Espalier Heritage School

Annual Planner 2025-26

Grade VIII		Subject: Maths					Created By: Sagar Pawar		
Sr No	Lesson Name	Points To Cover	Lesson Flow	Learning objectives	Methodology	Pedagogical process	Learning outcomes	Teaching Aid	Teaching Place
1	Rational Numbers	1. Introduction	1. Set induction to check the knowledge about rational number	1. Students will understand that rational numbers are closed under the operation of addition, subtraction and multiplication	Inductive and deductive	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to explore examples of rational numbers with all the operations and	1. The learner generalises properties of addition, subtraction, multiplication and division of rational numbers through patterns.	Chart	Classroom
		2.Properties of Rational Numbers	2. Explain the concept of various properties of rational numbers	2. Students will understand how to use the property of rational numbers to solve various types of sums		explore patterns in these operations.	2. The learner finds out as many rational numbers as possible between two given rational numbers.		
		3. Representation of rational numbers on the number line	3. Solving exercise based on the properties of rational numbers	3. Students will understand how to represent rational numbers on number line					

		4. Rational numbers between two rational numbers	4. Explain how to representing rational number on number line						
			5. Explain the concept of finding infinite rational numbers between any two rational numbers						
			6. Solving exercise based on above concept						

2	Linear Equations in One Variable	1. Introduction	1. Set induction to check the knowledge about equation	1. Students will understand that the highest power of the variable appearing in the equation is 1 is known as linear equation	Scientific Attitude	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to observe situations that lead to	1. The learner solves puzzles and daily life problems using variables.	-	Classroom
		2. Solving equations which have linear expressions on one side and number on the other side	2. Explain concept of linear equation in one variable	2. Students will understand how to solve linear equation and how it applicable in day to day life		simple equations and solve them using suitable processes.			
		3. Some Applications	3. Solving equation and application based question	3. Students will understand that expression farming					
		4. Solving equations having the variable on both sides	4. Explain concept how to reduce equation to simpler form	equations have to be simplified before we can solve them by using usual method.					

		5. Some more Applications	5. Solving sums based on above concept						
		6. Reducing equations to simpler form	6. Explain concept how equations reducible to Linear form						
		7. Equations reducible to the linear form	7. Solving sums based on above concept						

3	Understanding Quadrilaterals	1. Introduction of polygons, classification of polygons, convex and concave polygons and regular, irregular polygons and angle sum property of quadrilaterals.	1. Set induction to check the previous knowledge of student about shapes and its types. 2. Introduction and classification of polygons.	1. Students will understand that polygon classified into concave and convex polygon.	Inductive and deductive	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to verify the properties of parallelograms and apply reasoning by doing activities such as constructing parallelograms,	1. The learner Solves problems related to angles of a quadrilateral using angle sum property	Shapes of special quadrilaterals	Math lab
		2. Sum of the measures of the exterior angles of a polygon.	3. To conduct activity to explain the angle sum property of quadrilateral	2. Students will understand that all angle of convex polygon is less than 180 degree and in concave polygon one angle is more than 180 degree.		drawing their diagonals and measuring their sides and angles.	2. The learner verifies properties of parallelograms and establishes the relationship between them through reasoning.		
		3. Kinds of quadrilaterals.	4. Solving exercise 3.1 based on above properties and concepts.	3. Students will understand angle sum property of quadrilateral by doing an activity.					
		4. Some special parallelogram.	5. To explain the property of some of the measure of the exterior angle of polygon is 360 degree.	4. Students will understand the property of exterior angle of any polygon.					

			6. Solving exercise 3.2 based on the exterior angle property of polygon.	5. Students will understand various types of quadrilateral and its properties					
			7. To explain the various types of special quadrilateral and its properties based on side angle and diagonal.						
			8. Solving exercise 3.3 and exercise 3.4 based on the properties of various types of quadrilateral.						

