Mathematics - VIII Standard

Unit No. & Topic	Expected learning outcomes	Content	Transactional Teaching Strategy	Teaching Aids	No. of Periods
1. Number work	To find the bigger of any two whole numbers To find the bigger of any two integers To find the bigger of any two rational numbers To place a set of given numbers in ascending and descending order	1.1 Order relations Among numbers Revision	Mark the numbers on the number line. Tell the numbers to the right are bigger	Number line	40
	To know how to covert rational numbers into decimal and vice-versa To understand that rational numbers can be expressed as repeating or terminating decimals	1.2 Decimals to represent numbers	Give examples of rational number which are terminating decimals eg.2/5,3/5 Give examples of rational numbers which are repeating decimals eg: 1/3, 1/11 Ask the students to try with different rational numbers. Ask the question whether the reverse is true.	Number line	

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	To find that certain decimals are non	1.3 Irrational numbers	Give example of irrational		

	repeating and non terminating		numbers Eg.1.010010001…….		
	To understand that the number system has to be extended to include such irrational numbers	1.3.1 Non repeating non terminating decimals			
	To understand that the real number system includes rational and irrational numbers	1.3.3 Real Number line			
	To understand and apply algorithm to find the square root	7.4. Roots of numbers 1.4. 1 finding square root by division method	Experimental method to find approximate square root by squeezing method and Newton' s divide and average method		
	To find cube roots of perfect cubes by factorization	1.4.2 cube root of a perfect cube approximate value of cube, root of a non perfect cube.			
	To identify absolute error and relative error. To estimate approximate solutions to problems To find limits of accuracy of data	1.5 Errors and Estimation	Introduce through life situations		

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Everyday Arithme		2.1 percentages			**30**

	To know and understand the different schemes for various finance schmes	2.1.1 Housing Finance	Experimental verification of the advantages of different schems	Brochures advt., etc.,	
	To compare various schmes & find out the most advantages	2.1.2 Hire purchase and Instalment schems	Calculate the true rate of discount / Interest charged		
	To understand the concept of compound Interest To know that most finance companies charge only compound interest TO understand that to compare two different schemes, compound rate of interest is used. To calculate compound interest & amount	2.2 Banking Compound Interest (upto 3 terms)	Compare monthly, Quarterly, Annual Interest paid by a finance company, Make students understand that the variation is due to compounding of interest	Company deposit schemes	
	To know to prepare an income & expenditure statement To know basics of family budgeting	2.3 Domestic Finances	Collect details of income & expenditure of a house holder		

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3. Measurements	To understand that 3D representation on plane paper is an optical illusion. To give the optical illusion, know that isometric sheets are used. To know how to draw cubes, cuboids & parallelepipeds on isometric sheets	3.1 Drawing 3D Shapes	Introduce isometric graph sheets, otherwise explain the principles of oblique drawing	Isometric dot paper graph sheets	**30**
	To know the formula for surface area & volume of solids specified To calculate the surface area & volume of the solids, given measurements	3.2 Surface areas and volumes Right prism, Cylinder Sphere, Hemisphere & Cone (no combined shapes)	Wherever possible tell the student to derive the formula Use Pythagoras property of right triangle to find slant height	Models of solids	
4. Algebra	To know how to frame formula in given situation To recall the formulae learnt so far To verify the results	4.1. Framing Formula	Tabulate all the formula learnt so far		**40**
	To understand that two equations are needed to find the value of two variable To understand & variable from a pair of equations	4.2 Simultaneous equations (Two variables only)	Frame simultaneous equation using life situation		

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5. Geometry	To verify that angles opposite to equal sides are equal & vice versa To verify inequality in a scalene triangle	5.1 Properties of triangles	Through paper folding verify the properties	Paper folding paper cutting	**30**
	To verity that the base angles of an isosceles triangle are equal.	5.1.1 Isoscels triangle	Draw triangles measure sides & angles and verify		
	To verity that all angles are equal in equilateral triangle.	5.1.2. Equilateral triangle			
	To verify that the sum of the lengths of any two sides is greater than the third side	5.1.3. Triangular inequality			
	To understand the conditions of congruence of triangles	5.1.4 Congruence of triangle (SSS, SAS, ASA, RHS)	Explain why SSA is not a sufficient condition		
	To identify the four special points of concurrency ie, circumcentre, incentre, orthocentre & centroid	5.2. Concurrency in triangle	Through paper folding identify the concurrent points	Paper folding	
	To verify & understand the properties of parallelogram TO know that rhombus is a parallelogram with adjacement sides equal To know that rectangle is a parallelogram with all angle equal To know that square is a parallelogram with equal sides & equal angles	5.3. Parallelograms Equlity of opposite sides and opposite angles Diagonals as bisectors of each other.			

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6. Practical geometry	To know how to draw parallelogram & rhombus To know how to draw a trapezium and general quadrilateral (Simple cases)	6.1 Quadrilaterals Drawing special & general quadrilaterals	Black board Demonstration		**30**
	To know how to draw circle with same center & varying radii	6.2. Concentric circles	Designs of concentric circles	Models of concentric circles	
7. Data Handling	To read & interpret conversion graphs	7.1 Conversion graphs Linear, area, money exchange	Real life situation		**24**
	To read & interprent linear graphs	7.2 Variation Graphs			
	To draw linear graphs	7.21 Direct variation, Quantity & cost, Time & Distance Speed & distrance			
	To read & interpret graphs of inverse variation To draw graphs				
				Total	**224**