

**Term – wise Syllabus**  
**Session-2019-20**  
**Class-VIII**  
**Subject: Mathematics**

**TERM-I ( April 2019 to September 2019)**

Chapter Name	Content	Learning Outcomes	Suggested Activities
<b>Chapter-1</b> <b>Rational</b> <b>Numbers</b>	Introduction, Negative of a number, Representation of a rational numbers on the number line, Rational numbers between two rational numbers. <b>Note: As per SCERT guidelines - content not to be taught- section 1.2 and terminology Ex 1.1 (except 1.2.6 Negative of a number)</b>	The learner: <ul style="list-style-type: none"> <li>• generalises properties of addition, subtraction, multiplication and division of rational number through pattern.</li> <li>• Find out as many rational numbers as possible between two given rational numbers.</li> <li>• Represent rational number on number line.</li> </ul>	<ul style="list-style-type: none"> <li>• Concept using conversation of various types of numbers.</li> <li>• Shading/Colouring equal parts of various shapes.</li> <li>• Conversion of decimal number into the rational number using ruler.</li> </ul>
<b>Chapter-2</b> <b>Linear</b> <b>Equation in</b> <b>One Variable</b>	Introduction, Solving equations which have linear expressions on one side and numbers on the other side, Some applications, Solving equations having the variable on both sides, Some more applications, Reducing equations to simpler form, Equations reducible to linear form.	The learner: <ul style="list-style-type: none"> <li>• Solve problem based on linear equation in variable.</li> <li>• Solve puzzles and daily life problem using variables.</li> </ul>	<ul style="list-style-type: none"> <li>• Play with numbers game, Picture / card game.</li> <li>• Story: Crocodile Dada</li> </ul>
<b>Chapter-3</b> <b>Understanding</b> <b>Quadrilaterals</b>	Introduction, Polygons: Classification of polygons, Diagonals, Concave and Convex polygons, Regular and irregular polygons, Angle sum property, Sum of the measures of the exterior angles of a polygon, Kinds of quadrilaterals: Trapezium, Kite, Parallelogram, Elements of parallelogram, Angles of a parallelogram, Diagonals of parallelogram, Some special parallelograms: Rhombus, Rectangle, Square	The learner: <ul style="list-style-type: none"> <li>• Solves problems related to angles of quadrilateral using angle sum property.</li> <li>• Verifies properties of parallelogram and establishes the relationship between them through reasoning.</li> <li>• Generalizes properties of different types of quadrilateral.</li> </ul>	<ul style="list-style-type: none"> <li>• Diagonals of a polygon: Making, identification of vertices &amp; counting of Diagonals of a polygon with the help of students.</li> <li>• Making of circle &amp; Quadrilateral with the help of DOTs.</li> <li>• Paper cutting: Making Different type of Quadrilateral.</li> <li>• Game of KITEs: A Role Play/Story in Mathematics.</li> </ul>

<b>Chapter-4 Practical Geometry</b>	Introduction, Construction of quadrilaterals (i) When four sides and one diagonal given. (ii) When two diagonals and three sides are given. (iii) When two adjacent sides and three angles are given. (iv) When three sides and two included angles are given. (v) When other special properties are known.	The learner: <ul style="list-style-type: none"> <li>Construct different quadrilaterals using compasses and straight edge.</li> </ul>	<ul style="list-style-type: none"> <li>Mr. Robot (fill the colours in robot made up of different shapes).</li> <li>Head craft (Cutting and colouring different geometrical shapes and paste like head craft).</li> </ul>
<b>Chapter - 6 squares and square roots</b>	Introduction, Properties of square numbers, Some more interesting patterns, Finding the square of a number, Pythagorean triplets, Square roots through repeated subtraction, prime factorization and division method, Square roots of decimals, Estimating square roots	The learner: <ul style="list-style-type: none"> <li>Finds square and square roots of numbers using different methods.</li> <li>Uses square roots in solving problems of daily life.</li> </ul>	<ul style="list-style-type: none"> <li>To make square using straw and reshape the figure by shifting the straws - play with straws.</li> <li>Draw the square on a graph paper and count them /Tower Pattern.</li> <li>Square MAZE</li> </ul>
<b>Chapter-7 cubes and cube roots</b>	Introduction, Cubes and Cube roots	The learner: <ul style="list-style-type: none"> <li>Finds cube and cube roots of a number.</li> </ul>	<ul style="list-style-type: none"> <li>Finding Volume of different size RUBRIC CUBE.</li> <li>cube root MAZE</li> </ul>
<b>Chapter-8 Comparing Quantities</b>	Recalling ratios and percentages, Finding the increase or decrease percent, Finding discounts, Estimation in percentage, Prices related to buying and selling (profit and loss), Sales Tax/VAT/GST , Compound Interest, Deducing a formula for compound interest, Rate compounded annually or half yearly (semiannually), Applications of compound interest formula.	The learner: <ul style="list-style-type: none"> <li>Applies the concept of percent in profit and loss, situation in finding discount, GST and compound interest.</li> </ul>	<ul style="list-style-type: none"> <li>Role play</li> </ul>

