



**. Mathematics → Classes IV**

Mathematics is about a certain way of thinking and reasoning.

**Class IV →**

**Geometry**

**SHAPES & SPATIAL UNDERSTANDING**

- ❖ Draws a circle free hand and with compass.
- ❖ Identifies centre, radius and diameter of a circle.
- ❖ Uses Tangrams to create different shapes.
- ❖ Tiles geometrical shapes: using one or two shapes.
- ❖ Chooses a tile among a given number of tiles that can tile a given region both intuitively and experimentally.
- ❖ Explores intuitively the area and perimeter of simple shapes.
- ❖ Makes 4-faced, 5-faced and 6-faced cubes from given nets especially designed for the same.
- ❖ Explores intuitively the reflections through inkblots, paper cutting and paper folding.
- ❖ Reads and draws 3-D objects, making use of the familiarity with the conventions used in this.
- ❖ Draws intuitively the plan, elevation and side view of simple objects.

**NUMBERS**

**NUMBERS AND OPERATIONS**

- ❖ Writes multiplication facts.
  - ❖ Writes tables upto  $10 \times 10$ .
  - ❖ Multiplies two and three digit numbers using lattice algorithm and the standard (column) algorithm.
  - ❖ Divides a given number by another number in various ways such as: - by drawing dots. - by grouping. - by using multiplication facts. - by repeated subtraction.
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- ❖ Applies the four operations to life situations.
- ❖ Frames word problems.
- ❖ Estimates sums, differences and products of given numbers

### MENTAL ARITHMETIC

- ❖ Adds and subtracts multiples of 10 and 100, mentally.
- ❖ Completes multiplication facts by adding partial products, mentally (e.g.  $7 \times 6 = 5 \times 6 + 2 \times 6$ ).

### FRACTIONAL NUMBERS

- ❖ Identifies half, one fourth and three- fourths of a whole.
- ❖ Identifies the symbols- $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$
- ❖ Explains the meaning of  $\frac{1}{2}$ ,  $\frac{1}{4}$  and  $\frac{3}{4}$ .
- ❖ Appreciates equivalence of various fractions

### MONEY

- ❖ Converts Rupees to Paise.
- ❖ Adds and subtracts amounts using column addition and subtraction with regrouping.
- ❖ Uses operations to find totals, change, multiple costs and unit cost.
- ❖ Estimates roughly the totals and total cost.

### Measurement

#### LENGTH

- ❖ Relates metre with centimetre;
- ❖ Converts metre into centimetres and vice versa.
- ❖ Solves problems involving length and distances.
- ❖ Estimates length of an object and distance between two given locations.

#### WEIGHT

- ❖ Weighs objects using a balance and standard units.
- ❖ Determines sums and differences of weights.
- ❖ Estimates the weight of an object and verifies using a balance.

#### VOLUME

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- ❖ Measures volumes of given liquid using containers marked with standard units.
- ❖ Determines sums and differences of volumes.
- ❖ Estimates the volume of a liquid contained in a vessel and verifies by measuring.

### **TIME**

- ❖ Computes the number of weeks in a year.
- ❖ Correlates the number of days in a year with the number of days in each month.
- ❖ Justifies the reason for the need of a leap year.
- ❖ Reads clock time to the nearest hours and minutes.
- ❖ Expresses time, using the terms, 'a.m.' and 'p.m.'
- ❖ Estimates the duration of familiar events.
- ❖ Finds approximate time elapsed
- ❖ by (to the nearest hour) forward counting. • Computes the number of days between two dates.

### **Data Handling**

- ❖ Collects data and represents in the form of bar graphs;
- ❖ Draws Inferences by discussing with the teacher.

### **Patterns**

- ❖ Identifies patterns in multiplication and division: multiples of 9,
  - ❖ Casts out nines from a given number to check if it is a multiple of nine.
  - ❖ Multiplies and divides by 10s, 100s.
  - ❖ Identifies geometrical patterns based on symmetry.
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