

Class IX
Subject Mathematics
Term Wise Syllabus
Academic Session 2010-2011

First Terminal

Chapter 1: Number Systems

Chapter 2: Polynomials

Chapter 3: Co-Ordinate Geometry

Chapter 5: Introduction to Euclid's Geometry

Chapter 6: Lines and Angles

Chapter 7: Triangles

Chapter 12: Heron's Formula

Second Terminal

Chapter 4: Linear Equations in Two Variables

Chapter 8: Quadrilaterals

Chapter 9: Area of Parallelograms and Triangles

Chapter 10: Circles

Chapter 11: Constructions

Chapter 14: Statistics

Chapter 15: Probability

Chapter 13: Surface Area and Volumes

NOTE : (1) Every MONDAY - Mental Maths Practice From the concern Topic From Mental Maths Book

NOTE: (2) Related Activities At The End Of The Chapter.

Weekly Syllabus Break-up For the Academic Session 2010-2011
FIRST TERM

MONTH/ WEEK	DATES	DAYS	CHAPTER/ TOPICS	DETAILS
APRIL-2010				
1 WEEK	1-3	2	Chapter 1 :Number Systems Ex:1.1	REAL NUMBERS Review of representation of natural numbers, integers, rational numbers on the number line. Representation of terminating/ non-terminating recurring decimals, on the number line through successive magnification. Ch-1 Mental Maths 1-30
2 WEEK	5-9	5	Ex-1.2 ,1.3	Rational numbers as recurring/terminating decimals. Examples of non-recurring / nonterminating decimals such as square roots of 5, 3, 2, etc.5 Existence of nonrational numbers (irrational numbers) such as square root of 3, 2 and their representation on the number line. Explaining that every real number is represented by a unique point on the number line, and conversely, every point on the number line represents a unique real number. Existence of square root of x for a given positive real number x (visual proof to be emphasized). Definition of n th root of a real number. Ch-1 Mental Maths.-31-55

3 WEEK	12-17	6	Ex-1.4-1.6	Recall of laws of exponents with integral powers. Rational exponents with positive real bases (to be done by particular cases, allowing learner to arrive at the general laws). Rationalization (with precise meaning) of real numbers of the type (& their combinations) $1/(a+b \text{ sq. root of } x)$, $1/(ab \text{ sq. root of } x)$ & $1/(\text{sq. root of } x + \text{sq. root of } y)$, $1/(\text{sq. root of } x - \text{sq. root of } y)$, where x and y are natural numbers and a, b are integers.
4 WEEK	19-24	6	Chapter 2: Polynomials Ex:2.1-2.2	POLYNOMIALS Definition of a polynomial in one variable, its coefficients, with 3 examples and counter examples, its terms, zero polynomial. Degree of a polynomial. Constant, linear, quadratic, cubic polynomials; monomials, binomials, trinomials. Factors and multiples. Zeros/roots of a polynomial/ equation. State and motivate the Remainder Theorem with examples and analogy to integers. Statement and proof of the Factor Theorem. Ch-2 Mental Maths.-1-25
5 WEEK	26-1	6	Ex-2.3-2.5	Factorization of Polynomials $ax^2 + bx + c$, where a, b, c are real numbers, and a not equal to Zero and of cubic polynomials using the Factor Theorem. Recall of algebraic expressions and identities. Further identities of the type $(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2$

				$z^3 - x^3 = (z - x)(z^2 + zx + x^2)$, $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$ and their use in factorization of polynomials. Simple expressions reducible to these polynomials Ch-2 Mental Maths -26-50
MAY				
1 WEEK	3-7	5	Chapter 3:Co-Ordinate Geometry Ex:3.1-3.3	COORDINATE GEOMETRY The Cartesian plane, coordinates of a point, names and terms associated with the coordinate plane, notations, plotting points in the plane, graph of linear equations as examples; focus on linear equations of the type $ax + by + c = 0$ by writing it as $y = mx + c$ and linking with the chapter on linear equations in two variables. Maths Activity Ch-3 Mental Maths -1-47
MAY & JUNE	10/05/2010-25/06/2010	SUMMER VACATION		
JULY				
1 WEEK	26,28-3	1+6=7	Chapter 5:Introduction To Euclid's Geometry Ex:5.1-5.2	INTRODUCTION TO EUCLID'S GEOMETRY History – Euclid and geometry in India. Euclid's method of formalizing observed phenomenon into rigorous mathematics with definitions, common/obvious notions, axioms /postulates, and theorems. The five postulates of Euclid. Equivalent versions of the fifth postulate. Showing the relationship between axiom and theorem. 1. Given two distinct points, there exists one and only one line through them.

