

Mathematics Syllabus – Primary

Classes I to V

Class I	Class II	Class III	Class IV	Class V
Geometry (10 hrs.) SHAPES & SPATIAL UNDERSTANDING - Develops and uses vocabulary of spatial relationship (Top, Bottom, On, Under, Inside, Outside, Above, Below, Near, Far, Before, After) SOLIDS AROUND US - Collects objects from the surroundings having different sizes and shapes like pebbles, boxes, balls, cones, pipes, etc. - Sorts, Classifies and describes the objects on the basis of faces, edges, shapes, and other observable properties. - Observes and describes the way shapes affect movements like rolling and sliding. - Sorts 2 - D shapes	Geometry (13 hrs.) SHAPES & SPATIAL UNDERSTANDING <i>3-D and 2-D Shapes</i> - Observes objects in the environment and gets a qualitative feel for their geometrical attributes. - Identifies the basic 3-D shapes such as cuboid, cylinder, cone, sphere by their names. - Traces the 2-D outlines (faces) of 3-D objects. - Observes and identifies these 2-D shapes. - Describes intuitively the properties of these 2-D shapes. - Identifies and makes straight lines by folding, using straight edged objects, stretched strings and draws freehand with a scale. - Draws horizontal, vertical and slant lines (free hand). - Draw straight-line with a ruler. - Distinguishes between straight and curved lines. - Identifies objects by observing their shadows.	Geometry (16 hrs.) SHAPES & SPATIAL UNDERSTANDING - Identifies the side view, top view, front view of objects. - Study of the net of a cuboid and its shape. - Tracing circles, rectangles, squares by using different objects. - Making shapes with matchsticks. - Creates shapes/objects through paper folding and paper cutting. - Identifies 2-D shapes (square, rectangle, triangle, circle) without naming. - Tiles a given region using a given shape. - Distinguishes between shapes that tile and shapes that do not tile.	Geometry (16 hrs.) SHAPES & SPATIAL UNDERSTANDING - Identifies the side view, top view, front view of simple objects/ planes. - Identifies nets of cube and cuboid shaped boxes - Identifies cubes from given nets. - Identifies 2-D shapes viz., rectangle, square, triangle and circle by their names. - Making new shapes/objects using known regular shapes. - Making shapes on the geo-board/ dotted board. - Identifying regular 2D & 3D shapes in objects. - Describes the various 2-D & 3D shapes by identifying and counting their edges, corners and faces. - Draws shapes and patterns - free hand and with scale. - Explores perimeter of simple shapes intuitively and can calculate it. - Explores intuitively the reflections through inkblots, paper cutting and paper folding. - Estimation of area.	Geometry (16 hrs.) SHAPES & SPATIAL UNDERSTANDING - Draws the side view, top view, front view of simple objects/ plans. - Makes the shapes of cubes, cuboid using nets especially designed for this purpose. - Uses shapes to create different shapes (tangram) and different patterns - Identifies the shadows of the different given objects. - Identifies appropriate nets for cube and cuboid - Explores intuitively line symmetry in familiar 3-D objects expressed as 2 D shapes. - Explores intuitively rotations and reflections of familiar 2-D shapes. - Explores intuitively the perimeter and area of simple shapes. - Estimates area - Gets the feel of an angle through observation and paper folding. - Identifies right angles in the environment. - Identifies right angle and angles more than and less

