

**Class-VII**  
**Part - I**  
**Arithmetic**

Time	Topic/Theme	Subject Matter	Activities
<b>Unit - I</b> <b>Rational Numbers</b>			
25 hrs	Rational Numbers	<ul style="list-style-type: none"> <li>• Revision of Natural numbers, Whole numbers, Integers &amp; Properties of numbers</li> <li>• Definition of Rational number {both in p/q form and recurring &amp; terminating (decimal form)}</li> <li>• Concept of numerator</li> <li>• Concept of denominator</li> <li>• Proper, improper, mixed and equivalent fractions and lowest terms (Reduction)</li> <li>• Representation of rational number on number line</li> <li>• Multiplication</li> <li>• Order relation of rational numbers</li> <li>• To find rational numbers between any two given, rational numbers</li> <li>• Four fundamental operations</li> </ul>	<ul style="list-style-type: none"> <li>• Review of numbers with the help of number line.</li> <li>• Representation of Rational number on Number line.</li> <li>• Examples to be shown by the teacher on the black board to show that subtraction of rational numbers is not commutative.</li> </ul> $\frac{2}{5} - 7 \neq 7 - \frac{5}{2}$ $\frac{-9}{2} \neq \frac{9}{2}$

		<ul style="list-style-type: none"> <li>• Properties of number system (closure, commutative, associative, distributive, identity element, inverse element) of addition and multiplication of rational numbers</li> <li>• Reciprocal of rational number.</li> <li>• Example of an operation (subtraction) which is not commutative.</li> </ul>	
		<b>Unit – II</b> <b>Simplification of Complex Problems of Rational Numbers</b>	
10 hrs	Simplification of complex problems of Rational numbers.	<ul style="list-style-type: none"> <li>• Concepts of Brackets.</li> <li>• Concept of BODMAS.</li> <li>• Problems involving fraction, decimal and mixed based on BODMAS.</li> </ul> <p>B = Bracket [ ], { }, ( ), - ,  O = of  D = Division / ÷  M = Multiplication x  A = Addition +  S = Subtraction -</p>	By solving examples related to BODMAS on the black board.
		<b>Unit-III</b> <b>Direct &amp; Inverse Variation</b>	
15 hrs	Direct & Inverse variation	<ul style="list-style-type: none"> <li>• Review of Ratio and Proportion.</li> <li>• Concept of Direct &amp; Inverse variation through</li> </ul>	Examples to taken from daily life situation to explain the concept of direct

		<p>example from daily life situations.</p> <ul style="list-style-type: none"> <li>• Problems on Inverse variation “Time and Work” and “Time and Distance”.</li> </ul>	and inverse variations.
		<b>Unit-IV</b> <b>Percentage</b>	
12 hrs	Application of Percentage.	<ul style="list-style-type: none"> <li>• Review of percentage.</li> <li>• Concept of cost price, selling price profit &amp; loss.</li> <li>• Profit &amp; loss for single transaction only.</li> <li>• Simple Interest.</li> <li>• Problems to find out Principal, Rate and Time.</li> </ul>	<p>Profit = S.P.-CP  Lose = C.P. – S.P.  Profit % =  Profit/CPx100  Loss% =  Loss/CPx100  Simple interest =  PxRxT/100  Amount = P+SI</p>
		<b>Part-II</b> <b>Algebra</b> <b>Unit-V</b> <b>Algebraic Expressions</b>	
20 hrs	Algebraic Expressions	<ul style="list-style-type: none"> <li>• Review of Terms: Constant, variable, co-efficient terms (like &amp; unlike) monomial. Binomial, trinomial &amp; polynomial.</li> <li>• Addition &amp; subtraction of algebraic expressions.</li> <li>• Multiplication of Algebraic expressions Integral coefficients</li> </ul>	<ul style="list-style-type: none"> <li>• Concepts of multiplication should be introduced through area of rectangle &amp; square.</li> <li>• While multiplying algebraic expressions students must be made aware that</li> </ul>

