

**Learning Objectives**

By the end of this lesson, students will be able to:

- Add numbers upto 7 digits.
- Solve addition story sums.
- Know the place values of the numbers to ten Lakhs.
- Use the addition principles to frame story sums.

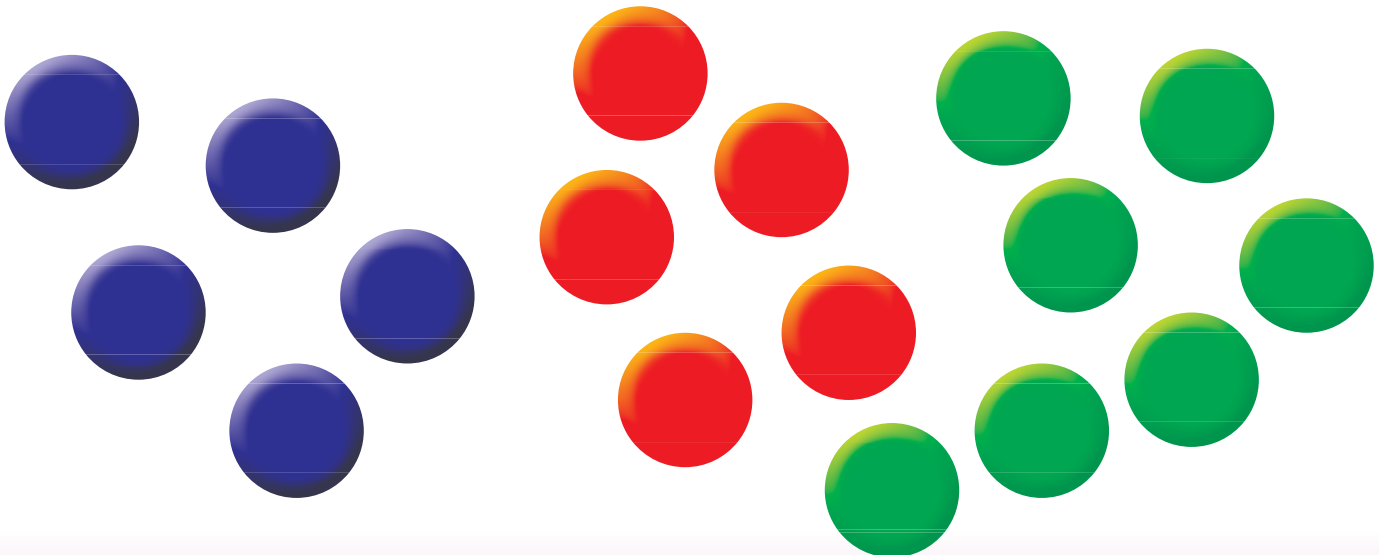
**Warm-Up**

Count and write the total number of dots.

Add blue dots with green.- _____

Add green dots with red. - _____

Add blue, green and red dots. - _____





In class III, we have learnt the addition of numbers upto 4-digits.

Now, we will extend it upto
7-digits



Solved Examples



Addition Without Carry

Example 1 : Add: 103731, 235014 and 440253

Solution :

	L	T	Th	Th	H	T	O
	1	0	3	7	3	1	
	2	3	5	0	1	4	
+	4	4	0	2	5	3	
	7	7	8	9	9	8	

Steps:

- Step 1 :** Add ones $1 + 4 + 3 = 8$ ones
Step 2 : Add tens $3 + 1 + 5 = 9$ tens
Step 3 : Add hundreds $7 + 0 + 2 = 9$ hundreds
Step 4 : Add thousands $3 + 5 + 0 = 8$ thousands
Step 5 : Add ten thousands $0 + 3 + 4 = 7$ ten thousands
Step 6 : Add lakhs $1 + 2 + 4 = 7$ lakhs

Sum = 778998



**Teacher's
Note:**

Ask kids to add the total number of alphabets in their names to the total alphabets in their friend's name.



