## Mathematics Syllabus Classes I – V

Class I	Class II	Class III	Class IV	Class V
Geometry (10 hrs.)	Geometry (13 hrs.)	Geometry (16 hrs.)	Geometry (16 hrs.)	Geometry (16 hrs.)
SHAPES & SPATIAL	SHAPES & SPATIAL	SHAPES & SPATIAL	SHAPES & SPATIAL	SHAPES & SPATIAL
UNDERSTANDING	UNDERSTANDING	Understanding	UNDERSTANDING	UNDERSTANDING
• Develops and uses	3-D and 2-D Shapes	• Creates shapes through paper	• Draws shapes and patterns	• Gets the feel of perspective
vocabulary of spatial	• Observes objects in the	folding, paper cutting.	free hand and with compass.	while drawing a 3-D object
relationship (Top, Bottom,	environment and gets a	• Identifies 2-D shapes (square	• Uses Tangrams to create	in 2-D.
On, Under, Inside, Outside,	qualitative feel for their	rectangle, triangle, circle).	different shapes.	<ul> <li>Explores intuitively</li> </ul>
Above, Below, Near, Far,	geometrical attributes.	• Describes the various 2-D	• Tiles geometrical shapes:	rotations and reflections of
Before, After)	<ul> <li>Identifies the basic 3-D</li> </ul>	shapes by counting their sides,	using one or two shapes.	familiar 2-D shapes.
SOLIDS AROUND US	shapes such as cuboid,	corners and diagonals.	<ul> <li>Chooses a tile among a</li> </ul>	<ul> <li>Explores intuitively</li> </ul>
• Collects objects from the	cylinder, cone, sphere by	• Makes shapes on the dot-	given number of tiles that can	symmetry in familiar 3-D
surroundings having different	their names.	grid using straight lines and	tile a given region both	shapes.
sizes and shapes like pebbles,	• Traces the 2-D outlines of	curves.	intuitively and	• Makes the shapes of cubes,
boxes, balls, cones, pipes, etc.	3-D objects.	<ul> <li>Creates shapes using</li> </ul>	experimentally.	cylinders and cones using
<ul> <li>Sorts, Classifies and</li> </ul>	<ul> <li>Observes and identifies</li> </ul>	tangram pieces.	• Explores intuitively the area	nets especially designed for
describes the objects on the	these 2-D shapes.	<ul> <li>Matches the properties of</li> </ul>	and perimeter of simple	this purpose.
basis of shapes, and other	• Identifies 2-D shapes viz.,	two 2-D shapes by observing	shapes.	• Gets the feel of an angle
observable properties.	rectangle, square, triangle,	their sides and corners	• Makes 4-faced, 5-faced and	through observation and
• Observes and describes the	circle by their names.	(vertices).	6- faced cubes from given	paper folding.
way shapes affect movements	<ul> <li>Describes intuitively the</li> </ul>	• Tiles a given region using a	nets especially designed for	<ul> <li>Identifies right angles in</li> </ul>
like rolling and sliding.	properties of these 2-D	tile of a given shape.	the same.	the environment.
• Sorts 2 - D shapes such as	shapes.	<ul> <li>Distinguishes between</li> </ul>	<ul> <li>Explores intuitively the</li> </ul>	• Classifies angles into right,
flat objects made of	<ul> <li>Identifies and makes</li> </ul>	shapes that tile and that do not	reflections through inkblots,	acute and obtuse angles.
card etc.	straight lines by folding,	tile.	paper cutting and paper	• Represents right angle,
	straight edged objects,	• Intuitive idea of a map.	folding.	acute angle and obtuse angle
	stretched strings and draws	Reads simple maps (not	• Reads and draws 3-D	by drawing and tracing.