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			- Measuring area using non standard units - Comparison of big and small non standard units.	than right angles. - Draws right angle and angles more than and less than right angles. - Division of complete angles into parts - Drawing shapes on dotted paper - Identifies and reads floor maps, routes/road maps - Draws simple floor maps of familiar locations - Point, line, vertex, ray - Identifies centre and radius of a circle.
Numbers (46 hrs.) DEVELOPING A SENSE OF NUMBERNESS, COUNTING AND OPERATIONS OF NUMBERS 1 - 9 AND ZERO - Observes object and makes collections of objects. - Arranges the collection of objects in order by - One to one correspondence - Matching - Introduction of number(1-5) - Counts the number of objects in a collection. - Makes collection of objects corresponding to a specific number. - Introduction of numbers (6-9) - Recognizes and speaks numbers from 1 to 9. - Uses numbers from 1 to 9 in counting and	Numbers (46 hrs.) - Reads and writes numerals for numbers up to ninety nine. - Counts and regroups objects into tens and ones. - Expands a number with respect to place values. - Uses the concept of place value in the comparison of numbers. - Counts in various ways: - Starting from any number. - Group counting etc. - Arranges numbers upto hundred in ascending and descending order. - Forms the greatest and the smallest two digit numbers with and without repetition of given digits. - Indicates and identifies the position of an object in a	Numbers (42 hrs.) NUMBER UPTO 1000 - Reads and writes up to 3-digit numbers. - Understands place value in 3-digit numbers. - Expands a number using place value. - Compares numbers. - Forms numbers using given digits. - Estimates numbers - Arrange the given numbers in ascending and descending order. ADDITION AND SUBTRACTION - Solves addition and subtraction problems in different situations presented through pictures and stories. - Adds and subtracts numbers	Numbers (40 hrs.) NUMBERS UPTO 10000 - Using word problems/ contextual situations, reads, writes and compares 2, 3-digit numbers. - Estimating 2, 3- digit numbers using the number line - Understands place value in 3-digit numbers. - Expands a number using place value. - Forms numbers using given digits. - Skip counting in terms of tens, hundreds and thousands ADDITION AND SUBTRACTION - Using word problems/ contextual situations for a additions and subtractions up to 999. (compare-combination and comparison types of word problems)	Numbers (40 hrs.) NUMBERS UPTO 1,00,000 - Using word problems/ contextual situations, reads, writes and compares 3,4,5-digit numbers. - Understands place value in numbers up to 99,999 - Expands a number using place value. - Forms numbers using given digits. - Skip counting in terms of hundreds, thousands and ten thousands ADDITION AND SUBTRACTION - Using word problems/ contextual situations for a additions and subtractions up to 99999. (compare-combination and comparison types of word problems)

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comparison. - Reads and writes numerals from 1 to 9. - Adds and subtracts using real objects and pictures. (Sum not to exceed 9 and difference not to go below 1.) - Adds and subtracts the numbers using symbols '+' and '-'. - Approaches zero through the subtraction pattern. NUMBERS FROM (10 - 20) - Introduction of 10 - Forms Number sequence from 10 to 20. - Counts objects using these numbers. - divides objects into a group of 10s and single objects. - Develops the vocabulary of group of 'tens' and 'ones'. - Shows the group of tens and ones by drawing. - Counts the number of tens and ones in a given number. - Writes number names ten to nineteen. - Writes numerals for ten to twenty. - Compares numbers upto 20. ADDITION AND SUBTRACTION (UPTO 20) - Adds and subtracts of numbers the total not exceeding 20.	line. ADDITION AND SUBTRACTION - Adds and subtracts two digit numbers by drawing representations of tens and ones without and with regrouping. - Adds zero to a number and subtracts zero from a number. - Solves addition, subtraction problems presented through pictures and verbal description. - Describes orally the situations that correspond to the given addition and subtraction facts. PREPARATION FOR MULTIPLICATION AND DIVISION - Discussion of situations involving repeated addition and situations involving equal sharing. - Activities of making equal groups. - Observe the cumulative property of multiplication	by writing them vertically and horizontally in the following two cases: - without regrouping. - with regrouping. - Introduction to different strategies of addition and subtraction - Uses the place value in standard algorithm of addition and subtraction. - Frames problems for addition and subtraction facts. MULTIPLICATION - Explains the meaning of multiplication (as repeated addition). - Identifies the sign of multiplication. - Constructs the multiplication tables of 2, 3, 4, 5 and 10 - Uses multiplication facts in situations. - Construct tables for 6, 7, 8, 9 - Multiplies two digit numbers by single digit number using standard algorithm and Lattice multiplication algorithm. DIVISION - Explains the meaning of division from context of equal grouping and sharing.	- Using word problems/ contextual situations for addition of 3 numbers. - Estimates sums and differences of 2,3 digit numbers through word problems and in sums. - Adds and subtracts 2,3-digit numbers using the empty number line. - Frames word problems. - Estimates the sum and difference between two given numbers MULTIPLICATION - Using word problems/ contextual situations revises multiplication facts up to 10×10. (array - rate product and grouping types of word problems) - Multiply by 10's and 100's - Using word problems/ contextual situations multiplies 2 and 3 digit numbers by single digit and two digit numbers using the standard (column) algorithm as well as the distributive law. (array product - rate product and grouping types of word problems) - Frames word problems. - Estimates products 2 digit by 1 digit and 2 digit, 3 digit by 1 digit	- Estimates sums and differences of 3,4 digit numbers through word problems and in sums. - Frames word problems. MULTIPLICATION - Multiply by 10's, 100's, 1000's and 10,000s - Using word problems/ contextual situations multiplies 3 digit number by 2 digit numbers using the standard (column) algorithm as well as the distributive law. (array product - rate product and grouping – Cartesian product types of word problems) - Frames word problems. - Estimates products of 3 digit by 1 digit and 3 digit by 2 digit numbers DIVISION - Using word problems/ contextual situations dividing 2-digit numbers by two digit numbers and three digit numbers by two digit numbers- with remainder and without remainder (using both equal grouping and sharing) - Understands the pattern which emerges from division by 10 - Uses standard division

