Subject : Math
Grade : VIII
Year : 2019-20

Year Planner **Text book used: NCERT Mathematics Textbook**

Month & No. of Teaching Days	**Units**	**Sub- Units**	**Objectives**	**Activities Planned**	**Assessment / Recap**
March/ April [15]	**TERM- I** **Ch 1** :Rational Numbers	• Properties of Rational numbers. • Representation of rational numbers on the number line. • Find rational numbers between any two rational Numbers.	✓ To verify all the properties: closure, commutative, associative and distributive property of rational numbers. ✓ To find rational numbers between two rational numbers.	➢ Lab Activity on rational numbers.	
June [16]	**Ch2:** Linear Equations in One variable. **Ch16** : Playing with Numbers	• Solving equations with numbers on both sides. • Solve problems on real life situations. • Solve equations with variables on both sides of equal to. • Numbers in General From. • Games with numbers. • Letters for digits. • Test of Divisibility of 3, 5, 9 and 11. •	✓ To explain the concept of balancing and relate it to solving equations. ✓ To solve real life application questions using linear equations. ✓ To identify the sum, difference or product and by trial method identify the missing digits. ✓ Use divisibility rules to choose the missing digit so that the number is divisible by 3,5,9 or 11	➢ Lab Activity on Playing with Numbers.	Worksheet-1 Worksheet-2 Slip Test - 1
July [24]	**Ch3:** Understanding Quadrilaterals.	• Classification of Polygons. • Sum of interior angles of polygon	✓ To identify and differentiate between regular and irregular polygons, Concave and Convex polygons and discuss their properties.	➢ To verify that the sum of the interior angles of a quadrilateral is	Slip Test - 2 Worksheets- 3 & 4 **P.T. 1 portion:**

Month & No. of Teaching Days	Units	Sub- Units	Objectives	Activities Planned	Assessment / Recap
	Ch 4 : Practical Geometry **Ch10:** Visualizing solid shapes.	• Sum of exterior angles of polygon • Kinds of Quadrilaterals and their properties. • Construction of quadrilaterals: • (i)When four sides & diagonal is given. • (ii) When two diagonals & three sides are given. • (iii) When two sides & three angles are given. • (iv) When three sides & two angles are given. • View of 3D shapes: Plan {top view}, Side view {side elevation}, and front view {front elevation}. Edges, Faces, and Vertices. • Euler's formula.	✓ To understand sum of interior angles is 180°(n–2) ✓ To verify the sum of exterior angles of any polygon is 360°. ✓ To construct different quadrilaterals when their properties are given. ✓ To recall all 2D and 3D shapes. ✓ To discuss their properties. ✓ To emphasize on the difference between prism and pyramid. ✓ To discuss the number of vertices, faces and edges. ✓ To verify the Euler's formula and identify the 3D shape.	360^0 by paper cutting and pasting. ➢ To make a Kite and a Rhombus by paper folding and cutting method and mention its properties.	Ch1.Rational numbers Ch2. Linear equations in one variable. Slip Test - 3
August [22]	**Ch6:** Squares and Square Roots **Ch7** : Cubes and Cube Roots	• Interesting facts on square numbers. Pythagorean Triplets. To find square roots by repeated subtraction, prime factorization and long division.	✓ To recall prime factorization, prefect squares and interesting patterns. ✓ To explain long division to find square root of a number. ✓ To verify Pythagorean Triplets.	➢ Lab Activity on Concave and Convex polygons.	Worksheets - 5 & 6 Slip test 4

Month & No. of Teaching Days	Units	Sub- Units	Objectives	Activities Planned	Assessment / Recap
		Estimation of square root of decimals. • Interesting facts on cube numbers. Finding cube roots by prime factorization and estimation.	✓ To use prime factorization to identify perfect cubes. ✓ To discuss the properties of cube numbers. ✓ To estimate the cube root of a number.		
September [7]	Half yearly revision				Revision Worksheet -1 **Half yearly portion:** **Ch 1** :Rational Numbers **Ch2 :** Linear Equations in One variable **Ch3:** Understanding Quadrilaterals. **Ch 4** : Practical Geometry **Ch6:** Squares and Square Roots **Ch7:** Cubes and Cube Roots **Ch10:** Visualizing solid shapes. **Ch 16**: Playing with Numbers
October [17]	**Ch12** : Exponents and Powers **Ch 8**: Comparing Quantities.	• Laws of Exponents. • Powers with Negative Exponents • Use of exponents in writing scientific form. • Recall Ratio and Proportion. • Finding increase and decrease percentage.	• To understand laws of Exponents. • To identify zero power and negative powers. • To write very large and very small numbers in Scientific Form. • To recall the relation between Ratio and Proportion. To	➢ Lab Activity on Exponents and Powers	Worksheet 7 Slip Test 5