	free hand and with a ruler.	necessarily scaled)	objects, making use of the	<ul> <li>Identifies angles found in</li> </ul>
	<ul> <li>Draws horizontal, vertical</li> </ul>	• Study of the net of a cuboid	familiarity with the	polygon

	<ul> <li>and slant lines (free hand).</li> <li>Distinguishes between straight and curved lines.</li> <li>Identifies objects by observing their shadows.</li> </ul>	<ul><li>and it's shapes.</li><li>Tracing circles with different objects.</li></ul>	<ul> <li>conventions used in this.</li> <li>Draws intuitively the plan, elevation and side view of simple objects.</li> </ul>	<ul> <li>Point, line, vertex, ray exterior and interior angles.</li> <li>Identifies centre and radius and interior, exterior of a circle.</li> <li>Drawing lines of given lengths.</li> </ul>
Numbers (AChus	) Numbers (A( hus))	Normhann (42 hora)	Normaliana (40 kmz)	Numbers (40 kms)
DEVELOPING A SENSE OF	• Reads and writes numerals	Numbers (42 IIIS.) Number sequence up to 1000	NUMBERS AND OPERATIONS	Numbers (40 ms.)
NUMBERNESS, COUNTING AND	for numbers up to ninety	• Reads and writes 3-digit	• Reads and write Number up	• Finds place value in
<b>OPERATIONS OF NUMBERS 1 - 9</b>	nine.	numbers.	to 10,000	numbers up to lakh and ten
AND ZERO	• Expands a number with	• Expands a number w.r.t.	• Add & sub up to 10,000	lakhs.
• Observes object and makes	respect to place values.	place values.	• Writes multiplication facts.	• Multiply 10's, 100's,
collections of objects.	• Counts and regroups	• Counts in different ways –	• Tables upto $10 \times 10$ .	1000's
• Arranges the collection of	objects into tens and ones.	starting from any number.	• Multiply by 10's, 100's,	<ul> <li>Multiplication of 3 digit</li> </ul>
One to one correspondence	• Uses the concept of place	• Compares numbers.	10,000's	number by 2 digit numbers.
- One to one correspondence Matching and	value in the comparison of	• Forms greatest and smallest	• Multiplies two and three	• Uses informal and standard
• Introduction of number (1-	numbers.	numbers using given digits.	digit numbers using lattice	division algorithms by two-
5)	• Counts in various ways:	ADDITION AND SUBTRACTION	algorithm and the standard	digit number (5<20).
• Counts the number of	- Starting from any number.	• Adds and subtracts numbers	(column) algorithm by single	• Appreciates the role of
objects in a collection.	- Group counting etc.	Dy writing them vertically in the	algit and two algit.	in addition subtraction and
• Makes collection of objects	• Arranges numbers upto	following two cases:	• Divides a given number by	multiplication and division
corresponding to a specific	descending order	- without regrouping	ways	algorithms
number.	• Forms the greatest and the	- with regrouping	such as:	• Explains the meaning of
• Intriduction of numbers(6-9	) smallest two digit numbers	• Uses the place value in	- by repeated subtraction.	factors and multiples.
<ul> <li>Recognises and speaks</li> </ul>	with and without repetition	standard	- by grouping.	• Prime, Composite,
numbers from 1 to 9.	of given digits.	algorithm of addition and	– by using multiplication	• LCM,. HCF
• Uses numbers from 1 to 9 i	<sup>n</sup> • Indicates and identifies the	subtraction.	facts.	• Tests of divisibility for 3, 9
counting and	position of an object in a	<ul> <li>Solves addition and</li> </ul>	– Divide by single digit with	& 11.
comparison. (Real objects an	d line.	subtraction	and without remainder.	
repeated events like	Addition and Subtraction	problems in different	• Applies the four operations	
clapping to be used for	<ul> <li>Adds and subtracts two</li> </ul>	situations	to life situations.	

counting)	digit numbers by drawing	presented through pictures and	• Frames word problems.	
• Reads and writes numerals	representations of tens and	stories.	• Estimates sums, differences	
from 1 to 9.	ones without and with	• Frames problems for	and products of given	
<ul> <li>Adds and subtracts using</li> </ul>	regrouping.	addition and	numbers.	
real objects and pictures.	• Adds zero to a number and	subtraction facts.	• Even, odd	
• (Sum not to exceed 9 and	subtracts zero from a	• Estimates the sum of, and	• Test of divisible 2, 5 & 10	
difference to not to go below	number.	difference	• Tests of divisibility for 2, 5,	
1.)	• Observes the commutative	between, two given numbers.	& 10.	
