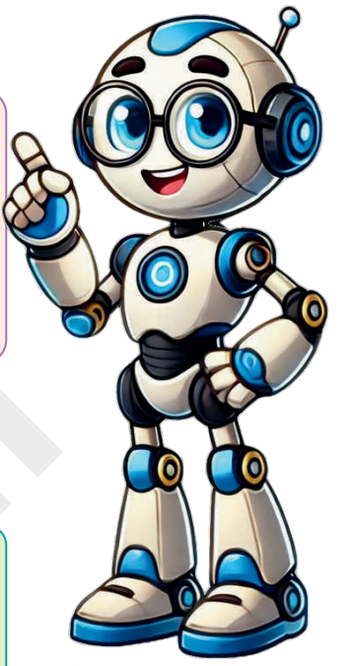
4

Subtraction

We'll cover the following key points:

- → Subtraction Using Number Line
- → Addition and Subtraction as Inverse Operations
- → Subtraction Without Borrowing
- → Subtraction With Borrowing



Hi, I'm EeeBee

Do you Remember fundamental concept in previous class:
In class 1st we learnt

- → Subtraction
- → Subtraction on the Number Line
- → Subtraction Facts

Still curious? Talk to me by scanning the QR code.

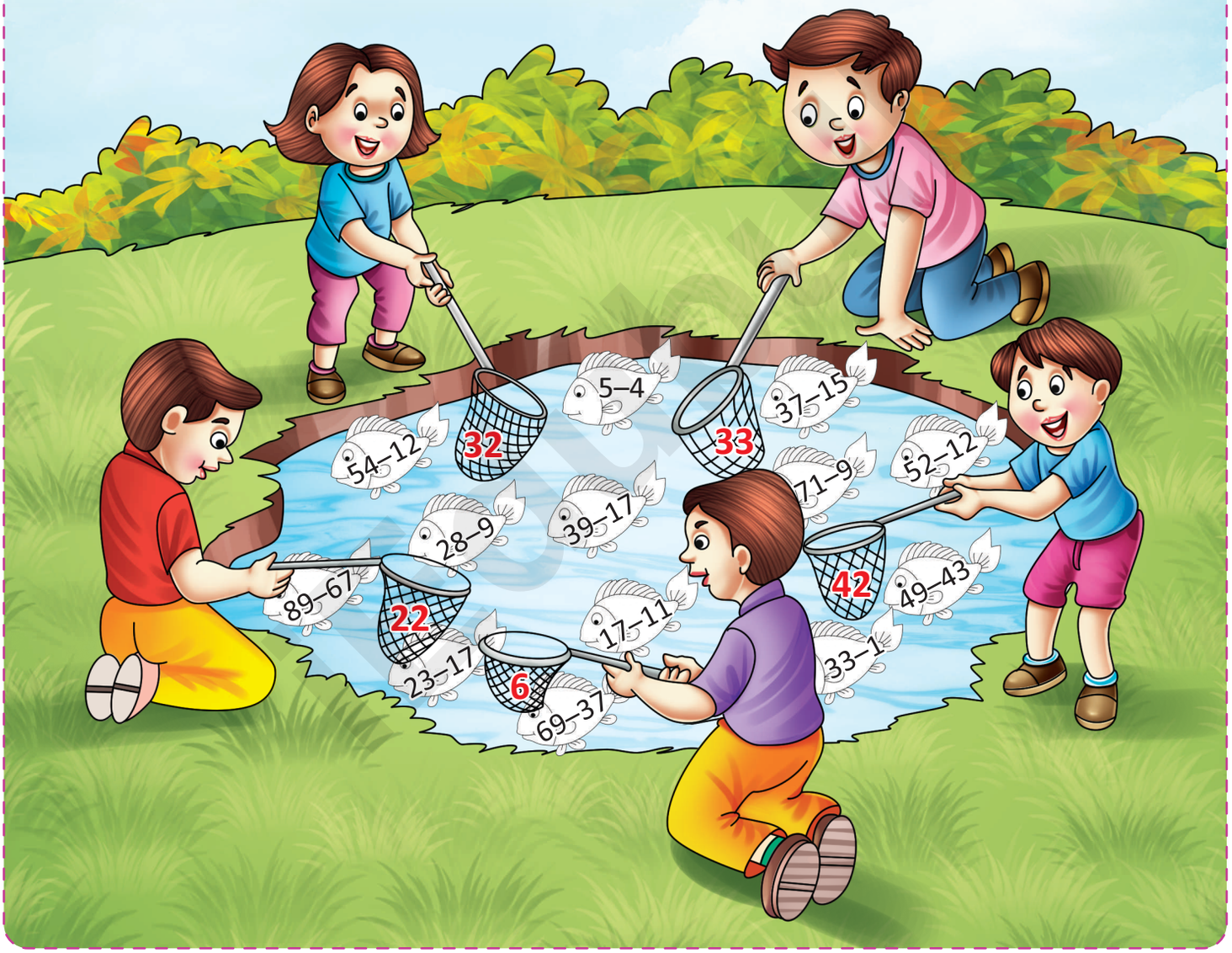
Learning Outcomes

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

- Use a number line to subtract numbers (e.g., start at 10 and move 3 steps back to get 7).
- Understand that subtraction is the opposite of addition (inverse operations).
- Subtract two numbers without borrowing (e.g., 52 - 23).
- Subtract two numbers with borrowing (e.g., 63 - 28).
- Understand the concept of borrowing when subtracting (taking 1 from the next column).
- Use place value (ones, tens, hundreds) to subtract numbers correctly.
- Solve word problems that involve subtraction with and without borrowing.
- Check your subtraction answers by adding the result to the subtracted number (inverse check).