**Mental Maths, Maths Lab Activities & YUVA sessions  
Revision of syllabus for Mid Term Exam**

**TERM-II (October 2019 to March 2020)**

Chapter Name	Content	Learning Outcomes	Suggested Activities
<p align="center"><b>Chapter-5 Data Handling</b></p>	<p>Looking for information, Organizing data, Circle graph or pie chart, Drawing pie charts <b>Note: As per SCERT guidelines - content not to be taught- section 5.3 and Exercise 5.1, section 5.5 and exercise 5.3</b></p>	<p>The learner:</p> <ul style="list-style-type: none"> <li>• Draw and interprets pie charts.</li> </ul>	<ul style="list-style-type: none"> <li>• Collect the data related to the birth month of each student of your class and write it in the space given below.</li> </ul>
<p align="center"><b>Chapter-9 Algebraic Expressions and Identities</b></p>	<p>What are expressions?, Terms, Factors, Coefficients, Monomials, Binomials and Polynomials, Like and Unlike terms, Addition and subtraction of algebraic expressions, Multiplication of algebraic expression: Introduction, Multiplying a monomial by a monomial, Multiplying a monomial by a polynomial, Multiplying a polynomial by a polynomial, What is an identity?, Standard identities, Applying identities</p>	<p>The learner:</p> <ul style="list-style-type: none"> <li>• Addition, subtraction and multiplication of algebraic expression.</li> <li>• Uses various algebraic identities in solving problem of daily life.</li> </ul>	<ul style="list-style-type: none"> <li>• Sorting and writing surrounding patterns.</li> <li>• Checking <math>(a + b)^2 = a^2 + 2ab + b^2</math> through paper cutting.</li> <li>• Checking <math>(a-b)^2 = a^2 - 2ab + b^2</math> through paper cutting.</li> <li>• Checking <math>(a + b)(a-b) = a^2 - b^2</math> through paper cutting.</li> </ul>
<p align="center"><b>Chapter-10 Visualizing Solid Shapes</b></p>	<p>Introduction, Views of 3D-shapes, Mapping space around us, Faces, Edges and Vertices.</p>	<p>The learner:</p> <ul style="list-style-type: none"> <li>• Represents 3D shapes on a plane surface such as sheet of paper, block board etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Find out vertices, faces and edges of different 3-D objects.</li> </ul>
<p align="center"><b>Chapter-11 Mensuration</b></p>	<p>Introduction, Let us recall, Area of trapezium, Area of a general quadrilateral, Area of a polygon. <b>Note: As per SCERT guidelines - content not to be taught (section 11.6 to 11.9 and exercise 11.3 and 11.4 )</b></p>	<p>The learner:</p> <ul style="list-style-type: none"> <li>• Estimates the area of shapes like trapezium and other polygon by using square grid/ graph sheet and verifies using formulas.</li> <li>• Finds the area and perimeter of polygon.</li> </ul>	<ul style="list-style-type: none"> <li>• An activity for establishing a relationship between circumference and diameter, representing their ratio as <math>\pi</math>.</li> <li>• Dividing a circular region into small sectors and arranging them in the form of rectangle and finding the area of circle.</li> </ul>
<p align="center"><b>Chapter-12 Exponents and Powers</b></p>	<p>Introduction, Powers with negative exponents, Laws of Exponents, Use of Exponents to express small Numbers in standard form, Comparing very large and very small numbers</p>	<p>The learner:</p> <ul style="list-style-type: none"> <li>• Solves problem with integral exponents.</li> <li>• Use the laws of exponent.</li> <li>• Express numbers in standard form.</li> </ul>	<ul style="list-style-type: none"> <li>• Game of reading and writing of numbers.</li> <li>• Recognition of changing in numbers through patterns.</li> </ul>

