Brain Teasers questions</b>  <b>*Develop creative thinking skills</b></p>	<p>❖ <b>Verification of Angle Sum property of a triangle by paper cutting and pasting</b>  ❖ <b>Verification of Exterior Angle Property</b>  ❖ <b>Verification of Pythagoras Theorem using squared sheet of paper</b>  ❖ <b>To locate the centroid of a triangle by paper folding</b></p>	<p><b>A-9 Pg 143, 146</b>  <b>WS-1 Q.2, 4</b>  <b>WS-2 Q.2, 3, 8</b></p> <p><b>A-10 Pg 148, 152</b>  <b>WS-3 Q.1 (i, iii)</b>  <b>WS-4 Q.1, 7, 9</b></p>

	<p>*Altitudes and orthocentre of a triangle</p> <p>*Perpendicular bisectors of a triangle and its circumcentre</p> <p>*Angle bisectors of a triangle and its incentre</p>			
August	<p><b>Chapter 4</b> <b>(Exponents And Powers)</b></p> <p>*Exponents of rational numbers</p> <p>*Reciprocals with positive integral exponents</p> <p>*Laws of exponents (Law I to VII)</p> <p>*Use of exponents in expressing large and small numbers</p>	<p>The learners:</p> <p>*Recall the exponents</p> <p>*Understand and use the law of exponents</p> <p>*Simplify expressions that have positive, negative, or zero exponents with variable or numeric bases</p> <p>*Express small and large numbers in STANDARD FORM</p> <p>*Solve Brain Teasers questions</p> <p>*Promote creative artistic and curiosity skills</p>	<ul style="list-style-type: none"> <li>❖ Foldables/to write laws of exponents in a creative manner</li> <li>❖ Completing Power table</li> <li>❖ Worksheet (Introduction to laws of Exponents)</li> </ul>	<p><b>A-11 Pg 68, 72</b> WS-1 Q.3 (i, ii), Q.4 (i, ii) WS-3 Q.3 (i, ii), Q.4 (i, ii), Q.5 (i, iii)</p> <p><b>A-12 Pg 75, 76, 80, 81</b> WS-4 Q.2 (i, ii, iii), Q.3 (i), Q.4 WS-5 Q.1 (iii, iv), Q.6 (i, ii), Q.11 (i, ii, iii)</p> <p><b>A-13 Pg 83, 85, 86</b> WS-6 Q.1 (i, ii, iii) WS-7 Q.1 (i to iv), Q.2 (i, ii), Q.4</p>
August	<p><b>Chapter 7</b> <b>(Linear Equations In One Variable)</b></p> <p>*Introduction</p> <p>*Solution of linear equations in one variable</p> <p>*Word problems based on application of linear equations</p>	<p>The learners:</p> <p>*Understand the configuration of linear equation</p> <p>*What a linear equation is ?</p> <p>*Know if a value is a solution or not ?</p> <p>*Use addition, subtraction, multiplication and division</p>	<ul style="list-style-type: none"> <li>❖ Maze</li> </ul>	<p><b>A-14 Pg 132, 133</b> WS-1 Q.1 to 7</p> <p><b>A-15 Pg 136, 137</b> WS-2 Q.1, 3, 6, 14, 16</p>

		<p>properties of equalities to solve linear equations</p> <ul style="list-style-type: none"> <li>*Know when equation has no solution</li> <li>*Know when an equation has all real numbers as a solution</li> <li>*How to solve a linear equation?</li> <li>*Solve Brain Teasers questions</li> <li>*Develop critical thinking and problem solving skills</li> </ul>		
<b>October</b>	<p><b>Chapter 5 (Application Of Percentage)</b></p> <ul style="list-style-type: none"> <li>*Simple applications of percentage</li> <li>*Profit and Loss</li> <li>*Profit % and Loss %</li> <li>*Simple Interest</li> </ul>	<p>The learners:</p> <ul style="list-style-type: none"> <li>*Understand percent as part of a hundred</li> <li>*Calculate simple percentage problems</li> <li>*Have basic understanding of profit and loss in a situation</li> <li>*Learn components of profit and loss in a situation</li> <li>*Get acknowledged with basic terms involved in a profit and loss statement like cost price, selling price, overhead expense, profit%, loss%</li> <li>*Learn about mechanism of profit generation</li> <li>*Appreciate the usage of mathematics in day to day situations</li> <li>*Define principal, interest, interest rate and time</li> </ul>	<p>❖ Mind Map</p>	<p><b>A-16 Pg 94, 95, 96</b>  <b>WS-1 Q. 1, 3, 5</b>  <b>WS-2 Q.1, 5</b></p> <p><b>AS-17 Pg 98, 100, 102</b>  <b>WS-3 Q.1, 2</b>  <b>WS-4 Q.2, 3</b>  <b>WS-5 Q.3</b></p>