Warm Up

Rishabh, Anmol, Rahul, Ricky and Ravi are catching fish in the pond. Solve the subtract written on the fish and match the answers with the numbers on the fishing nets by colouring the fish and the net in the same colour. Use a different colour for each net.



Subtraction means taking away a number of things or quantities from a larger group. The symbol of subtraction is '–'. It is called the minus sign.

Gautam had 30 pencils. Pari took 20 pencils from him. How many pencils were left with Gautam?

To know the number of pencils Gautam was left with, he had to subtract 20 from 30.

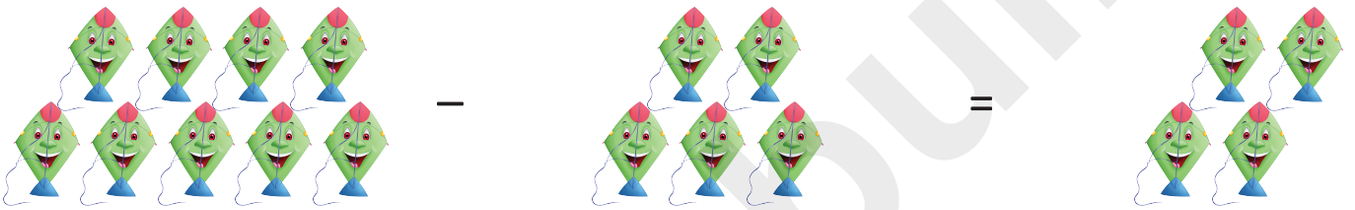
30 – 20 = 10

It is read as 20 subtracted from 30 is 10.

or

30 minus 20 is 10.

It is also read as the difference of 30 minus 20 is 10.



9 – 5 = 4

9 → Minuend

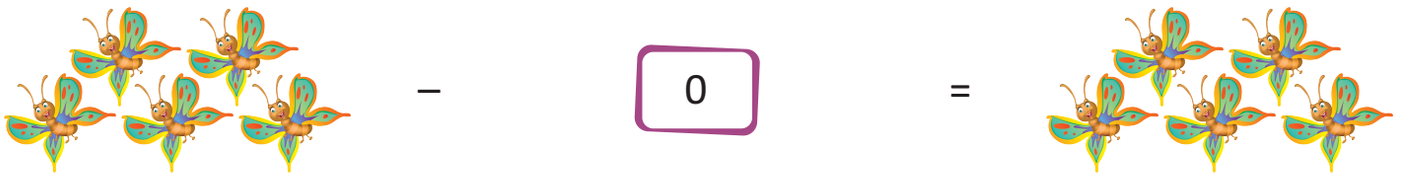
– 5 → Subtrahend

4 → Difference

The number which is to be subtracted is called subtrahend and the number from which it is subtracted is called minuend. The answer is known as difference.

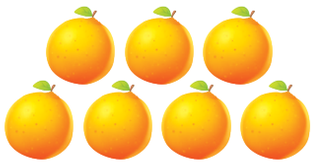
Properties of subtraction

- When 0 is subtracted from a number, the difference is the number itself.