Example 2 :

Add: 4351062, 1210513, 3010202 and 1400021

Solution :

	TL	L	T-Th	Th	H	T	O
	4	3	5	1	0	6	2
	1	2	1	0	5	1	3
	3	0	1	0	2	0	2
+	1	4	0	0	0	2	1
	9	9	7	1	7	9	8



Steps:

- Step 1** : Add ones $2 + 3 + 2 + 1 = 8$ ones
- Step 2** : Add tens $6 + 1 + 0 + 2 = 9$ tens
- Step 3** : Add hundreds $0 + 5 + 2 + 0 = 7$ hundreds
- Step 4** : Add thousands $1 + 0 + 0 + 0 = 1$ thousands
- Step 5** : Add ten thousands $5 + 1 + 1 + 0 = 7$ ten thousands
- Step 6** : Add lakhs $3 + 2 + 0 + 4 = 9$ lakhs
- Step 7** : Add ten lakhs $4 + 1 + 3 + 1 = 9$ ten lakhs

Sum = 9971798



Addition With Carry

Example 3 :

Add: 364291, 283723 and 786928

Solution :

	L	T-Th	Th	H	T	O
	2	1	1	1	1	
	3	6	4	2	9	1
	2	8	3	7	2	3
+	7	8	6	9	2	8
	1	4	3	4	9	4



Normally, while doing calculations we do not write place value headings.

Steps:

- Step 1** : Add ones
 $1 + 3 + 8 = 12$ ones
 $= 1$ ten + 2 ones
 (write carry 1 to the tens column and 2 under ones column)



Step 2 : Add tens

$$\begin{aligned} 1 (\text{carried}) + 9 + 2 + 2 &= 14 \text{ tens} \\ &= 1 \text{ hundred} + 4 \text{ tens} \end{aligned}$$

(write 1 carry to the hundreds column and 4 under tens column)

Step 3 : Add hundreds

$$\begin{aligned} 1 (\text{carried}) + 2 + 7 + 9 &= 19 \text{ hundreds} \\ &= 1 \text{ thousand} + 9 \text{ hundreds} \end{aligned}$$

(write 1 carry to the thousands column and 9 under hundreds column)

Step 4 : Add thousands

$$\begin{aligned} 1 (\text{carried}) + 4 + 3 + 6 &= 14 \text{ thousands} \\ &= 1 \text{ ten thousand} + 4 \text{ thousands} \end{aligned}$$

(write 1 carry to the ten thousands column and 4 under thousands column.)

Step 5 : Add ten thousands

$$\begin{aligned} 1 (\text{carried}) + 6 + 8 + 8 &= 23 \text{ ten thousands} \\ &= 2 \text{ lakhs} + 3 \text{ ten thousands} \end{aligned}$$

(write 2 carry to the lakhs column and 3 under ten thousands column)

Step 6 : Add lakhs

$$\begin{aligned} 2 (\text{carried}) + 3 + 2 + 7 &= 14 \text{ Lakhs} \\ &= 1 \text{ ten lakh} + 4 \text{ lakhs} \end{aligned}$$

(write 14 under lakhs column)

$$\text{Sum} = 1434942$$

Example 4 : Add: 384651, 1240259, 904259 and 425627

Solution :

	TL	L	T-Th	Th	H	T	O
	1	1	1	1	1	2	
		3	8	4	6	5	1
	1	2	4	0	2	5	9
		9	0	4	2	5	9
+		4	2	5	6	2	7
	2	9	5	4	7	9	6



Steps:

Step 1 : Add ones

$$\begin{aligned} 1 + 9 + 9 + 7 &= 26 \text{ ones} \\ &= 2 \text{ ten} + 6 \text{ ones} \end{aligned}$$

(write carry 2 to the tens column and 6 under ones column)



Step 2 :

Add tens

$$\begin{aligned} 2 \text{ (carried)} + 5 + 5 + 5 + 2 &= 19 \text{ tens} \\ &= 1 \text{ hundred} + 9 \text{ tens} \end{aligned}$$

(write 1 carry to the hundreds column and 9 under tens column)