				2. (Prove) Two distinct lines cannot have more than one point in common. Ch-5 Mental Maths -1-50
2 WEEK	5-9	5	Chapter 6:Lines And Angles Ex:6.1	LINES AND ANGLES 1. (Motivate) If a ray stands on a line, then the sum of the two adjacent angles so formed is 180° and the converse. 2. (Prove) If two lines intersect, the vertically opposite angles are equal. 3. (Motivate) Results on corresponding angles, alternate angles, interior angles when a transversal intersects two parallel lines. Ch-6 Mental Maths -1-25 Maths Activity
3 WEEK	12-17	6	Ex-6.2	4. (Motivate) Lines, which are parallel to a given line, are parallel. 5 5. (Prove) The sum of the angles of a triangle is 180° .
4 WEEK	19-24	6	Ex-6.3	6. (Motivate) If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interiors opposite angles. Ch-6 Mental Maths -26-50
5 WEEK	26-31	6	Chapter 7:Triangles Ex:7.1	3. TRIANGLES 1. (Motivate) Two triangles are congruent if any two sides and the included angle of one triangle is equal to any two sides and the included angle of the other triangle (SAS Congruence). 2. (Prove) Two triangles are congruent if any two angles and the included side of one triangle is equal to any two angles and the included side of the other triangle (ASA Congruence). 3. (Motivate) Two triangles are congruent if the three sides of one triangle are equal

				to three sides of the other triangle (SSS Congruence). 4. (Motivate) Two right triangles are congruent if the hypotenuse and a side of one triangle are equal (respectively) to the hypotenuse and a side of the other triangle. Ch-7 Mental Maths -1-23
AUGUST				
1 WEEK	2-7	6	Ex-7.2-7.3	5. (Prove) The angles opposite to equal sides of a triangle are equal. 6. (Motivate) The sides opposite to equal angles of a triangle are equal. 7. (Motivate) Triangle inequalities and relation between 'angle and facing side' inequalities in triangles. Ch-7 Mental Maths -24-45
2 WEEK	9-13	5	Ex-7.4	Maths Activity
3 WEEK	16-21	6	Chapter 12:Heron's Formula Ex:12.1	AREAS Area of a triangle using Heron's formula (without proof).
4 WEEK	23-28	6	Ex:12.2	Application of Heron's Formula in finding the area of a quadrilateral. Ch-10 Mental Maths -1-23
SEPTEMBER				
1 WEEK	30-4	5	Chapter 4 Equations In Two Variables Ex:4.1-4.4	TWO VARIABLES Recall of linear equations in one variable. Introduction to the equation in two variables. Prove that a linear equation in two variables has infinitely many solutions, and justify their being written as ordered pairs of real numbers, plotting them and showing that they seem to lie on a line. Examples, problems from real life, including problems on ratio and proportion. And with algebraic and graphical solutions being done simultaneously.

				Ch-4 Mental Maths -1-48
2 WEEK	6-10	4	Project work and Maths Activities	1st CCEP Exam 08/09/2010
3 WEEK	13-18	6	Revision	
4 WEEK	20-30		1st SEMESTER EXAM	
01/10/2010 TO 17/10/2010 Closure of Schools Due to Common Wealth Games(08/10/2010 TO 16/10/2010 Autumn Break)				
OCTOBER				
3 WEEK	18-23	5	Chapter 9:Area Of Parallelograms And Triangles Ex- 9.1.9.3	AREA Review concept of area, recall area of a rectangle. 1. (Prove) Parallelograms on the same base and between the same parallels have the same area. 2. (Motivate) Triangles on the same base and between the same parallels are equal in area and its converse.
4 week	25-30	6	Chapter 10 Circles Ex 10.1	CIRCLES Through examples, arrive at definitions of circle related concepts, radius, circumference, diameter , chord, arc , subtended angle. Ch-9 Mental Maths -1-20
NOVEMBER				
1 WEEK	1-6	5	Chapter 10 Circles Ex 10.2 to 10.4	1. (Prove) Equal chords of a circle subtend equal angles at the centre and (motivate) its converse. 2. (Motivate) The perpendicular from the centre of a circle to a chord bisects the chord and conversely, the line drawn through the centre of a circle to bisect a chord is perpendicular to the chord. 7 3. (Motivate) There is one and only one circle passing through three given non-collinear points.

