

# 3

## Addition of Numbers

**We'll cover the following key points:**

- Addition
- Addition of 4-digit Numbers (Without Carrying)
- Addition of 4-digit Numbers (With Carrying)
- Properties of Addition
- Problems on Addition

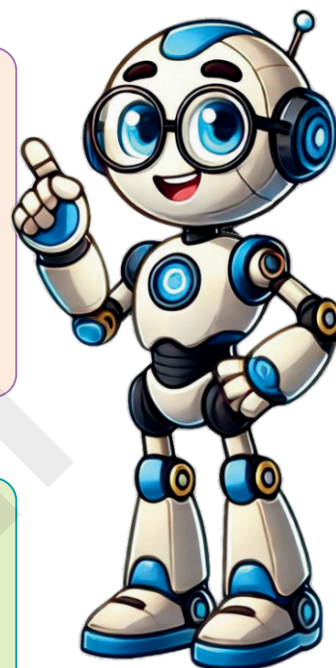
**Do you Remember fundamental concept in previous class.**

**In class 2<sup>nd</sup> we learnt**

- Addition of 2 Digit Number
- Properties of Addition
- Addition of 3 Digit Number
- Problem Based on Addition

**In class 1<sup>st</sup> we learnt**

- Word Problem of Addition



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### Learning Outcomes

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

- Understand that addition means putting things together.
- Add numbers up to three digits correctly.
- Solve simple addition problems in everyday situations.
- Use the "+" and "=" symbols properly.
- Learn that numbers can be added in any order (e.g.,  $5 + 3 = 3 + 5$ ).
- Solve simple stories or word problems using addition.
- Add small numbers quickly in your head.
- Understand that adding zero to a number doesn't change it (e.g.,  $6 + 0 = 6$ ).
- Check if your addition answer makes sense.
- Add a group of numbers step by step to find the total.



## Warm Up

Experiential Learning

Riya plucks bunches of grapes every day and put it in a basket. Find out the number of grapes that she put in 3 days.



Grapes plucked	
Day 1	380
Day 2	248
Day 3	398
Total	

## Addition

When we put two or more numbers together. The total of two or more numbers is called their **sum**. The sum is always greater than the numbers being added, except when one of the numbers being added is zero.

In Class II, we have learnt the addition of 2-digit or 3-digit numbers with and without carry. Let us revise it through some examples :



### Addition of 2-digit Numbers (Without Carrying)

For adding 2-digit numbers, we start by adding the ones, then adding the tens place.

**Example 1 :** Add 45 and 24.

**Solution :**

**Step 1 :** Add the ones.

$$5 + 4 = 9$$

Write 9 in the ones place.

**Step 2 :** Add the tens.

$$4 + 2 = 6$$

Write 6 in the tens place.

$$\text{Thus, } 45 + 24 = 69$$

	<b>T</b>	<b>O</b>
	4	5
+	2	4
	6	9

### Addition of 3-digit numbers (without carrying)

for adding 3-digit numbers, we start by adding the ones, then add the tens followed by addition of hundreds.

**Example 2 :** Add 435 and 263.

**Solution :**

**Step 1 :** Add the ones.

$$5 + 3 = 8$$

Write 8 in the ones place.

**Step 2 :** Add the tens.

$$3 + 6 = 9$$

Write 9 in the tens place.

**Step 3 :** Add the hundreds

$$4 + 2 = 6$$

Write 6 in the hundreds place

$$\text{Thus, } 435 + 263 = 698$$

	<b>H</b>	<b>T</b>	<b>O</b>
	4	3	5
+	2	6	3
	6	9	8

## Addition of 2-digit and 3-digit numbers (with carrying)

**Example 3 :** Find the sum of 38 and 97.

**Solution :**

**First Method:**

	T	O									
	3	8	→	3	tens	+	8	ones			
+	9	7	→	+	9	tens	+	7	ones		
<hr/>				<hr/>							
1	3	5		12	tens	+	15	ones			
<hr/>				<hr/>							
				=	12	tens	+	15	ones		
				=	12	tens	+	10	ones	+	5 ones
				=	12	tens	+	1	tens	+	5 ones
				=	13	tens	+	5	ones		
				=	130	+	5				
				=	135						

**Second Method:**

**Addition of ones digits :**

$$8 + 7 = 15$$

Carry 1 over to the tens place.