		<p><b>*Describe the formula for finding simple interest</b></p> <p><b>*Apply the formula for finding simple interest</b></p> <p><b>*Recognize the importance of converting time from months to years before applying the formula for interest</b></p> <p><b>*Recognize that the unknown quantity is different for each problem depending on how it is worded</b></p> <p><b>*Analyze each problem to identify the given information</b></p> <p><b>*Formulate a strategy for solving each problem</b></p> <p><b>*Develop problem solving skills</b></p> <p><b>*Solve Brain Teasers questions</b></p> <p><b>*Enhance creative skills</b></p>		
<b>October</b>	<p><b>Chapter 9 (Congruent Triangles)</b></p> <p><b>*Introduction</b></p> <p><b>*SSS Congruence Condition</b></p> <p><b>*SAS Congruence Condition</b></p> <p><b>*ASA Congruence Condition</b></p> <p><b>*RHS Congruence Condition</b></p>	<p><b>The learners:</b></p> <p><b>*Understand the meaning and properties of triangles</b></p> <p><b>*Understand the meaning of congruence</b></p> <p><b>*Explain why four conditions such as <b>SSS, SAS, ASA, and RHS</b> are necessary for the congruency of two triangles</b></p> <p><b>*Use CPCT to symbolize “corresponding parts of congruent triangles are equal”</b></p>	<ul style="list-style-type: none"> <li>❖ To explore criteria for congruency of triangles using cut outs of triangles</li> <li>❖ Create a beautiful crown using congruent triangles</li> <li>❖ Mind Map</li> </ul>	<p><b>A-18 Pg 171, 175</b></p> <p>WS-1 Q.3, 4</p> <p>WS-2 Q.2, 3</p> <p><b>A-19 Pg 181, 184, 185</b></p> <p>WS-3 Q.3, 4</p> <p>WS-4 Q.1, 3</p>



		<p><b>*Solve Brain Teasers questions</b></p> <p><b>*Apply the knowledge and exhibit their creativity</b></p>		
<b>November</b>	<p><b>Chapter 10</b> <b>(Construction Of Triangles)</b></p> <p><b>*Construction of a triangle when</b>  <b># Three sides are given</b>  <b># Two sides and included angle are given</b>  <b># Two angles and included angle are given</b>  <b># One one right angle, hypotenuse and one side are given</b></p>	<p><b>The learners:</b></p> <p><b>*Construct different types of triangles according to given conditions</b></p> <p><b>*Solve Brain Teasers questions</b></p> <p><b>*Develop creativity and apply the concept</b></p>	<p>❖ <b>Explanation of construction of triangles using self made video</b></p>	<p><b>A-20 Pg 196, 197</b>  <b>WS-1 Q.1, 2, 3</b>  <b>WS-2 Q.2, 3</b></p> <p><b>A-21 Pg 198, 200</b>  <b>WS-3 Q.2, 3, 4</b>  <b>WS-4 Q.2, 3</b></p>
<b>November</b>	<p><b>Chapter 6</b> <b>(Algebraic Expressions)</b></p> <p><b>*Introduction</b>  <b>*Multiplication of monomials</b>  <b>*Multiplication of a monomial and a binomial</b>  <b>*Multiplication of binomials</b>  <b>*Multiplication of a binomial and a trinomial</b>  <b>*Factorization</b></p> <p><b>(continued in December)</b></p>	<p><b>The learners:</b></p> <p><b>*Recall the basic terms related to algebraic expressions For eg. constants, variables, terms, like &amp; unlike terms etc.</b></p> <p><b>*Multiply two or more monomials &amp; verify the product</b></p> <p><b>*Multiply a monomial with a binomial &amp; verify the product</b></p> <p><b>*Multiply two or more binomials &amp; verify the product</b></p> <p><b>*Multiply a binomial with a trinomial</b></p>	<p>❖ <b>Worksheet on completing multiplication table of monomials</b></p> <p>❖ <b>Enrichment Activity (Decode colour by solving algebraic expressions)</b></p> <p>❖ <b>Maze on finding HCF of Monomials</b></p>	<p><b>A-22 Pg 111, 115</b>  <b>WS-1 Q.1, 2, 3</b>  <b>WS-2 Q.1 (i, ii), Q.2 (i), Q.6 (i)</b></p> <p><b>A-23 Pg 117, 119, 122, 123, 124</b>  <b>WS-3 Q.1 (i, iv), Q.2 (i), Q.3 (i)</b>  <b>WS-4 Q.1 (i, ii), Q.2 (i)</b>  <b>AS-24</b>  <b>WS-5 Q.1 (ii, iii), Q.2 (i, ii), Q.3 (i, ii)</b>  <b>WS-6 Q.1, 5, 6</b></p>