				4 .(Motivate) Equal chords of a circle (or of congruent circles) are equidistant from the centre (s) and conversely. Ch-9 Mental Maths -21-40
2 WEEK	8-12	5	Ex-10.5	5. (Prove) The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle. 6. (Motivate) Angles in the same segment of a circle are equal. 7. (Motivate) If a line segment joining two points subtends equal angle at two other points lying on the same side of the line containing the segment, the four points lie on a circle. 8. (Motivate) The sum of the either pair of the opposite angles of a cyclic quadrilateral is 180° and its converse. Ch-9 Mental Maths -41-49 Maths Activities
3 week	15-20	5	Chapter11: Constructions Ex:11.1-11.2	CONSTRUCTIONS 1. Construction of bisectors of line segments & angles, 60° , 90° , 45° angles etc, equilateral triangles. 2. Construction of a triangle given its base, sum/difference of the other two sides and one base angle. 3. Construction of a triangle of given perimeter and base angles. Maths Activities
4 WEEK	22-27	6	Chapter 14:Statistics	STATISTICS

			Ex:14.1-14.2	Introduction to Statistics: Collection of data, presentation of data –tabular form, ungrouped/grouped, bar graphs, histograms (with varying base lengths), frequency polygons, qualitative analysis of data to choose the correct form of presentation for the collected data. Ch-12 Mental Maths -1-12
DECEMBER				
1 WEEK	29-4	6	Ex:14.3-14.4	Graphical representation of data. Measures of central tendency- mean, median and Mode of ungrouped data. Ch-12 Mental Maths -13-25
2 WEEK	6-10	4	Chapter 15:Probability Ex:15.1	PROBABILITY History, Repeated experiments and observed frequency approach to 8 probability. Focus is on empirical probability. (A large amount of time to be devoted to group and to individual activities to motivate the concept; the experiments to be drawn from real - life situations, and from examples used in the chapter on statistics). Ch-13 Mental Maths -1-25
3 WEEK	13-18	6	Chapter 8:Quadrilaterals Ex:8.1	QUADRILATERALS 1. (Prove) The diagonal divides a parallelogram into two congruent triangles. 2. (Motivate) In a parallelogram opposite sides are equal, and conversely. 3. (Motivate) In parallelogram opposite angles are equal and conversely. 4. (Motivate) A quadrilateral is a parallelogram if a pair of its opposite sides is parallel

				and equal. 5. (Motivate) In a parallelogram, the diagonals bisect each other and conversely. Ch-8 Mental Maths -1-20
4 WEEK	20-24	5	Ex-8.2	6. (Motivate) In a triangle, the line segment joining the mid points of any two sides is parallel to the third side and (motivate) its converse. Ch-8 Mental Maths -21-40
27/12/2010 TO 07/01/2011 WINTER BREAK				
JANUARY				
2 WEEK	10-15	6	Chapter13: Surface Area And Volumes Ex:13.1-13.2	SURFACE AREAS Surface Area of Cuboids, Cube s, Right Circular Cylinder Ch-11 Mental Maths -1-15
3 WEEK	17-22	6	Ex:13.3-13.4	Surface Area of Right Circular Cone, Sphere Ch-11 Mental Maths -16-30
4 WEEK	24-29	5	Ex:13.5	Volume of Cuboids
FEBRUARY				
1 WEEK	31-5	6	Ex: 13.6	VOLUMES Right Circular Cylinder
2 WEEK	7-11	5	Ex:13.7-13.8	Volume of Right Circular Cone, Sphere
3 WEEK	14-19	6	Revision	Maths Activities
4 WEEK	21-28		Revision	
MARCH II nd SEMESTER EXAM				
	1-31			II nd SEMESTER EXAM (31/03/2011) Announcement of the Result

Note: - For Maths activities please see “Guidelines for Mathematics Laboratory in School” (Class-IX) issued by CBSE

ANNOUNCEMENT OF RESULT :-31/03/2011