**Addition of tens digits:**

$$3 + 9 + 1 \text{ (carried over)} = 13.$$

	1	3	8
+	9	7	
<hr/>			
1	3	5	

Thus, the sum is 135.

**Example 4 :** Find the sum of 489 and 765.

**Solution :**

**Addition of ones digits.**

$$9 + 5 = 14. \text{ Write 4 in ones place.}$$

Carry 1 over to the tens place.

**Addition of tens digits:**

$$8 + 6 + 1 \text{ (carried over)} = 15.$$

Write 5 in the tens place and carry 1 over the hundreds place.

**Addition of the hundreds digits:**

$$4 + 7 + 1 \text{ (carried over)} = 12. \text{ Write 2 in the hundreds place and 1 in the thousands place.}$$

	Th	H	T	O
		1	1	
		4	8	9
+	7	6	5	
<hr/>				
	1	2	5	4

Thus, the sum is 1254.



## Exercise 3.1

Knowledge Application

### 1. Find the sum of the following:

(a)

	T	O
	3	9
+	7	5
<div></div>		

(b)

	T	O
	8	9
+	6	5
<div></div>		

(c)

	H	T	O
	8	5	6
+	9	4	6
<div></div>			

(d)

	H	T	O
	8	3	2
+	6	8	6
<div></div>			

(e)

	H	T	O
	6	7	5
+	3	4	5
<div></div>			

(f)

	H	T	O
	4	6	5
+	7	8	3
<div></div>			

(g)

	H	T	O
	3	8	9
	6	0	8
+	2	7	5
<div></div>			

(h)

	H	T	O
	3	4	6
	9	9	5
+	1	6	8
<div></div>			

(i)

	H	T	O
	6	5	8
	5	6	6
+	8	4	5
<div></div>			

(j)

	H	T	O
	8	0	0
	3	0	9
+	2	0	1
<div></div>			

(k)

	H	T	O
	2	0	0
	1	0	9
+	8	6	9
<div></div>			

(l)

	H	T	O
	6	7	3
	7	2	9
+		9	9
<div></div>			

### 2. Write in columns and add:

(a) 619 and 188

(b) 529 and 312

(c) 779 and 8922

(d) 883 and 243

(e) 154, 946 and 228

(f) 311, 345 and 188

### 3. Match the columns:

#### Column A

(a)  $29 + 79 =$

(b)  $349 + 675 =$

(c)  $123 + 251 + 135 =$

(d)  $459 + 188 + 355 =$

(e)  $225 + 130 + 129 =$

#### Column B

(i) 484

(ii) 509

(iii) 1002

(iv) 108

(v) 1024

## Addition of 4-digit Numbers (Without Carrying)



### Working Rules

**Step 1:** Arrange the digits of the given numbers in columns of thousands, hundreds, tens and ones.

**Step 2:** Add column- wise.

First add the ones, then the tens, next the hundreds and finally add the thousands.



Take a Task



Watch Remedial

**Example 5 :** Add 2361 and 3417

**Solution :**

	Th	H	T	O
	2	3	6	1
+	3	4	1	7
	5	7	7	8

→ Addition of ones :  $1 + 7 = 8$

→ Addition of tens :  $6 + 1 = 7$

→ Addition of hundreds :  $3 + 4 = 7$

→ Addition of thousands :  $2 + 3 = 5$

Hence, the sum 2361 and 3417 is **5778**.

**Example 6 :** Add 2314, 3211 and 3233.

**Solution :**

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

→ Addition of ones :  $4 + 1 + 3 = 8$  ones

→ Addition of tens :  $1 + 1 + 3 = 5$  tens

→ Addition of hundreds :  $3 + 2 + 2 = 7$  hundreds

→ Addition of thousands :  $2 + 3 + 3 = 8$  thousands

Hence,  $2314 + 3211 + 3233 = \mathbf{8758}$ .