4	Data Handling	1. Introduction	1. Set induction to check the previous knowledge about data handling concept.	1. Students will understand that data mostly available to us in an unorganised form and we are representing them systematically to analyse the data for specific purpose.	Inductive and Deductive.	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to collect data, organise it into groups and represent it into bar graphs/ pie chart.	1. The learner draws and interprets bar charts and pie charts.		Classroom
		2. Frequency distribution table.	2. To explain that what is the need of data handling in our day to day life.	2. Students will understand that data can also represented using circle graph or pie chart a circle graph showing the relationship between a whole and its part.		2. The learner may be provided opportunities in pairs/groups/ individually and encouraged to	2. The learner makes hypotheses on chances of future events on the basis of its earlier occurrences		
		3. Circle graph or pie chart	3. To explain the concept of representing data in tabular form of ungroup and group data.	3. Students will understand that chances and probability are related to real life.		conduct activities related to throwing a large number of identical dice/coins together and	or available data like , after repeated throws of dice and coins.		
		4. Chance and Probability.	4. Solving exercise 5.1 on above concept. 5. To explain the concept of representing data in circle.			aggregating the result of the throws to get a large number of individual events and make			

			6. Solving exercise 5.2 based on pie chart concept.			assumptions for future events on the basis of the above data.			
			7. To explain the concept of probability and solving exercise based on this concept.						
5	Squares and Square Roots	1. Introduction	1. To explain the properties of square number and solving exercise 6.1 based on this property	1. Students will understand and able to write square numbers.	Inductive and deductive	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to	1. The learner finds squares and square roots of numbers using different methods.	Chart of square and square root	Classroom

		2. Properties of Square Numbers	2. To explain the concept of Pythagorean triples.	2. Students will understand that square numbers end with 0,1,4,5,6 or 9 at unit place.		explore patterns in square numbers, square roots of numbers and form rules for exponents as integer			
		3. Some More Interesting Patterns	3. To explain some new patterns in square.	3. Students will understand that square root is the Inverse Operation of square.					
		4. Finding the Square of a Number	3. Solving exercise 6.2 based on above concept.	4. Students will understand that there are two integral square root of a perfect square number.					
		5. Square Roots	4. To explain how to find the square root of any perfect square number.						

		6. Square Roots of Decimals	5. To explain how to find square root by using prime factorization method and division method.						
		7. Estimating Square Root	6. To explain exercises based on above concept.						
			7. To to explain the method to find estimate square root and also square root of decimal numbers.						
			8. To explain how to solve sum of exercise based on above concept.						

6	Cubes & Cube Roots	1. Introduction	1. Set induction to check the previous knowledge about basic concept of cube.	1. Students will understand that number obtained when a number is multiplied by itself three times are known as cube.	Inductive and deductive method	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to	1. The learner finds squares, cubes and square roots and cube roots of numbers using different methods.	chart of cube and cube roots	classroom
		2. Cubes	2. To explain the concept of finding cube of any integers. 3. To explain exercise 7.1 based on above concept	2. Students will understand that if in the prime factorization of any number each factor appears three times then the number is a perfect cube.		explore patterns in square numbers, square roots, cubes and cube roots of numbers and form rules for exponents as integer			
		3. Cubes Roots	4. To explain the concept of finding cube root of perfect cube numbers by using prime factorization method and and also to find the cube root through estimation.	3. Students will understand that how to find the cube root of any integers.					
			5. To explain exercise 7.2 based on about concept.						

7	Comparing Quantities	1. Recalling Ratios and Percentages	1. To explain the concept of ratios and percentage an application of ratio and percentage.	1. Students fill understand that how ratio proportion, profit and loss, discount concept used in our day to day life.	Problem Solving	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to observe contexts that involve the use of percentages like discount, profit & loss, VAT, simple and compound interest, etc.	1. The learner applies the concept of per cent in profit and loss situation in finding discount, VAT and compound interest. e.g., calculates discount per cent when marked price and actual	-	Classroom
		2. Finding the Increase and Decrease Percent	2. To explain how to solve exercise 8.1 based on above concept.	2. Students will understand the calculation of finding profit and loss, discount, ratio and proportion.		2. generalise the formula of compound interests through repeated use of simple interest	discount are given or finds profit per cent when cost price and profit in a transaction are given.		
		3. Finding Discounts	3. To explain application of increase or decrease percentage concept in our day to day life	3. Students will understand that how to calculate compound quarterly, half yearly and annually.		3. observe situations where one quantity depends on the other. the quantities increase together, or in which while			