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NUMBERS FROM 21 - 99 - Writes numerals for Twenty-one to Ninety nine. - Groups objects into tens and ones. - Draws representation for groups of ten and ones. - Groups a number orally into tens and ones.		- Relates division with multiplication. - Completes division facts: (Double digit by single digit) - by repeated subtraction - by grouping - by using multiplication tables.	DIVISION - Using word problems/ contextual situations dividing 2 and 3 digit numbers by one and 2-digit numbers - with remainder and without remainder (using both equal grouping and sharing) - Frames word problems. - Even and odd numbers - Estimates quotients for 2 and 3 digit numbers divided by single digit numbers. - Explores the relationship between multiplication and division using 2 and 1 digit numbers	algorithms for two-and three digit numbers divided by one and two-digit numbers - Frames word problems. - Even and odd numbers - Tests of divisibility for 2, 5 & 10. - Understanding of the multiples and factors - Estimates quotients - Explores the relationship between multiplication and division using 2 and 3 digit numbers
			FRACTIONAL NUMBERS - Identifies half, one fourth and three - fourths of a whole. - Identifies the symbols, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$. - Explains the meaning of $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$. - Identifies other fractions- $\frac{3}{2}$, $\frac{5}{2}$, $\frac{5}{4}$ - Appreciates equivalence of $\frac{2}{4}$ and $\frac{1}{2}$; and of $\frac{2}{2}$, $\frac{3}{3}$, $\frac{4}{4}$ and 1. - Comparison of like fractions - Addition and subtraction of like fractions intuitively	FRACTIONAL NUMBERS - Finds the fractional part of a collection/ object - Identifies equivalent fractions $\frac{2}{4}$ and $\frac{1}{2}$; $\frac{2}{6}$ and $\frac{1}{3}$, $\frac{2}{8}$ and $\frac{1}{4}$ - Compares like and unlike fractions(without LCM) - Addition and subtraction of like fractions - Applies simple fractions to measurements.
Day to Day Maths (3 hrs.) (Money, Length, Weight, Capacity) Identifies common currency	Day to Day Maths (3 hrs.) (Money, Length, Weight, Capacity) Identifies currency - notes	Day to Day Maths (5 hrs.) (Money, Length, Weight, Capacity, Space) word problems/ contextual	Day to Day Maths (5 hrs.) (Money, Length, Weight, Capacity, Space) word problems/ contextual	Day to Day Maths (5 hrs.) (Money, Length, Weight, Capacity, Space) word problems/ contextual

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notes and coins. • Puts together small amounts of money.	and coins. • Puts together amounts of money not exceeding Rs 10/- or Rs. 50/-. • Adds and subtracts small amounts of money mentally. • Transacts an amount using 3-4 notes/coins.	situations using more than one operations and/ or more than one concept and/or multiple stages of solving • estimation in daily life	situations using more than one operations and/ or more than one concept and/or multiple stages of solving • estimation in daily life	situations using more than one operations and/ or more than one concept and/or multiple stages of solving • estimation in daily life
Measurement (13 hrs.) (LENGTH, WEIGHT, CAPACITY) LENGTH: • Distinguishes between near, far, thin, thick, longer/taller, shorter, high, low. • Seriates objects by comparing their length. • Measures short lengths in terms of non-standard units (e.g. hand span etc.) WEIGHT • Compares between heavy and light objects. CAPACITY • Comparison of capacity of vessels	Measurement (13 hrs.) (LENGTH, WEIGHT, CAPACITY) LENGTH: • Measures lengths & distances along short & long paths using uniform non-standard units (Foot). WEIGHT • Compares two or more objects by their weight using non-standard units • Appreciates the need for a simple balance. • Compares weights of given objects using simple balance. CAPACITY • Comparison of capacity of vessels	Measurement (21 hrs.) (LENGTH, WEIGHT, CAPACITY) LENGTH: • Appreciates the need for a standard unit. • Measures length using appropriate standard units of length by choosing centimeters. • Uses a scale for measuring WEIGHT • Weighs objects using 1kg, 2 kg, 5 kg, 10 kg. • Estimates the weight of an object and verifies using a balance. • Identifies which is lighter or weightier in given things. CAPACITY • Measures and compares the capacity of different containers in terms of nonstandard units. • Appreciates the conservation of capacity. • Solves the problems on 'capacity' (in non standard units)	Measurement (21 hrs.) (LENGTH, WEIGHT, CAPACITY) LENGTH: • Identifies meter and cm lengths • Relates meter with cm. • Converts meter into cm. • Measures length in meters, cm's and inches. • Estimates length of an object and distance between two given locations. • Solves problems involving length and distances in <i>m</i> and <i>cm</i> . WEIGHT • Understands weight in terms of <i>kg</i> and <i>g</i> , using actual weights and their combinations • Relates Kg with gram • Weighs objects using a balance and standard units. • Appreciates the conservation of weight. • Estimates the weight of an object. Verifies using a balance. • Solves problems involving	Measurement (26 hrs.) (LENGTH, WEIGHT, CAPACITY) • Relates commonly used larger and smaller units of length, weight and capacity and converts one to the other. • Relates feet to inches. • Relates km to m; liter-ml; kg-gram; quintal-kg • Applies simple fractions to quantities. • Converts fractional larger unit into complete smaller units. • Applies the four operations in solving problems involving length, weight and capacity. • Determines intuitively area and perimeter. • Estimated length, weight, capacity of a solid body: intuitively and also by informal measurement. • Understands the concept of area