## Exercise 3.2

Knowledge Application

### 1. Add the following:

	Th	H	T	O
	3	4	5	1
+	4	2	1	3

	Th	H	T	O
	4	2	5	3
+	2	4	2	2

	Th	H	T	O
	5	6	1	2
+	1	3	4	3

	Th	H	T	O
	4	2	1	5
+	3	2	3	4

	Th	H	T	O
	1	4	4	5
+	3	2	3	2

	Th	H	T	O
	3	1	3	0
+	6	2	2	8

	Th	H	T	O
	8	3	4	2
+	1	2	5	2

	Th	H	T	O
	4	4	6	9
+	2	5	1	0

	Th	H	T	O
	2	4	7	2
+	1	2	2	5

### 2. Write in columns and add:

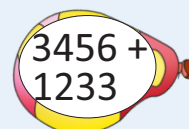
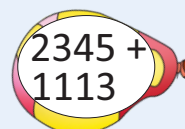
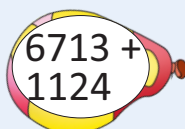
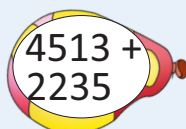
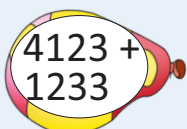
(a)  $1174 + 2012 + 3413$

(b)  $234 + 413 + 3132$

(c)  $3254 + 1302 + 3241$

(d)  $4251 + 113 + 2334$

### 3. Add and match the sum:



## Addition of 4-digit Numbers (With Carrying)

**Example 7 :** Find the sum of 4878 and 2349.

**Solution :**

Th	H	T	O
<span style="border: 1px solid black; padding: 2px;">1</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	
4	8	7	8
+	2	3	4
7	2	2	7

$8 + 9 = 17$  ones = 1 ten + 7 ones  
 $7 + 4 = 11$  tens + 1 = 12 tens = 1 hundred + 2 tens  
 $8 + 3 = 11$  hundreds + 1 = 12 hundreds = 1 thousand + 2 hundreds  
 $4 + 2 = 6$  thousands + 1 = 7 thousands

Thus, the sum of 4878 and 2349 is **7227**.

**Example 8 :** Find the sum 2875, 3694 and 1879.

**Solution :**

Th	H	T	O
<span style="border: 1px solid black; padding: 2px;">2</span>	<span style="border: 1px solid black; padding: 2px;">2</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	
2	8	7	5
3	6	9	4
+	1	8	7
8	4	4	8

We took the following steps for this addition:

### Step 1: Adding Ones

$$5 + 4 + 9 = 18 \text{ ones}$$

$$18 \text{ ones} = 1 \text{ ten} + 8 \text{ ones}$$

We write 8 at the ones place and carry 1 over to the tens column.

Th	H	T	O
		<span style="border: 1px solid black; padding: 2px;">1</span>	
2	8	7	5
+	3	6	9
+	1	8	7
			8





**Step 2: Adding Tens**

$7 + 9 + 7 + 1$  (carried over) = 24 tens

24 tens = 2 hundreds + 4 tens

Write 4 at the tens column and carry 2 over to the hundreds column.

Th	H	T	O
	<div>2</div>	<div>1</div>	
2	8	7	5
+	3	6	9
+	1	8	7
		4	8

**Step 3: Adding Hundreds**

$8 + 6 + 8 + 1$  (carried over) = 24 hundreds

24 hundreds = 2 thousands + 4 hundreds

Write 4 at the hundreds place and carry 2 over to the thousands column.

Th	H	T	O
<div>2</div>	<div>2</div>	<div>1</div>	
2	8	7	5
+	3	6	9
+	1	8	7
	4	4	8

**Step 4: Adding Thousands**

$2 + 3 + 1 + 2$  (carried over) = 8 thousands

Write 8 at the thousand column.

Hence, the sum of 2875, 3694 and 1879 is **8448**.

Th	H	T	O
<div>2</div>	<div>2</div>	<div>1</div>	
2	8	7	5
+	3	6	9
+	1	8	7
	8	4	4
			8

**Exercise 3.3**

Knowledge Application

**1. Add the following:**

(a)

Th	H	T	O
3	4	5	5
+	2	4	5
			8

(b)

Th	H	T	O
4	5	3	2
+	2	8	9
			4

(c)

Th	H	T	O
2	5	6	8
+	6	7	8
			4

(d)

Th	H	T	O
1	8	9	7
+	6	2	5
			9

(e)

Th	H	T	O
2	5	6	9
+	5	7	6
			7

(f)