		8.4 Prices Related to Buying and Selling (Profit and Loss)	4. To explain how to find discount of any goods an articles			one increases the other decreases. For example, as the speed of a vehicle increases the			
		5. Sales Tax/Value Added Tax/Goods and Services Tax	5. To the concept of profit and loss observed in our day to day life			time taken by it to cover the distance decreases.			
		6. Compound Interest	6. To explain exercise 8.2 based on above concept						
		7. Deducing a Formula for Compound Interest	7. To explain the concept of sale tax or value added tax which we are paying to our government.						

		8. Rate Compounded Annually or Half Yearly (Semi Annually)	8. To explain exercise 8.2 sums based on above concept.						
		9. Applications of Compound Interest Formula	9. To explain the concept of simple interest and compound interest. Also to explain computation of simple interest and compound interest in different cases.						
			10. To explain how to solve exercise I'm based on above concept.						

8	Algebraic Expressions and Identities	1. What are Expressions?	1. Set induction to check the previous knowledge about variable and constant.	1. Students will understand that expressions are formed from variables and constants.	Inductive and deductive method	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to	1. The learner solves puzzles and daily life problems using variables.	Chart	Classroom
		2. Terms, Factors and Coefficients	2. To explain the concept of terms, factors and coefficient in algebraic expression. Also how to to determine like and unlike term of algebraic expression.	2. Students will able to classify expression in the the monomial, binomial and trinomial respectively.		multiply two algebraic expressions and different polynomials based on previous knowledge of distributive property of numbers and generalise various algebric identities using concrete examples	2. The learner uses various algebric identities in solving problems of daily life		
		9.3 Monomials, Binomials and Polynomials	3. To explain the concept of of monomial, binomial and polynomial	3. Students I will understand that like terms are formed from the same variable and the power of these variables are the the same too.		2. factorise algebraic expressions using relevant activities based on previous knowledge of factorising two numbers	3. The learner multiplies algebraic expressions. • e.g expands (2x-5)(3x2+7).		
		4. Like and Unlike Terms	4. To explain exercise 9.1 based on above concept.	4. Students will understand that there are number of situation in which we need to multiply algebraic expressions.					

		5. Addition and Subtraction of Algebraic Expressions	5. To explain the concept of multiplication of algebraic expressions i.e. monomial by a monomial.	5. Students will understand that an identity is an equality which is true for all values of the variables in the equality.					
		6. Multiplication of Algebraic Expressions: Introduction	6. To explain exercise 9.2 based on above concept.	6. Students will understand that some identities are useful in carrying out squares and product of algebraic expressions.					
		7. Multiplying a Monomial by a Monomial	7. To explain the concept of multiplying monomial by polynomial and polynomial by another polynomial.	They also allow easy alternative method to calculate product of number and so on.					
		8. Multiplying a Monomial by a Polynomial	8. To explain exercise 9.4 based on above concept.						

		9. Multiplying a Polynomial by a Polynomial 10. What is an Identity?	9. To explain the concept of Identity. Also how identity is used to do to many calculation in algebraic expression.						

9	Mensuration	1. Introduction	1. Set induction to check the previous knowledge of student about area.	1. Students will able to find area of trapezium and general quadrilateral.	Scientific attitude	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to	1. The learner estimates the area of shapes like trapezium and other polygons by using square grid/ graph sheet and verifies using formulas.	Shapes of cube cuboid and cylinder	Classroom
		3. Area of Trapezium	2. To to explain exercise 11.1 based on Basic concept of Mensuration.	2. Students able to find surface area and volume of cube cuboid and cylinder		derive formulae for surface area of cubes and cuboids using the formulae for areas of rectangles, squares and circles	2. The learner finds the area of a polygon.		
		4. Area of General Quadrilateral	3. To to explain how trapezium formula derived and how to find the the area of trapezium			2. demonstrate to find volume of a given cube and cubiod using unit cubes	3. The learner finds surface area and volume of cuboidal and cylindrical object.		
		5. Area of Polygons	4. To explain the concept of how to find the area of a General quadrilateral.						