Month & No. of Teaching Days	Units	Sub- Units	Objectives	Activities Planned	Assessment / Recap
		• Finding Discounts, Cost Price, Selling Price, Profit% or Loss%. • Sales Tax/VAT, Compound Interest.	explain change in percentage with respect to original percentage. To discuss and verify the relation between Cost Price and Selling Price. • Profit% and VAT. To recall simple interest and explain compound interest compounded both half yearly and annually.		
November [24]	**Ch 9**: Algebraic Expressions and Identities **Ch 15**: Introduction to Graphs	• Expressions, Terms, Factors, Coefficients, Monomials, Binomials, Polynomials, Like & unlike terms. Addition, Subtraction and Multiplication of Algebraic Expressions. Apply Standard Identities • Bar Graph, • Line graph • Pie chart • Histogram and Linear Graph.	✓ To understand the meaning of terms and expressions. To discuss Monomial, Binomial, Trinomial, like & unlike terms, coefficients and constants. ✓ To add, subtract and multiply polynomials. ✓ To understand and apply Standard Algebraic Identities and evaluate using these identities. ✓ To explain Cartesian plane and four quadrants. ✓ T plot points in order to form a line or linear graph. ✓ Apply graphs in real life situations	➢ Lab activities to prove the following algebraic identities: (i) $(a-b)^2$ (ii) $(a+b)^2$	Worksheets - 8 & 9 Slip Test 6
December [20]	**Ch13 :** Direct and Inverse Proportion	• Direct Proportion			Worksheets - 10 & 11

Month & No. of Teaching Days	**Units**	**Sub- Units**	**Objectives**	**Activities Planned**	**Assessment / Recap**
	Ch 14: Factorization	Inverse Proportion • Factors of natural numbers and algebraic expressions. • Factorization by: ○ Regrouping terms ○ Using identities. ○ Division of algebraic expressions. ○ Identify and correct the error.	✓ To recall the relation between ratio and proportion. ✓ To discuss and explain : (i) direct proportion ✓ (ii)Inverse proportion with the help of real life examples ✓ To recall the factors and identify HCF of algebraic expressions to factorize. ✓ To use standard identities to factorize the algebraic expressions. ✓ To simplify and identify the errors in the given expression & correct them	➢ Lab Activity on Direct and Inverse proportion.	
January [20]	**Ch 11:**Mensuration	• Area of circle and Trapezium , • Area of a quadrilateral. • Surface Area of cube, cuboid and cylinder. • Volume and Capacity	✓ To discuss area of all 2D shapes and area of any irregular quadrilateral. ✓ To derive and explain surface area and volume of Cube, Cuboid and Cylinder. ✓ To convert of units of volume and capacity	➢ Lab Activity to explore the relationship between (i) length and perimeter (ii) length and area of 5 squares of different dimensions .	Worksheet 12 **P.T.3 portion** **Ch13 :** Direct and Inverse Proportion **Ch 9**: Algebraic Expressions and Identities
February [16]	**Ch5** : Data Handling	• Frequency distribution table. • Bar Graph, Histogram and Pie chart. • Probability	✓ Recall and draw bar graphs and double bar graphs. ✓ To organize data in the form of frequency table. ✓ To represent data as a histogram and pie chart.	➢ Activity on collecting and representing data	Revision Worksheet - 2 Annual Exam portion:- **Ch 1** :Rational Numbers **Ch 2:** Linear Equations in One variable

Month & No. of Teaching Days	Units	Sub- Units	Objectives	Activities Planned	Assessment / Recap
	Annual Exam		✓ Discuss chance and probability related to real life.		**Ch 3:** Understanding Quadrilaterals. **Ch 5:** Data Handling **Ch 8**: Comparing Quantities **Ch 9**: Algebraic Expressions and Identities **Ch 11**Mensuration **Ch 12:** Exponents and Powers **Ch 13:** Direct and Inverse Proportion **Ch 14:** Factorization **Ch 15**: Introduction to Graphs