5 – 0 = 5

- When a number is subtracted from itself, the difference is 0.

 –  = 0

7 – 7 = 0

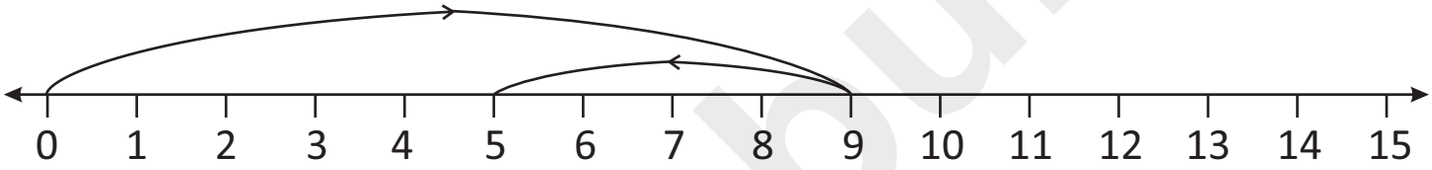
Subtraction Using Number Line

Subtract 4 from 9 by using number line.

Start from 0, take 9 steps towards right then take 4 steps backward. We get 5.

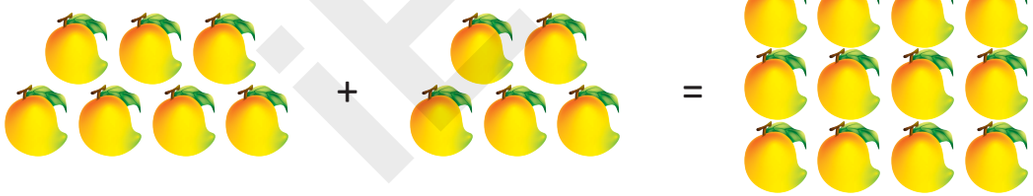
Take a Task

Watch Remedial

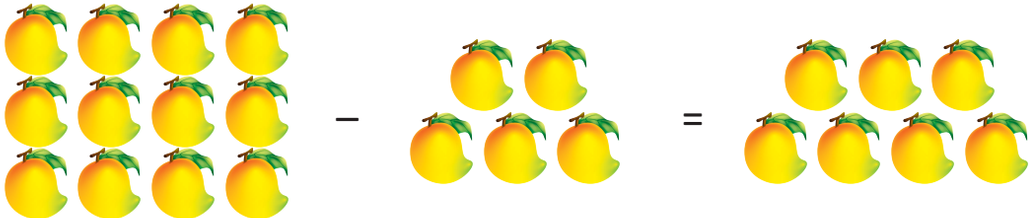


Thus, 9 – 4 = 5

Addition and Subtraction as Inverse Operations



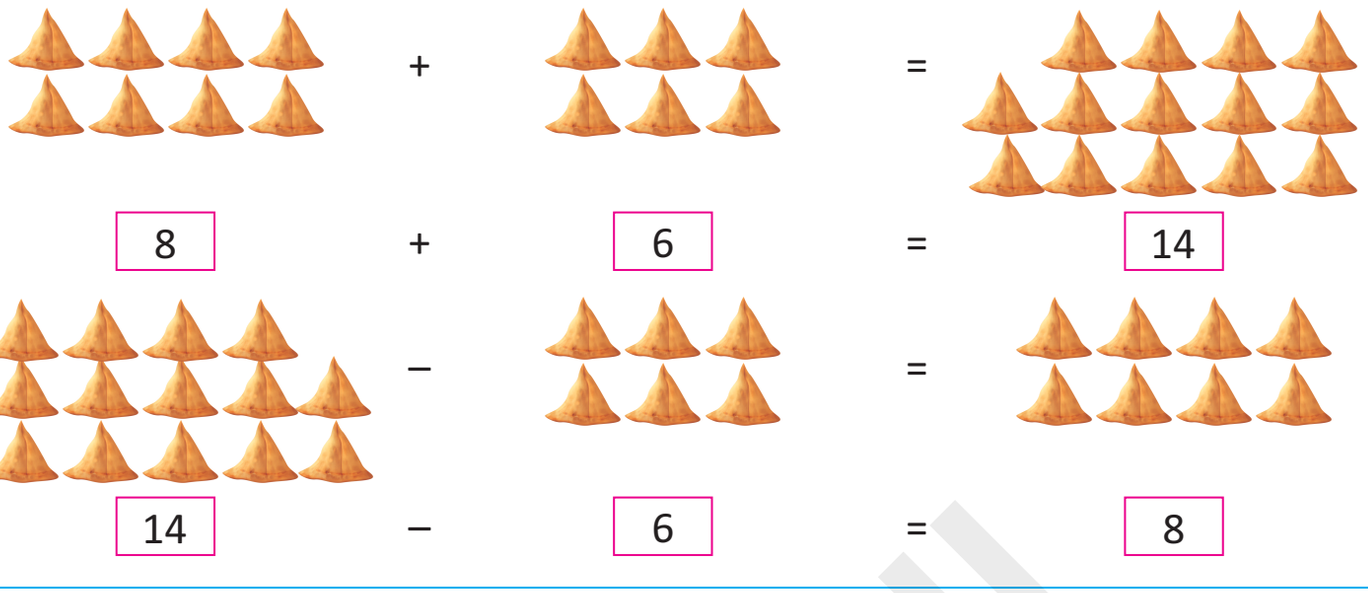
7 + 5 = 12



12 – 5 = 7

Take a Task

Watch Remedial



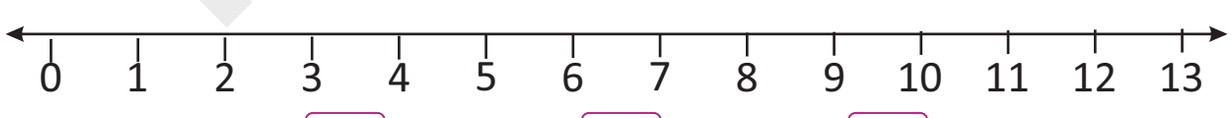
We can write the subtraction facts as follow:

- 15 + 9 = 24 ⟶ (a) 24 – 15 = 9
  (b) 24 – 9 = 15
