ACADEMIC STANDARDS AND LEARNING INDICATORS

CLASS : IV MATHS

Area	Key concepts	AS_1 (Problem Solving)	AS_2 (Reason & Proof)	AS_3 (Communication)	AS_4 (Connection)	AS_5 (Representation)
Geometry	• Shapes and special understandings	• Pupil can identify 3D shapes in objects • Can identify edges and corners of 3D shapes • Can identify the side view, top view, front view of 3D-objetcs • Can identify the nets of cuboid and cube shaped boxes • Can identify 2D-shapes in objects (3D) • Can understand the meaning perimeter and solve the problems regarding perimeter of 2D shapes	• Pupil can distinguishes among 3D-shapes based on their ability to roll and slide • Can give reasons for the sequences for patterns	• Pupils can describes the 3D shapes objects features. • Can explain about the pattern • Can give example for 3D – objects (i.e. cube, cuboid)		• Make picture using known 2D shapes • Can make shapes using dotted board • Pupil can explore line symmetry through reflective paper cutting and paper folding etc • Can draw the nets for cube and cuboid.
NUMBERS	• Numbers up to 1000	• Pupils can solve the problems related to 2-3 digit numbers using word problems • Can expand 2,3 digit numbers by using place values	• Can compare 2 and 3 digit numbers and give reasons • Can arrange the given numbers in ascending and descending order	• Can read and write 2,3 digit numbers		• Represents 2-3 digits numbers on number line • Represents the 2-3 digit numbers through objects and pictures (currency)

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	• ADDITION & SUBTRACTION	• Can solve addition and subtraction problems up to 999 in different situations (through contextual situations, pictures word problems and numerals) • Can solve the addition and subtraction problems horizontally and vertically(in different methods)	• Can estimate sums and differences of 2,3 digit numbers and give reasons • Can verify the results of addition or subtraction of given numbers	• Can write a situation / problem regarding addition and subtraction in mathematical expression by using symbols. • Can frame new word problems sclated to addition and subtraction	• can solve the problems having both addition and subtractions	• can represent the addition and subtraction on number line.
	• Multiplication	• Can solve the problems related to multiplications of 1,2 digit numbers with 1 & 2 digit values • Can solve the multiplication problems in different methods (using standard algorithm, distributive law) • Can multiply the numbers 2 & 3 digit numbers by 10s and 100s	• Estimate the results of multiplication and give reasons	• Can write a situation / problem regarding multiplication in the mathematical expression by using symbols. • Can make word problems on multiplications	• Can solve multiplication problems involving different concepts and operations.	•
	• Divisions	• Can solve the problems on division of 2 & 3 digit numbers by 1 & 2 digit values (with reminder and without reminder)	• Can estimate the result of the division problems without doing the process, and verify it	• Can write the conceptual problems into mathematical form • Can make new problems on	• Can identify the relation between division and multiplication • Can solve the problems on	

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				division (grouping & equal sharing) • Can explain the division by using the terms devisor, divided quotient & reminder	division involving concepts and different situations.	
	• Fractional numbers	• Can identify the half, one forth, and three forth of a hole. • Can identify other fractions such as 3/2, 5/2, 5/4 etc… • Can add and subtract like fractions (institutively)	• Can compare the fractions 1/2, 1/4 and 3/4 and give reasons.	• Can write fractional numbers half (1/2), one forth (1/4) and three forth (3/4) of a hole. • Explain the meaning of 1/2, 1/4, 3/4	• Can understand the relationship between division and fraction	• Can represent the fractions 1/4, 1/2, ¾ through pictures.
	• Patterns	• Can identify the sequence in the given number patterns and carry forward the pattern	• Find the sequence in the pattern and give proper reason. • Can verify the given pattern.	• Can create new patterns on their own.		
Day to day mathematics	• Involving in the daily life situations regarding money, length, capacity, weight and space.	• Can solve the problems of day to day life situations selected to money, length, capacity, weight and space etc.	• Can estimate the results of day to day life problems and give appropriate reasons.	• Can create word problems related to day to day life situations involving different concepts / situations.	• Solves day to day life problems using different methods and concepts (using more than 2 concepts / multiple stage of solving	

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Measurement	• Length	• Can solve the problems related with length in different contextual situational problems in different methods. • Can measure the lengths of the objects in m and cms	• Can estimate length of the objects and distance between to given location from a point	• Can express the lengths of the objects in different units cm,m • Can convert the units of length meter to centimeter • Can create new problems / word problems on lengths	• Can solve the problems on lengths involving various concepts(+, -, ÷) in day to day life	
	• Weight	• Can solve the problems involving weight using kgs and grams.	• Can estimate weights of an object and verifies it using a balance • Can identify the relationship between kg and gram	• Can use and convert kgs to grams (vice versa) • Can appreciate the conservation of weights • Can create new problems on weight	• Can solve the problems on weight involving various concepts / operation (+, -, x, ÷) in day to day life.	
	• Capacity	• Can solve the problems involving capacity using liter and ml.	• Can estimate capacity of a container and verifies it by measuring • Can identify relationship between liter andml.	• Can use and convert liter and ml (vice versa) • Can appreciate the conservation of capacity • Can create new problems on capacity	• Can solve the problems on capacity involving various concepts / operations (+, - , x, ÷) in day to day life.	

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	• Time	• Can solve the problems involving time. • Can select the date to the day on the calendar.	• Can understand the selection slip between hours and minutes. • Can identify correct time in the given clocks and gives reason. • Can distinguish between gen year and leaf year.	• Can appreciate the conservation of time. • Can create new problems on time.	• Can solve the problems on time involving various concepts / operations.	• Can represent the time in clock (hours – minutes).
Data Handling	• Collecting data and organizing data (using tally marks). • Reading bar graph and picto graph.	• Can organize the raw data into classified data. • Can solve the problem / interpretation of data and draw conclusions.	• Can analyse the data.	• Can explain inferences of the given data.	• Can use concept of picto graphs in daily life situations.	• Can represent the data in tally marks. • Can read and represent the data in tabular form. • Can read the bar graphs. • Can read the picto graphs.

'Problem Solving' means engaging in a task for which the solution method is not known in advance. In order to find a solution, one must draw on one's knowledge, and through this process, one develops new mathematical understanding. Solving problems is not only a goal of learning mathematics but also a major means of doing so. When one arrives at the correct solution there is naturally a great deal of satisfaction and sense of self-confidence which gets generated. And that, surely, is one of the things that any teacher is trying to inculcate in a student.