		<p>(Monomials, binomials, Trinomials) and their verification by putting the values of variables.</p> <ul style="list-style-type: none"> <li>Algebraic Identities :  <math>(a+b)^2 = a^2 + 2ab + b^2</math>  <math>(a-b)^2 = a^2 - 2ab + b^2</math>  <math>(a+b)(a-b) = a^2 - b^2</math></li> <li>Problems on these basic identities.</li> </ul>	<p>we using formula.  <math>a^m \times a^n = a^{m+n}</math>  repeatedly.</p>
		<b>Unit-VI</b> <b>Factorization</b>	
15 hrs.	Factorization of Algebraic expressions	<ul style="list-style-type: none"> <li>Concept of factors.</li> <li>Factorization of monomials, Binomial &amp; Trinomial</li> <li>Factorization with the help of Algebraic Identities</li> <li><math>(a+b)^2</math>, <math>(a-b)^2</math> and <math>(a^2 - b^2)</math>.</li> </ul>	<p>By solving on black board examples like possible factors of</p> $3ab = (1)(3ab)$ $= (3)(ab)$ $= (a)(3b)$ $= (3)(a)(b)$
		<b>Unit-VII</b> <b>Lines Equations In One Variable</b>	
12 hrs	Lines Equations in one variable	<ul style="list-style-type: none"> <li>Review of variable &amp; Root of a Linear equation.</li> <li>Solution of Linear equation in one variable and its verification (Rational coefficients both in p/q and decimal</li> </ul>	<p>The sum of two numbers is 25. If one number is one – fourth of the other find the numbers?</p>

		form) • Problems of daily life.	
		<b>Part-III Geometry Unit-VIII Parallel Lines</b>	
08 hrs.	Parallel lines	<ul style="list-style-type: none"> <li>• Review of line ray, line segment, transversal &amp; parallel lines.</li> <li>• Intercept made by transversal on parallel lines.</li> <li>• “Proportional intercept” property of parallel lines.</li> <li>• Division of a line segment.</li> </ul>	
		<b>Unit-IX Quadrilateral</b>	
15 hrs.	Quadrilateral	<ul style="list-style-type: none"> <li>• Definition of quadrilateral.</li> <li>• Types of quadrilateral (square, rectangle, parallelogram, rhombus, trapezium, kite) with the help of figures.</li> <li>• Various parts of quadrilateral (adjacent sides, adjacent angles, diagonals, interior, exterior and boundary points of a Quadrilateral)</li> <li>• Problems based on sum</li> </ul>	<ul style="list-style-type: none"> <li>• The teacher can show the simplest form of quadrilateral by showing rectangle and square of card board &amp; then by deforming them.</li> <li>• Square <math>\subset</math> Rectangle <math>\subset</math> parallelogram <math>\subset</math> Quadrilateral.</li> <li>• Illustration by showing different</li> </ul>

		of the angles of a quadrilateral.	figures. <ul style="list-style-type: none"> <li>• Measure the angles of a card board quadrilateral and draw conclusion that their sum is <math>360^{\circ}</math></li> </ul>
		<b>Unit-X</b> <b>Circle</b>	
10 hrs	Circle	<ul style="list-style-type: none"> <li>• Review:- Center, Radius, Diameter, Circumference (Boundary), Chord &amp; Arc of a circle.</li> <li>• Concept of semicircle, Major segment Minor segment and sector of a circle.</li> <li>• Practical proof of "angle in a semicircle in <math>90^{\circ}</math>"</li> <li>• Angles subtended by a chord in the same segment are equal.</li> <li>• Angles subtended by a chord in the major segment are acute and angles subtended by a chord in the minor segment are obtuse</li> <li>• Problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Measure the angles in the semicircle and conclude that it is a right angle.</li> <li>• Divide a segment in two parts by a chord (major &amp; minor segment) and measure the angles made in major &amp; minor segment &amp; to draw conclusion that angles in major segment are acute and in the minor segment are obtuse.</li> </ul>

<b>Part-VI</b> <b>Unit-XI</b> <b>Mensuration</b>			
15 hrs	Menstruation	<ul style="list-style-type: none"> <li>• Review of area and perimeter of rectangle and square.</li> <li>• Area of rectangular path along the boundary (interior, exterior), cross path.</li> <li>• Concept of cube and cuboid and their surfaces</li> <li>• Surface area and volume of cube and cuboid and their units.</li> </ul>	<ul style="list-style-type: none"> <li>• By showing different cuboidal &amp; cubical objects in the class like card board box etc. for the concept of surface area &amp; volume.</li> </ul>
<b>Part-V</b> <b>Statistics</b> <b>Unit-XII</b> <b>Data Handling</b>			
15 hrs	Data handling	<ul style="list-style-type: none"> <li>• Review of Data, Tally mark, frequency</li> <li>• Organization of data</li> <li>• Collection and organization of Data</li> <li>• Choosing the data for hypothesis testing</li> <li>• Construction of Bar graph</li> <li>• Feel of probability using data through experiment</li> <li>• Notion of chance in events</li> </ul>	

		like losing of coins & dice etc..	
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