<b>Chapter-13 Direct and Inverse Proportions</b>	Introduction, Direct proportion, Inverse proportion.	The learner: <ul style="list-style-type: none"> <li>Solves problem based on direct and inverse proportion.</li> </ul>	<ul style="list-style-type: none"> <li>Details of Riyan's Birthday party</li> <li>Real life examples: Direct and Inverse Variation.</li> <li>Distinguish different situation of Direct and Inverse Variation by mean of colours.</li> </ul>
<b>Chapter-14 Factorization</b>	Introduction, What is factorization?, Method of common factors, Factorisation by regrouping terms, Factorisation using identities, Factors of the form $(x + a)(x + b)$ , Division of algebraic expression, Division of a monomial by another monomial, Division of a polynomial by a monomial, Division of a polynomial by a polynomial, Can you find the errors?	The learner: <ul style="list-style-type: none"> <li>Finds factors of algebraic expression.</li> <li>Division of algebraic expression.</li> <li>Find the errors in mathematical statement and correct it.</li> </ul>	<ul style="list-style-type: none"> <li>Role play</li> </ul>
<b>Chapter 15- Introduction to Graphs</b>	Introduction, Linear graphs, Some applications.	The learner: <ul style="list-style-type: none"> <li>Draws and interprets linear graph.</li> </ul>	<ul style="list-style-type: none"> <li>Finding exact location of flower painted on a table cloth.</li> <li>Identify the location of different seats in a theatre hall.</li> </ul>
<b>Chapter-16 Playing with Numbers</b>	Introduction, Numbers in general form, Games with Numbers, Test of Divisibility <b>Note: content not be taught- section 16.4 and exercise 16.1</b>	The learner: <ul style="list-style-type: none"> <li>Check divisibility rules of 2, 3, 4, 5, 6,8, 9 and 11</li> </ul>	<ul style="list-style-type: none"> <li>Games with numbers</li> </ul>

**Chapter-1 Rational numbers ( This content of Term I is to be repeated and evaluated in term II)**

Introduction, Negative of a number, Representation of a rational numbers on the number line, Rational numbers between two rational numbers.

**Note: As per SCERT guidelines - content not to be taught- section 1.2 and terminology Ex 1.1 (except 1.2.6 Negative of a number)**

**Chapter-4 Practical Geometry( This content of Term I is to be repeated and evaluated in term II)**

Introduction, Construction of quadrilaterals

- (i) When four sides and one diagonal given.
- (ii) When two diagonals and three sides are given.
- (iii) When two adjacent sides and three angles are given.
- (iv) When three sides and two included angles are given.
- (v) When other special properties are known.

**Chapter -6 Squares and Square roots ( This content of Term I is to be repeated and evaluated in term II)**

Introduction, Properties of square numbers, Some more interesting patterns, Finding the square of a number, Pythagorean triplets, Square roots through repeated subtraction, prime factorization and division method, Square roots of decimals, Estimating square roots

**Mental Maths, Maths Lab Activities & YUVA sessions  
Revision of Syllabus for Common Annual School Examination**

**Note:**

- **Complete the syllabus by January, 2020.**
- **The above said syllabus is for assessment purpose only and remaining topics may be taught as Subject Learning Enrichment.**