• Adds and subtracts the	property of addition	MULTIPLICATION		
numbers using symbols '+'	through patterns.	• Explains the meaning of		
and '-'.	<ul> <li>Solves addition, subtraction</li> </ul>	multiplication (as repeated		
• Approaches zero through the	problems presented	addition).		
subtraction pattern (such	through pictures and verbal	• Identifies the sign of		
as $3 - 1 = 2$ , $3 - 2 = 1$ , $3 - 3 =$	description.	multiplication.		
0).	• Describes orally the	• Constructs the multiplication		
NUMBERS FROM (10 - 20)	situations that correspond to	tables		
• Introduction of 10	the given addition and	of 2, 3, 4, 5 and 10		
• Forms Number sequence	subtraction facts.	• Uses multiplication facts in		
from 10 to 20.	• Estimates the result of	situations.		
• Counts objects using these	addition and subtraction and	• Construct tables for 6, 7, 8, 9		
numbers.	compares the result with	• Multiplies two digit numbers		
• Groups objects into a group	another given number.	by single digit number using		
of 10s and single objects.	(Based on place values.)	standard algorithm and Lattice		
• Develops the vocabulary of	<b>P</b> REPARATION FOR	multiplication algorithm.		
group of 'tens' and 'ones'.	MULTIPLICATION AND DIVISION	DIVISION		
• Shows the group of tens and	<ul> <li>Discussion of situations</li> </ul>	• Explains the meaning of		
ones by drawing.	involving repeated addition	division from context of equal		
• Counts the number of tens	and situations involving	grouping and sharing.		
and ones in a given number.	equal sharing.	<ul> <li>Relates division with</li> </ul>		
• Writes number names ten to	<ul> <li>Activities of making equal</li> </ul>	multiplication.		
nineteen.	groups.	• Completes division facts:		
• Writes numerals for ten and		(Double digit by single digit)		
twenty.		- by repeated subtraction		
• Compares numbers upto 20.		– by grouping		

ADDITION AND SUBTRACTION		- by using multiplication		
(1000000000000000000000000000000000000		tables		
• Adds and subtracts numbers		10105.		
upto 20				
NUMBERS FROM 21 - 00				
• Writes numerals for Twenty				
• writes numerals for 1 wenty-				
Groups objects into tons and				
Groups objects into tens and				
ones.				
• Draws representation for				
groups of ten and ones.				
• Groups a number orally into				
tens and ones.				
	2.5	26		
MENTAL ARITHMETIC	MENTAL ARITHMETIC	MENTAL ARITHMETIC	MENTAL ARITHMETIC	MENTAL ARITHMETIC
• Number complement of 5	• Number complement of 10	• Adds and subtracts single	• Adds and subtracts	• Estimates sums,
• Addition facts up to 9	• Adds and subtracts single	digit numbers and two digit	multiples of 10 and 100,	differences,
• Adds two single digit	digit numbers mentally.	numbers mentally.	mentally.	products and quotients and
numbers mentally.	<ul> <li>Adds and subtracts</li> </ul>	• Doubles two digit numbers	<ul> <li>Completes multiplication</li> </ul>	verifies using
	multiples of ten mentally.	mentally (result not exceeding	facts by adding partial	approximation.
		two digits).	products, mentally	FRACTIONAL NUMBERS
			(e.g. $7 \times 6 = 5 \times 6 + 2 \times 6$ ).	<ul> <li>Finds the fractional part of</li> </ul>
			FRACTIONAL NUMBERS	a collection.
			<ul> <li>Identifies half, one fourth</li> </ul>	<ul> <li>Identifies equivalent</li> </ul>
			and three- fourths of a whole.	fractions.