- 12 + 8 = 20 ⟶ (a) 20 – 12 = 8
  (b) 20 – 8 = 12
- 45 + 15 = 60 ⟶ (a) 60 – 45 = 15
  (b) 60 – 15 = 45

Exercise 4.1

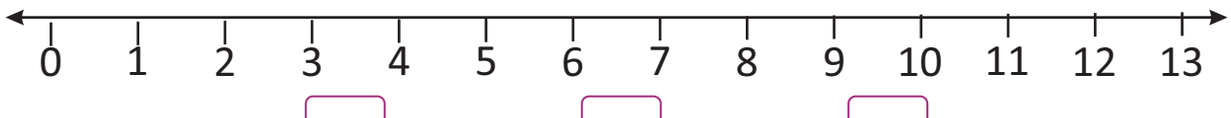
1. Subtract with the help of number line:

(a)



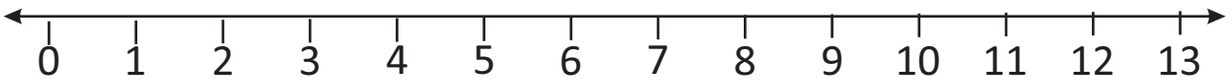
9 – 2 = ☐

(b)



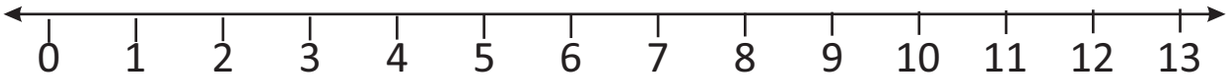
10 – 4 = ☐

(c)



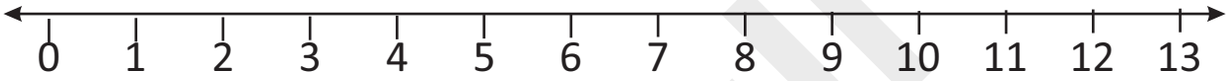
12 – 6 = ☐

(d)



13 – 3 = ☐

(e)



11 – 4 = ☐

2. Write a subtraction fact for each addition.

(a) 10 + 5 = 15 → ☐ – ☐ = ☐

(b) 12 + 6 = 18 → ☐ – ☐ = ☐

(c) 9 + 8 = ☐ → ☐ – ☐ = ☐

(d) 15 + 5 = ☐ → ☐ – ☐ = ☐

(e) 17 + 3 = ☐ → ☐ – ☐ = ☐

Subtraction Without Borrowing

Subtracting a 2 – digit number from a 2 – digit number

Example 1 : Subtract 53 from 98.