Th	H	T	O
3	4	6	6
+	3	4	5
			8

(g)

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

(h)

Th	H	T	O
2	4	6	8
+	2	5	8
			9

(i)

Th	H	T	O
3	4	7	3
+	2	4	6
			9

## 2. Write in columns and add:

(a)  $3208 + 1297 + 1728$

(c)  $1675 + 2889 + 3665$

(b)  $2593 + 3009 + 2887$

(d)  $2771 + 3994 + 2880$

## 3. Match the columns:

### Column A

(a)  $2358 + 4669$

(b)  $3526 + 4793$

(c)  $4287 + 3283$

(d)  $1267 + 6759$

(e)  $7631 + 1228$

### Column B

(i) 7570

(ii) 8859

(iii) 8026

(iv) 7027

(v) 8319

## Properties of Addition

**Example 9 :** Add 3825 and 4162.

**Solution :**

We can add the given numbers in two ways.

$$\begin{array}{r} 3 \quad 8 \quad 2 \quad 5 \\ + 4 \quad 1 \quad 6 \quad 2 \\ \hline 7 \quad 9 \quad 8 \quad 7 \end{array} \quad \text{or} \quad \begin{array}{r} 4 \quad 1 \quad 6 \quad 2 \\ + 3 \quad 8 \quad 2 \quad 5 \\ \hline 7 \quad 9 \quad 8 \quad 7 \end{array}$$

In both the cases, we get the same sum, i.e. **7987**.

**Example 10 :** Add 345, 201 and 145.

**Solution :**

We can add the given numbers in six different ways:

$$\begin{array}{r} 3 \quad 4 \quad 5 \\ 2 \quad 0 \quad 1 \\ + 1 \quad 4 \quad 5 \\ \hline 6 \quad 9 \quad 1 \end{array} \quad \begin{array}{r} 3 \quad 4 \quad 5 \\ 1 \quad 4 \quad 5 \\ + 2 \quad 0 \quad 1 \\ \hline 6 \quad 9 \quad 1 \end{array} \quad \begin{array}{r} 2 \quad 0 \quad 1 \\ 3 \quad 4 \quad 5 \\ + 1 \quad 4 \quad 5 \\ \hline 6 \quad 9 \quad 1 \end{array}$$
$$\begin{array}{r} 2 \quad 0 \quad 1 \\ 1 \quad 4 \quad 5 \\ + 3 \quad 4 \quad 5 \\ \hline 6 \quad 9 \quad 1 \end{array} \quad \begin{array}{r} 1 \quad 4 \quad 5 \\ 3 \quad 4 \quad 5 \\ + 2 \quad 0 \quad 1 \\ \hline 6 \quad 9 \quad 1 \end{array} \quad \begin{array}{r} 1 \quad 4 \quad 5 \\ 2 \quad 0 \quad 1 \\ + 3 \quad 4 \quad 5 \\ \hline 6 \quad 9 \quad 1 \end{array}$$

In all the cases, we see that the sum remains the same.

What do we observe in the above two examples?



Numbers can be added in any order, their sum will remain the same.

**Example 11 :** Add 6083 and 0.

**Solution :**

$$\begin{array}{r} 6 \quad 0 \quad 8 \quad 3 \\ + \quad \quad \quad 0 \\ \hline 6 \quad 0 \quad 8 \quad 3 \end{array} \quad \text{or} \quad \begin{array}{r} \quad \quad \quad 0 \\ + \quad 6 \quad 0 \quad 8 \quad 3 \\ \hline 6 \quad 0 \quad 8 \quad 3 \end{array}$$

There is no change to a number if 0 is added to a number or a number is added to zero, i.e. the sum is the number itself.

When 1 is added to a number, the sum is the next number (successor).

**Example :**  $4238 + 1 = 4239$

4239 is a successor of 4238.



## Exercise 3.4

Knowledge Application

### 1. Fill in the blanks:

- (a)  $6923 + 0 = \underline{\hspace{2cm}}$ .
- (b)  $343 + \underline{\hspace{2cm}} = 243 + 343$
- (c)  $3456 + \underline{\hspace{2cm}} = 2468 + 3456$
- (d)  $327 + 44 = 327 + \underline{\hspace{2cm}}$ .
- (e)  $3214 + 1423 + 345 = 345 + 3214 + \underline{\hspace{2cm}}$ .
- (f)  $8256 + \underline{\hspace{2cm}} = 901 + 8256$ .
- (g)  $9299 + 0 = 0 + \underline{\hspace{2cm}}$ .
- (h)  $2831 + 445 = \underline{\hspace{2cm}} + 2831$ .