Step 3 :

Add hundreds

$$\begin{aligned} 1 \text{ (carried)} + 6 + 2 + 2 + 6 &= 17 \text{ hundreds} \\ &= 1 \text{ thousand} + 7 \text{ hundreds} \end{aligned}$$

(write 1 carry to the thousands column and 7 under hundreds column)

Step 4 :

Add thousands

$$\begin{aligned} 1 \text{ (carried)} + 4 + 0 + 4 + 5 &= 14 \text{ thousands} \\ &= 1 \text{ ten thousand} + 4 \text{ thousands} \end{aligned}$$

(write 1 carry to the ten thousands column and 4 under thousands column.)

Step 5 :

Add ten thousands

$$\begin{aligned} 1 \text{ (carried)} + 8 + 4 + 0 + 2 &= 15 \text{ ten thousands} \\ &= 1 \text{ lakhs} + 5 \text{ ten thousands} \end{aligned}$$

(write 1 carry to the lakhs column and 5 under ten thousands column)

Step 6 :

Add lakhs

$$\begin{aligned} 1 \text{ (carried)} + 3 + 2 + 9 + 4 &= 19 \text{ lakhs} \\ &= 1 \text{ ten lakh} + 9 \text{ lakhs} \end{aligned}$$

(write 1 carry to the ten lakhs column and 9 under lakhs column)

Step 7 :

Add ten lakhs

$$\begin{aligned} 1 \text{ (carried)} + 1 &= 2 \text{ ten Lakhs} \\ \text{(write 2 under ten lakhs column)} \end{aligned}$$

$$\text{Sum} = 2954796$$



Finding Missing Digits

Example 5 : Find the missing digits:

	7	2		5
		6	2	2
+	3		9	1
	1	2	6	5



Facts to Know

Additions were first devised by Brahmagupta of India. This was known during medieval Europe as "Modus Indorum" or Method of the Indians.



Solution : Add ones:

$$5 + 2 + 1 = 8 \text{ ones}$$

Add tens:

$$2 + 9 = 11 \text{ tens} = 1 \text{ hundred} + 1 \text{ ten}$$

But, in the sum there are 5 tens

$\therefore$ Missing digit must be 4.

Add hundreds:

$$1 + 2 + 6 = 9 \text{ hundreds}$$

But, in the sum there are 6 hundreds

$\therefore$ Missing digit must be 7 with carried over 1.

Add thousands:

$$1 + 7 + 3 = 11 \text{ thousands} = 1 \text{ ten thousand} + 1 \text{ thousand}$$

But, in the sum there are 2 thousands

$\therefore$ Missing digit must be 1.

1	1			
7	2	4	5	
1	6	2	2	
+	3	7	9	1
1	2	6	5	8

Exercise 3.1



1. Add:

(a)

2	3	5	0	2
+	1	3	2	1

(b)

7	6	5	2	3
+	2	3	4	7

(c)

9	8	6	7	2	4
7	3	4	0	9	3
+	8	5	3	2	0

(d)

2	8	7	6	9	5
4	3	2	0	2	
+	9	7	0	8	2

(e)

7	6	5	4	3	2
3	9	0	2	6	
5	9	8	8		
+	2	7	6	4	0

(f)

8	3	3	4	0	5
6	7	5	9	8	7
2	8	6	1	4	3
+	9	8	7	6	2



2. Arrange the following numbers in columns and then find the sum:

- (a) 734562, 235973, 186429
 (b) 934562, 734009, 5462
 (c) 8346562, 9264, 98395, 10645
 (d) 228465, 746625, 7326, 9834
 (e) 36125, 421020, 13596, 73102
 (f) 54320, 731021, 71020, 240219



3. Fill the missing digits:

(a)

2	8		6
5		2	5
+		5	8
1	4	3	6

(b)

7		3	4
2	2		6
+		3	5
1	5	8	3

4. Find the sum of the largest 4-digit number and smallest 5-digit number.



Properties of Addition

1. Order Property of Addition:

If any two numbers are added in any order, then their sum remains the same.