Solution : **Expanded Form**

	9	8	→		9 tens	+	8 ones	
–	5	3	→	–	5 tens	+	3 ones	
				=	4 tens	+	5 ones	
				=	40	+	5	= 45

Thus, 98 – 53 = 45.

Subtract tens from tens and ones from ones.

Take a Task

Watch Remedial

Short Form

	T	O
	9	8
–	5	3
	4	5

Subtract 3 ones from 8 ones, i.e. 8 – 3 = 5

Subtract 5 tens from 9 tens, i.e. 9 – 5 = 4

Thus, 98 – 53 = 45.

Example 2 : Subtract 25 from 79.

Solution :

Step 1 : Subtract the ones.

9 – 5 = 4

Write 4 in the ones place.

Step 2 : Subtract the tens.

7 – 2 = 5

Write 8 in the tens place.

Thus, 79 – 25 = 54.

	T	O
	7	9
–	2	5
	5	4

Subtracting a 3 - digit number from a 3-digit number

Example 3: Subtract 272 from 596.

Solution: **Expanded Form**

5 9 6 → 5 hundreds + 9 tens + 6 ones

– 2 7 2 → – 2 hundreds + 7 tens + 2 ones

3 hundreds + 2 tens + 4 ones

Subtract hundreds from hundreds

Subtract tens from tens

Subtract ones from ones

= 3 hundreds + 2 tens + 4 ones

= 300 + 20 + 4 = 324

Thus, 596 – 272 = 324.

Exercise 4.2

1. Subtract.

(a)
	T	O
	2	9
–	1	4

(b)
	T	O
	6	8
–	5	7

(c)
	T	O
	6	7
–	5	6

(d)
	T	O
	8	5
–	7	4

(e)
	T	O
	8	4
–	3	3

(f)
	T	O
	8	6
–	0	5

(g)
	H	T	O
	3	5	9
–	0	2	8

(h)
	H	T	O
	4	6	5
–	4	3	4

(i)
	H	T	O
	6	6	5
–	3	0	3

(j)
	H	T	O
	8	6	5
–	3	4	5

(k)
	H	T	O
	7	4	8
–	6	4	7

(l)
	H	T	O
	3	2	5
–	2	0	3

2. Match the columns:

	Column A			Column B	
(a)	52	–	11	(i)	40
(b)	97	–	62	(ii)	51
(c)	74	–	23	(iii)	41
(d)	88	–	35	(iv)	35
(e)	90	–	50	(v)	53

Subtraction With Borrowing

Subtracting a 2 – digit number from a 2 – digit number

Example 1 : Subtract 62 from 81.

Solution : Expanded Form

$$\begin{array}{rcl} 81 & \rightarrow & (8 \text{ tens} + 1 \text{ one}) \\ -\ 62 & \rightarrow & -\ (6 \text{ tens} + 2 \text{ ones}) \end{array} \quad \begin{array}{l} \rightarrow \\ \\ \end{array} \quad \begin{array}{l} (7 \text{ tens} + 11 \text{ ones}) \\ -\ (6 \text{ tens} + 2 \text{ ones}) \\ \hline 1 \text{ tens} + 9 \text{ ones} \\ = 10 + 9 = 19 \end{array}$$

Short Form

	T	O
	$\cancel{8}^{7}$	$\cancel{1}^{11}$
–	6	2
	1	9

Steps :

1. We cannot subtract 2 from 1.
2. We borrow 1 ten or 10 ones leaving 8 – 1 = 7 tens
3. Now, 10 ones and 1 one become 11 ones.
4. 11 ones – 2 ones = 9 ones
   and 7 tens – 6 tens = 1 ten
   Thus, 81 – 62 = 19

Thus, 81 – 62 = 19.

Subtract a 3 – digit number from a 3 – digit number

Example 2 : Subtract 385 from 673.