			<ul> <li>Identifies the symbols,</li> </ul>	Estimates the degree of
			$\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{3}{4}$ .	closeness of a fraction to
			• Explains the meaning of $\frac{1}{2}$ ,	known fractions
			$^{1}\!$	$(\frac{1}{2}, \frac{1}{4}, \frac{3}{4} \text{ etc.})$
			<ul> <li>Identifies other Fractions</li> </ul>	• Compares unlike fractions.
			• Appreciates equivalence of	• Addition and subtraction of
			$2/4$ and $\frac{1}{2}$ ; and of $2/2$ , $3/3$ ,	unlike fractions
			4/4 and 1.	<ul> <li>Understanding of mixed</li> </ul>

			• Addition and subtraction of like fractions.	<ul> <li>and Improper fractions.</li> <li>Expresses a given fraction in decimal notation and vice versa.</li> <li>Uses decimal fractions in the context of units of length and money.</li> </ul>
Money (3 hrs.)	Money (3 hrs.)	Money (5 hrs.)	Money (5 hrs.)	Money (5 hrs.)
• Identifies common currency	• Identifies currency - notes	• Converts Rupee. to Paise	• Converts Rupees to Paise.	• Applies the four operations
Puts together small amounts	Puts together amounts of	money	using column addition and	involving problems
of money.	money not exceeding	Adds and subtracts amounts	subtraction with regrouping.	money.
	Rs 50/	using	• Uses operations to find	
	• Adds and subtracts small	column addition, and	totals, change, multiple costs	
	amounts of money mentally.	subtraction	and unit cost.	
	• I ransacts an amount using	• Makas rate shorts and hills	• Estimates roughly the totals	
	5-4 notes/coms.	• Makes fate charts and onis.	and total cost.	
Measurement (13 hrs.)	Measurement (13 hrs.)	Measurement (21 hrs.)	Measurement (21 hrs.)	Measurement (26 hrs.)
Length	Length	Length	Length	Length
• Distinguishes between near,	• Measures lengths &	• Appreciates the need for a	• Relates metre with cm, Kg	Relates commonly used
far, thin, thick, longer/taller,	distances along short & long	standard unit.	with gram, litre with ml.	larger and smaller units of
shorter, high, low.	paths using uniform (non-	• Measures length using	<ul> <li>Solves problems involving</li> </ul>	length, weight and volume
• Seriates objects by	standard) units, extends to	appropriate standard units of	length and distances.	and converts one to the
comparing their length.	longer lengths.	length by choosing between	• Estimates length of an	other. (Km, Quintal.)
Measures short lengths in		centimetres. And metres.	object and distance between	• Applies simple fractions to
terms of non-uniform units		• Estimates the length of given	two given locations.	quantities.
(in the context of games e.g.		object in standard units and		• Converts fractional larger
(marblegames')		• Uses a ruler		unit into complete smaller
• Estimates distance and		• Delates centimetre and		• Applies the four operations
• Estimates distance and		• Relates centimetre and		• Applies the four operations

length, and verifies using nonuniform units (e.g. hand span etc.)		metre.		<ul> <li>in solving problems</li> <li>involving length, weight and volume.</li> <li>5. Determines area and perimeter of simple geometrical figures.</li> <li>6. Appreciates volume of a solid body: intuitively and also by informal measurement.</li> <li>Uses addition and subtraction in finding time intervals in simple cases.</li> </ul>
<ul> <li>WEIGHT</li> <li>Compares between heavy and light objects.</li> <li>Time</li> <li>Distinguishes between events occurring in time using terms -earlier and later.</li> <li>Gets the qualitative feel of long &amp; short duration, of school days v/s holidays.</li> <li>Narrates the sequence of events in a day.</li> </ul>	<ul> <li>WEIGHT</li> <li>Compares two or more objects by their weight using. non-standard units</li> <li>Appreciates the need for a simple balance.</li> <li>Compares weights of given objects using simple balance.</li> <li>TIME</li> <li>Gets familiar with the days of the week and months of the year.</li> <li>Sequences the events occurring over longer periods in terms of dates/days.