		<p><b>*Evaluate / verify the products of the algebraic expressions at the given value of the variables</b></p> <p><b>*Find the HCF of given monomials</b></p> <p><b>*Factorise the algebraic expressions by finding out a common factor &amp; regrouping the terms</b></p> <p><b>*Solve Brain Teasers questions</b></p> <p><b>*Develop problem solving skills</b></p>		
<b>December</b>	<p><b>Chapter 13 (Symmetry)</b></p> <p><b>*Lines of symmetry of English alphabets, a Line, Line segment, Ray, Triangle, Regular Polygon</b></p>	<p><b>The learners:</b></p> <p><b>*Learn about Symmetry</b></p> <p><b>*Explore Line or Reflection Symmetry</b></p> <p><b>*Relate Symmetry with nature and surroundings</b></p> <p><b>*Solve Brain Teasers questions</b></p> <p><b>*Develop creative thinking skills and apply concept knowledge</b></p>	<p>❖ <b>Fractal cards</b></p>	<b>Activity Based</b>
<b>December</b>	<p><b>Chapter 11 (Perimeter And Area)</b></p> <p><b>*Introduction</b></p> <p><b>*Area of rectangular paths &amp; Paths Crossing each Other</b></p> <p><b>*Area of a parallelogram</b></p> <p><b>*Area of a triangle</b></p>	<p><b>The learners:</b></p> <p><b>*Apply the knowledge of area of rectangle and square in finding the area of path</b></p> <p><b>*Calculate the area of roads parallel to the sides of rectangle</b></p> <p><b>*Define parallelogram and rhombus</b></p> <p><b>*Derive the formula for area of parallelogram</b></p>	<p>❖ <b>Verification of area of a parallelogram by paper cutting and pasting</b></p> <p>❖ <b>Verification of area of a triangle by paper cutting and pasting</b></p> <p>❖ <b>Finding ratio of circumference and</b></p>	<p><b>A-25 Pg 206, 208</b></p> <p><b>WS-1 Q.2, 5</b></p> <p><b>WS-2 Q.1, 2</b></p> <p><b>A-26 Pg 211, 214, 215</b></p> <p><b>WS-3 Q.1, 3, 6</b></p> <p><b>WS-4 Q.1, 8, 9, 11</b></p>

		<p><b>*Drive the formula for area of triangle</b>  <b>*Apply the formula in various situations</b></p>	<p><b>diameter of three circles of different radii</b></p> <p><b>SDG: Finding area of margin by creating any SDF Logo on a rectangular sheet of any dimensions by leaving a margin of uniform width.</b></p>	
<b>January</b>	<p><b>Chapter 11 (Perimeter And Area)_Contd.</b></p> <p><b>*Circumference of a circle</b>  <b>*Area of a circle</b></p>	<p><b>The learners:</b></p> <p><b>*Develop the understanding of concept of circumference and area of a circle</b>  <b>*Derive formula for circumference and area of a circle</b>  <b>*Analyse the situation where to find area or circumference of circle</b>  <b>*Solve Brain Teasers questions</b>  <b>*Analyse and use conceptual knowledge, develop creative thinking skills</b></p>	<p><b>❖ Area Tree</b></p>	<p><b>A-27 Pg 217, 221, 222</b>  <b>WS-5 Q.1, 3, 9</b>  <b>WS-6 Q.1, 3, 11</b></p>