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			weights using <i>kg</i> and <i>g</i> . CAPACITY • Understands capacity in terms of <i>l</i> and <i>ml</i> • Relates liter with ml. • Measures capacity of given liquid using containers marked with standard units. • Estimates the capacity of a liquid .Verifies by measuring. • Determines sums and differences of capacity. • Solves problems involving capacity in <i>l</i> and <i>ml</i>	
Time • Distinguishes between events occurring in time using terms -earlier and later. • Narrates the sequence of events in a day.	TIME • Gets familiar with the days of the week and months of the year. • Sequences the events occurring over longer periods in terms of dates/days.	TIME • Reads a calendar to find a particular day and date. • Reads the time correct to the hour. • Sequences the events chronologically. • Compares the duration of two different events. • Identifies the patterns in a calendar.	TIME • Appreciates the difference in time in terms of minutes, hours, days, weeks and months. • Reads the calendar, identifies and correlates the number of days, weeks, months and years. • Understands a leap year. • Reads clock time to the hours and minutes • Solves problems on 'time'	TIME • Appreciates the difference in time in terms of seconds, minutes, hours, days, months and years. • Reading time in hour, minutes and seconds • Converts hours into minutes and minutes into seconds • Expresses time, using the terms, 'a.m.' and 'p.m.' • Understanding 24 hour clock (Bus and Railway timetable) and conversion between 12 hour and 24 hour clocks • Computes the number of days between two dates. • Uses addition and subtraction in finding time intervals in simple cases.

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Data Handling (6 hrs.) • Collects data • Records data in a table • Draws inferences from data.	Data Handling (6 hrs.) • Collects data • Records data in a table • Draws inferences from data.	Data Handling (6 hrs.) • Collects data • Records data in a table • Reads data given in the form of a pictograph • Records data using tally marks • Draws conclusions from the data.	Data Handling (6 hrs.) • Reading data using a pictograph • Reading data using a bar graph • Recording data using tally marks	Data Handling (6 hrs.) • Reading data using a pictograph • Understands the importance of an appropriate scale for pictograph • Reading data using bar graphs • Organizing data using tally marks using tally marker. • Making bar graphs based on data (without scale)
Patterns (10 hrs.) • Describes sequences of simple patterns found in shapes in the surroundings and in numbers, e.g. stamping activity using fingers and thumb. • Completes a given sequence of simple patterns found in shapes in the surroundings and in numbers.	Patterns (10 hrs.) • Observes and extends patterns in sequence of shapes and numbers. • Searches for patterns in different ways of splitting a number. • Creates block patterns by stamping thumbprints, leaf prints, vegetable prints, etc. • Creates patterns of regular shapes by stamping.	Patterns (6 hrs.) • Identifies simple symmetrical shapes and patterns. • Makes patterns and designs from straight lines and other geometrical shapes. • Identifies patterns in his Surroundings • Symmetry through paper folding, paper cuttings • Complete a symmetric picture using mirror.	Patterns (6 hrs.) • Identifies, carries forward and makes visual patterns. • Carries forward patterns in numbers based on addition, subtraction, multiplication and division	Patterns (6 hrs.) • Identifies patterns in square numbers, triangular numbers. • Identifies patterns in multiplication and division. • Numbers between consecutive square numbers. • Makes border strip and tiling patterns. • Identifies the patterns in the multiples of 9. • Draws symmetric pictures and symmetric axis. • Identifies the block or unit of the pattern.