### 2. Write True or False:

- (a)  $3954 + 0 = 3954$
- (b)  $389 + 645 = 645 + 389$

$$(c) \quad 149 + 319 = 259 + 194$$

$$(d) \quad 7708 + 384 = 384 + 7708$$

$$(e) \quad 381 + 539 + 259 = 529 + 935 + 381$$


### 3. Match the columns:

#### Column A

$$(a) \quad 695 + 3359$$

$$(b) \quad 6759 + 0$$

$$(c) \quad 753 + 667 + 9354$$

$$(d) \quad 1675 + 299$$

$$(e) \quad 7526 + 1833$$

#### Column B

$$(i) \quad 1974$$

$$(ii) \quad 9354 + 667 + 753$$

$$(iii) \quad 9359$$

$$(iv) \quad 3359 + 695$$

$$(v) \quad 6759$$

### Problems on Addition

**Example 12:** In a shop, the sale in the first week was ₹ 3965 and the sale in the second week was ₹ 2875. What was the total sale in these two weeks?

**Solution :**

Sale in the first week	=	₹ 3965
Sale in the second week	=	₹ 2875
Total sale = ₹ 3965 + ₹ 2875	=	₹ 6840

Thus, the total sale in these two weeks was ₹ 6840.

Th	H	T	O
<span style="border: 1px solid black; padding: 2px;">1</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	
3	9	6	5
+	2	8	7
	6	8	4
			0

**Example 13 :** There are 4672 men, 2358 women and 1579 children in a village. What is the population of the village?

**Solution :**

Number of men	=	4672
Number of women	=	2358
Number of children	=	1579
Total population	=	<u>8609</u>

$$\text{Total} = 4672 + 2358 + 1579 = 8609$$

Thus, the population of the village is 8609.

Th	H	T	O
<span style="border: 1px solid black; padding: 2px;">1</span>	<span style="border: 1px solid black; padding: 2px;">2</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	
4	6	7	2
+	2	3	5
+	1	5	7
	8	6	0
			9





## Exercise 3.5

Knowledge Application

### 1. Multiple Choice Questions (MCQs)

(a) There are 825 children in primary classes, 638 children in middle classes and 595 children in secondary classes in a school. How many children are there in the school?

(i) 2085 children

(ii) 2508 children

(iii) 2058 children

(b) A factory produced 2248 toys in one week and 3562 toys in next week. How many toys did the factory produce in two weeks?

(i) 5801 toys

(ii) 5810 toys

(iii) 5180 toys

(c) A milk van supplied 4357 bottles and 3256 bottles of milk in two booths. How many total number of bottles of milk did the van supply?

(i) 7361 bottles

(ii) 7631 bottles

(iii) 7613 bottles

2. 6729 people visited an exhibition on Wednesday, 1289 on Thursday and 1129 on Friday. How many people in all visited the exhibition during these three days?

3. A soap factory produced 6752, 2887 and 2352 soap cakes in three days. How many soap cakes does the factory produce in total?

4. There are 3299 cows, 5293 buffaloes and 593 goats in a village. How many cattle are there in that village?

5. Find the sum of the largest 3-digit number and the smallest 4-digit number.

### Mental Math

Critical Thinking

#### 1. Fill in the missing numerals:

$$\begin{array}{r} \text{(a)} \quad \begin{array}{cccc} 3 & \square & 7 & \square \\ + & \square & 5 & \square \\ \hline 8 & 6 & 4 & 8 \end{array} \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \begin{array}{cccc} 4 & 5 & \square & \square \\ + & \square & \square & 8 \\ \hline 6 & 3 & 0 & 5 \end{array} \end{array}$$

$$\begin{array}{r}
 (c) \quad \begin{array}{cccc} 4 & \square & 6 & \square \\ + & 3 & 4 & \square \\ \hline & 7 & 6 & 0 & 8 \end{array}
 \end{array}$$

$$\begin{array}{r}
 (d) \quad \begin{array}{cccc} 5 & \square & \square & 6 \\ + & 3 & 5 & 8 & \square \\ \hline & \square & 0 & 0 & 4 \end{array}
 \end{array}$$