For example, $43562 + 28395 = 71957$

$$28395 + 43562 = 71957$$

So, $43562 + 28395 = 28395 + 43562$



2. Grouping Property of Addition:

If three or more numbers are added in different groups, then their sum remains the same in all cases.

$$(342 + 242) + 179 = 342 + (242 + 179)$$

$$584 + 179 = 342 + 421$$

$$763 = 763$$



3. Additive Property of Zero

When zero is added to a number, then the value of the number does not change.

For example,

$$46528 + 0 = 46528$$

$$0 + 76459 = 76459$$



4. Additive Property of One:

When one is added to a number, then it gives the successor of the number as its sum.

For example,

$$7342 + 1 = 7343$$



Exercise 3.2

1. Fill in the blanks:

(a) $7642 + 9683 = \dots\dots\dots + 7642$

(b) $10289 + 25468 = 25468 + \dots\dots\dots$

(c) $(38594 + 28679) + 34702 = \dots\dots\dots + (28679 + 34702)$

(d) $28679 + (54709 + 87679) = (28679 + \dots\dots\dots) + 87679$

(e) $76429 + \dots\dots\dots = 76429$

(f) $\dots\dots\dots + 28762 = 28762$

(g) $48679 + 0 = \dots\dots\dots$



Quick Tip

Use the compensation method for adding large numbers, "Compensation" is where you round up a number (to make adding easier) and then take away the extra after you have added.

For e.g.

$$5992 + 126$$

$$= 6000 + 126$$

$$= 6126 - 8$$

$$= 6118$$





Word Problems

Solved Examples



Example 1 : There are 48651 men, 34605 women and 29586 children in a town. What is the population of that town?

Solution :

		2	1	1	1	← Carry	
Number of men	=	4	8	6	5	1	
Number of women	=	3	4	6	0	5	
Number of children	=	+	2	9	5	8	6
Total population of a town	=	1	1	2	8	4	2



Hence, the total population of that town is 1,12,842.

Example 2 : There are 10569 computer books, 36642 mathematics books, 28469 hindi books and 48679 english books in a school library. What is the total number of books in the school library?

Solution :

		2	2	2	2	← carry	
Number of computer books	=	1	0	5	6	9	
Number of mathematics books	=	3	6	6	4	2	
Number of hindi books	=	2	8	4	6	9	
Number of english books	=	+	4	8	6	7	9
Total number of books	=	1	2	4	3	5	9



Hence, the total number of books in the school library is 1,24,359.

Example 3 : A refrigerator manufacturing factory produced 28465 refrigerators in January, 43509 refrigerators in February and 70402 refrigerators in March. How many refrigerators did the factory produce altogether in these three months?



Solution :	Number of refrigerators produced in January =	2	8	4	6	5	
	Number of refrigerators produced in February=	4	3	5	0	9	
	Number of refrigerators produced in March =	+	7	0	4	0	2
	Total number of refrigerators produced in these three months =	1	4	2	3	7	6

Hence, the total number of refrigerators produced in these three months is 1,42,376.

Framing Word Problems

Framing word problem means to design or write the word problem according to the given facts.

Example 4 : Frame the word problems for each of the following addition facts:

- (a) $2652 + 3879 = 6531$
 (b) $18260 + 54389 = 72649$

Solution: (a) Rajat spent ₹ 2652 and Sona spent ₹ 3879 on shopping. How much money did they both spend together?
 (b) Shreya purchased a tablet costing ₹ 18260 and a notebook costing ₹ 54389. How much money did she spend in all?



Think Wisely

Aakash's age is more than 25 years, but less than 30 years. His age is in an odd number and is a multiple of 3.
 Aakash is $25 + \underline{\hspace{2cm}}$ years old.

Exercise 3.3

Solve the following word problems:

1. A factory produced 28679 cold-drinks in January. 30729 cold-drinks in February and 19809 cold-drinks in March. How many cold-drinks did the factory produced altogether in these three months?
2. A number exceeds 1280596 by 4829. What is the number?