</li> </ul>	<ul> <li>WEIGHT</li> <li>Weighs objects using 1kg.</li> <li>Appreciates the conservation of weight.</li> <li>VOLUME</li> <li>Measures and compares the capacity of different containers in terms of a litre.</li> <li>Appreciates the conservation of volume.</li> <li>TIME</li> <li>Reads a calendar to find a particular day and date.</li> <li>Reads the time correct to the hour.</li> <li>Sequences the events chronologically.</li> </ul>	<ul> <li>WEIGHT</li> <li>Weighs objects using a balance and standard units.</li> <li>Determines sums and differences of weights.</li> <li>Estimates the weight of an object and verifies using a balance.</li> <li>VOLUME</li> <li>Measures volumes of given liquid using containers marked with standard units.</li> <li>Determines sums and differences of volumes.</li> <li>Estimates the volume of a liquid contained in a vessel and verifies by measuring.</li> <li>TIME</li> <li>Computes the number of weeks in a year.</li> </ul>	

Data Handling (6 hrs.) • Collects, represents and interprets simple data such as measuring the arm length or circumference of the head using a paper strip.	Data Handling (6 hrs.) • Collects data through measurement. • Represents the data followed by discussion (e.g. heights of children). • Collects and presents the data on birthdays. • Draws inferences from the data at the appropriate level.	<ul> <li>Data Handling (6 hrs.)</li> <li>Records data using tally marks.</li> <li>Collects data and represents in terms of pictograph choosing appropriate scale and unit for display through pictographs.</li> <li>Draws conclusions from the data by discussing with the teacher.</li> </ul>	<ul> <li>Correlates the number of days in a year with the number of days in each month.</li> <li>Reads clock time to the nearest hours and minutes.</li> <li>Expresses time, using the terms, 'a.m.' and 'p.m.'</li> <li>Estimates the duration of familiar events.</li> <li>Finds approximate time elapsed by (to the nearest hour) forward counting.</li> <li>Introduction to the Idea of rounding</li> <li>Computes the number of days between two dates.</li> <li>Data Handling (6 hrs.)</li> <li>Collects data and represents in the form of bar graphs;</li> <li>Draws Inferences by discussing with the teacher.</li> </ul>	<ul> <li>Data Handling (6 hrs.)</li> <li>Collects two-dimensional quantitative data. represents the data in the form of a table.</li> <li>Draws a bar graph or a pictograph to present a data.</li> </ul>
Patterns (10 hrs.) • Describes sequences of	<ul><li>Patterns (10 hrs.)</li><li>Observes and extends</li></ul>	Patterns (6 hrs.) • Identifies simple	Patterns (6 hrs.) • Identifies patterns in	<ul><li>Patterns (6 hrs.)</li><li>Identifies patterns in</li></ul>
simple patterns found in	patterns in sequence of	symmetrical shapes and	multiplication	square
shapes in the surroundings	shapes and numbers.	patterns.	and division: multiples of 9,	numbers, triangular

and in numbers, e.g. stamping	• Searches for patterns in	• Makes patterns and designs	• Casts out nines from a	numbers.
activity using fingers and	different ways of splitting a	from straight lines and other	given number to check if it is	• Relates sequences of odd
thumb.	number.	geometrical shapes.	a multiple of nine.	numbers between
• Completes a given sequence	<ul> <li>Creates block patterns by</li> </ul>	• Identifies patterns in the	<ul> <li>Multiplies and divides by</li> </ul>	consecutive
of simple patterns found	stamping thumbprints, leaf	numerals for odd and even	10s, 100s.	square numbers.
in shapes in the surroundings	prints, vegetable prints, etc.	numbers and in adding odd	<ul> <li>Identifies geometrical</li> </ul>	<ul> <li>Makes border strip and</li> </ul>
and in numbers.	• Creates patterns of regular	and even numbers.	patterns based on symmetry.	tiling patterns.
	shapes by stamping.	• Partitions a number in		
		different ways.		
		• Identifies patterns in his		
		surroundings		
		<ul> <li>Identifies patterns in</li> </ul>		
		multiplication tables of 2, 5,		
		and 10.		