		6. Solid Shapes	5. To explain exercise 11.2 based on above concept.						
		7. Surface Area of Cube, Cuboid and Cylinder	6. To explain the concept of surface area of cube cuboid and cylinder						
		8. Volume of Cube, Cuboid and Cylinder	7. To explain exercise 11.3 based on above concept.						
		9. Volume and Capacity	8. To explain the concept of finding volume of cube cuboid and cylinder.						

			9. To exercise 11.4 based on above concept.						
10	Exponents and Powers	1. Introduction	1. To explain the concept of base and index	1. Students will understand that how to use law of exponents to solve the sums.	Inductive and deductive	1. The learner may be provided opportunities in pairs/groups/ individually and	1. The learner solves problems with integral exponents.	Chart of law of exponents.	classroom
		2. Powers with Negative Exponents	2. To explain various laws of exponents.	2. Students will understand that very small numbers can be		encouraged to generalised the law of exponents.			

		3. Laws of Exponents	3. To explain how to solve exercise 12.1 based on above concept.	expressed in standard form by using negative exponents.					
		4. Use of Exponents to Express Small Numbers in Standard Form	4. To explain the concept of of using of exponents to express small number in standard form.						
			4. To explain how to solve exercise 12.2 based on above concept.						

11	Direct and Inverse Proportions	1. Introduction	1. To explain the concept of direct proportion and solving exercise 13.1 based on this concept.	1. Students will understand that two counties are said to be in direct proportion if they increase or decrease together in such a manner that the ratio of their corresponding values remain constant.	Inductive and deductive	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to observe situations where one quantity depends on the other. the quantities increase together, or in which while one increases the	1. The learner Solves problems based on direct and inverse proportions.	-	Classroom
		2. Direct Proportion 3. Inverse Proportion	2. To explain concept of inverse proportion and solving of exercise 13.2 based on this concept	2. Students will understand that two quantity is said to be inverse proportion if one quantity increase and another quantity decrease proportionally in such a manner that the product of their corresponding values remain constant.		other decreases. For example, as the speed of a vehicle increases the time taken by it to cover the distance decreases.			
12	Factorisation	1. Introduction	1. To explain the concept of factorization	1. Students will understand that when we factorise an expression we write it as a product of factor and these factors may be number algebraic variables or algebraic expressions	Inductive and deductive	1. 1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to factorise algebraic expressions using relevant activities based on previous knowledge of factorising two numbers	1. The learner multiplies algebraic expressions. • e.g expands (2x-5)(3x2+7). • uses various algebric identities in solving problems of daily life	-	Classroom

		2. What is Factorisation?	2. To explain the concept of writing factor of polynomials and also to find the common factor of polynomial.	2. Students will understand division of polynomial by a monomial, binomial and polynomial		2. multiply two algebraic expressions and different polynomials based on previous			
		3. Division of Algebraic Expressions	3. To explain exercise 14.1 based on above concept.			knowledge of distributive property of			
		4. Division of Algebraic Expressions Continued (Polynomial / Polynomial)	4. To explain the concept of factorisation by using identities and solving exercise 14.2 based on this concept.			numbers and generalise various algebric identities using concrete examples			
			5. To explain the concept of division of algebraic expression by monomial, binomial and polynomial by monomial and binomial.						

			6. To explain exercise 14.3 based on above concept.						
13	Introduction to Graphs	1. Introduction	1. Set induction to check the previous knowledge of presenting data in graph	1. Students will able to represent data in bar graph, pie graph and histogram	inductive and deductive	1. The learner may be provided opportunities in pairs/groups/ individually and encouraged to	1. The learner	Graph book	classroom
		2. Linear Graphs	2. To explain the concept of representing data in graph and circle.	2. Students will understand that a line graph display data that change continuously over period of time.		collect data, organise it into groups and represent it into bar graphs/ pie chart			

		3. Some Applications	3. To explain the concept of graph used in IR daily life and solving exercise based on it.						