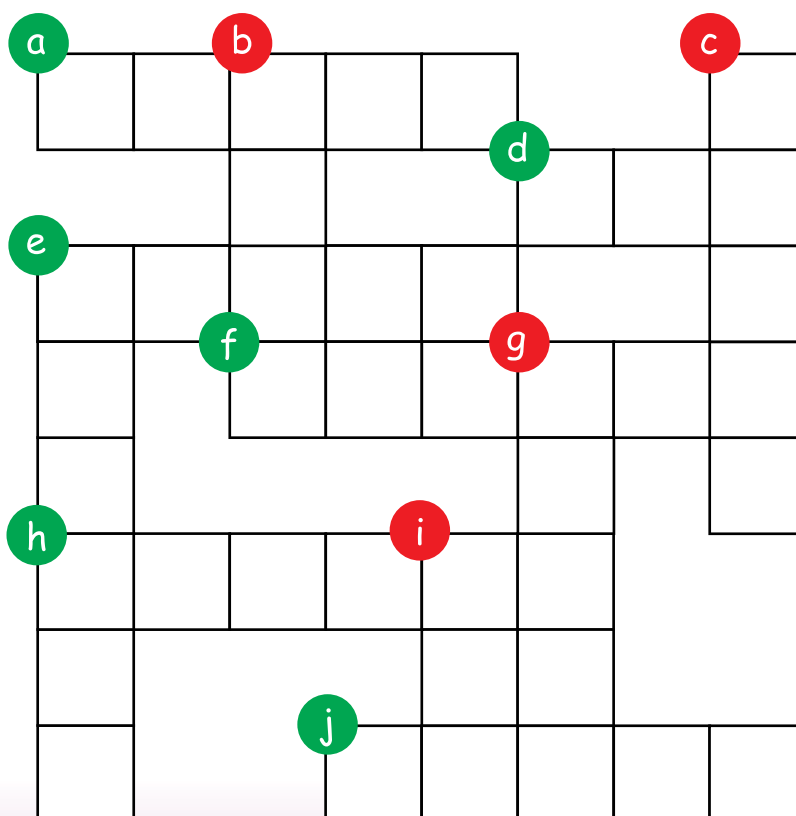


3. Mr. Verma deposits ₹ 18,620, ₹ 30,500 and ₹ 80,000 in the bank in three successive weeks. How much money does he deposit in the bank in these three successive weeks?
4. Raj travels 86,430 km by aeroplane, 50,589 km by train and 30,469 km by helicopter. How much distance did he cover altogether?
5. Mr. Bansal spent ₹ 42,500 on LED, ₹ 40,560 on laptop and ₹ 42,999 on mobile phone. How much money did he spend in all?
6. In an examination, 42569 students passed. If the number of failures be 10425, find the number of students who appeared in the examination.
7. **Frame the word problems for each of the following addition facts:**
 - (a) $2867 + 59463 = 62330$
 - (b) $15970 + 38999 + 28050 = 83019$
 - (c) $10967 + 59000 + 2817 = 72784$



Mental Maths

Solve the puzzle.



Across	Down
(a) $83457 + 0$	(b) $4284 + 1$
(d) $1 + 508$	(c) successor of 99998
(e) $62776 + 100$	(e) $587476 + 100000$
(f) $534768 + 1$	(g) $67777 + 10000$
(h) $455457 + 1000$	(i) $32547 + 564 = \underline{\hspace{2cm}} + 32547$
(j) $74770 + 10$	



Materials required: 2 Sets of number cards from 0 to 9.

Steps:

1. The teacher will divide the class into groups of five students.
2. Shuffle the number cards. Students will take turns drawing a card each.
3. The group will make a 5 - digit number from it.
4. Repeat the above steps with another group.
5. Now, the groups will add these 2 numbers.
6. The group will be able to add up the numbers first will be the winner.

Example Group 1: 6 4 3 2 1

Group 2: + 5 9 0 8 7

12 3 4 0 8