2. Add the following numbers in the three different ways.

(a) 4345, 2432 and 735

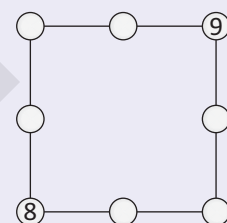
(b) 3485, 2485 and 1745

3. In a library, there are 2432 English books, 4328 Mathematics books, and 2198 Hindi books. Find the total number of books in the library.

## Puzzle



Fill in the missing numerals such that the sum of each side of the square is 18. Remember that you have to use numerals from 2 to 9 without repetition.



Conceptual Learning



## Think Tank



Gap Analyzer™  
Take a Test

1. Tick (✓) the correct answer:

(a)  $356 + 492 + 291 = 291 + \underline{\hspace{2cm}} + 356$

(i) 492

☐

(ii) 356

☐

(iii) 291

☐

(b)  $381 + 372 + 498 = \underline{\hspace{2cm}}$ .

(i) 1253

☐

(ii) 1151

☐

(iii) 1251

☐

(c)  $176 + 456 + 386 = \underline{\hspace{2cm}}$ .

(i) 1018

☐

(ii) 1810

☐

(iii) 1008

☐

(d)  $1111 + 2222 = \underline{\hspace{2cm}}$ .

(i) 3433

☐

(ii) 3333

☐

(iii) 3334

☐

2. Fill in the blanks:

(a)  $\underline{\hspace{2cm}} + 2375 = 2375 + 327$

(b)  $0 + 2715 = \underline{\hspace{2cm}}$

$$(c) \quad (3475 + 2625) + 1494 = (3475 + \underline{\hspace{2cm}}) + 2625$$

$$(d) \quad (600 + 280) + 1397 = \underline{\hspace{2cm}} + (280 + 1397)$$

### 3. Match the following:

(a)  $1625 + 1000$

(i)  $2589$

(b)  $923 + 1000$

(ii)  $8100$

(c)  $4100 + 4000$

(iii)  $1923$

(d)  $2489 + 100$

(iv)  $2625$



Conceptual Learning

Solve the puzzle:

4			15
	5		20
3	1		10
14	8	23	

8			17
	1		15
	4		13
19	7	19	

### Mental Math

Critical Thinking

1. Write the number pairs to make the given sum.

(a)  $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 100$       (b)  $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 1000$

(c)  $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 700$       (d)  $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 900$

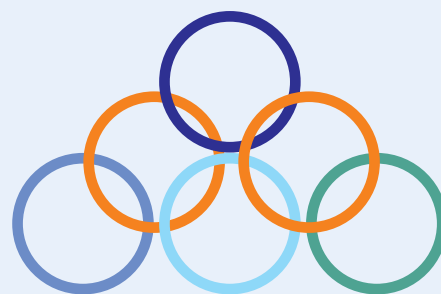
2. Find a number which when reversed and added to itself gives the number 5555.

3. How many 4-digit numbers are there which when reversed become 2-digit numbers.

4. List those 4-digit numbers whose sum of digits is 6.



1. What is the minimum number of rings that must be opened to separate all of them?
2. A number added to itself and then 70 added to the sum gives 2300. Guess the number.



## Maths Lab Activity

### Conceptual Learning

**Learning objective :** Learn to make addition facts.

**Material required :** Deck of cards, paper, and pencil.

#### Procedure:

1. This is an individual activity.
2. Choose a leader to conduct the activity.
3. The leader shuffles the cards and places them on the table upside down.
4. Each child in a group can pick up 8 cards without seeing them. Then he/she flips the cards to see the number on each card. Next he/she must form 2 numbers by arranging the card numbers, so that their total is 1000.
5. A child may choose cards with numbers like, 1, 2, 7, 8, 6, 4, 5, and 9 and create numbers like  $876 + 124 = 1000$ .
6. A child who has a number closest to 1000 wins a point. In case of a tie, both claimants get a point each.
7. Shuffle the cards before starting afresh.
8. The activity continues until all the students have had their turns.