Solution : Expanded Form

$$\begin{array}{rcl} 673 & \rightarrow & (6 \text{ hundreds} + 7 \text{ tens} + 3 \text{ ones}) \\ -\ 385 & \rightarrow & -\ (3 \text{ hundreds} + 8 \text{ tens} + 5 \text{ ones}) \end{array} \quad \begin{array}{l} \\ \\ \end{array} \quad \begin{array}{l} \boxed{5} \quad \boxed{16} \quad \boxed{13} \\ \\ \hline 2 \text{ hundreds} + 8 \text{ tens} + 8 \text{ ones} = 288 \end{array}$$

8 tens can't be subtracted from 6 tens. Borrow 1 hundred and add it to 6 tens.
10 tens + 6 tens = 16 tens
16 – 8 = 8 tens

Borrow 1 ten or 10 ones from tens and add to ones.
3 + 10 = 13
13 – 5 = 8 ones

Hence, 673 – 385 = 288.

Short Form

	H	T	O
	5	16	13
6 7 3 →	~~6~~	~~7~~	~~3~~
– 3 8 5 →	– 3	8	5
	2	8	8

Steps

1. We cannot subtract 5 ones from 3 ones. Borrow 1 ten from 7 tens leaving 6 tens.
2. Regroup the tens and ones columns.
   73 = 70 + 3 = 60 + 13
   Now, 13 – 5 = 8
3. We can't subtract 8 tens from 6 tens. Borrow 1 hundred from 6 hundreds leaving 5 hundreds.
4. Regroup the hundreds and tens columns.
   6 tens + 1 hundred
   = 6 tens + 10 tens = 16 tens
   Now, 16 – 8 = 8 tens
5. Subtract the hundreds digits.
   5 – 3 = 2
   Hence, 673 – 385 = 288.

Example 3 : Subtract 283 from 525.

Solution :

Step 1 : Subtract the ones.
5 – 3 = 2 ones
Write 2 in the ones place.

Step 2 : Subtract the tens.
8 tens cannot be subtracted from 2 tens.
So, borrow 1 from hundreds place.
5 hundreds have be comes 4 hundreds and 2 tens become 12 tens.
Thus, 12 – 8 = 4 tens
Write 4 in the tens place.

Step 3 : Subtract the hundreds.
4 – 2 = 2 hundreds
Write 2 in the hundreds place.
Thus, 525 – 283 = 242

H	T	O
~~5~~ (4)	~~2~~ (12)	5
2	8	3
– 2	4	2

Exercise 4.3

1. Match the columns:

Column A		Column B	
(a)	62 – 38	(i)	29
(b)	82 – 64	(ii)	24
(c)	94 – 65	(iii)	7
(d)	76 – 69	(iv)	18

2. Subtract the following. One has been done for you.

(a)

T	O
~~7~~ 6	~~8~~ 18
– 2	9
4	9

(b)

T	O
8	7
– 2	0

(c)

T	O
9	6
– 3	9

(d)

T	O
7	5
– 3	8

(e)

T	O
7	2
– 6	3

(f)

T	O
8	2
– 6	8

(g)

T	O
9	5
– 7	9

(h)

T	O
5	3
– 2	4

(i)

T	O
7	0
– 5	9

(j)

T	O
5	8
– 3	9

(k)

T	O
9	1
– 1	2

(l)

T	O
7	4
– 1	5

3. Subtract. One has been done for you.

(a)

H	T	O
7	~~9~~ 8	~~5~~ 15
– 4	2	8
3	6	7

(b)

H	T	O
4	6	1
– 3	8	5

(c)

H	T	O
9	8	0
– 5	6	0

(d)

	H	T	O
	3	4	5
–	2	5	9

(e)

	H	T	O
	8	4	3
–	5	6	8

(f)

	H	T	O
	5	5	5
–	4	5	8

(g)

	H	T	O
	6	4	0
–	5	4	7

(h)

	H	T	O
	3	4	0
–	2	5	6

(i)

	H	T	O
	6	8	0
–	5	8	3

4. Problems of Subtraction.

As Per NEP 2020 **Problem Solving**

(a) There are 525 students in a school. If the number of boys are 387, how many girls are there ?

_____

H	T	O
4	11	15
~~5~~	~~2~~	~~5~~
– 3	8	7
1	3	8

(b) A shopkeeper had 415 chairs. He sold 289 chairs. How many chairs were left with him? _____

H	T	O

(c) There are 768 kites in a shop. 599 kites are sold. How many kites are left to be sold? _____

H	T	O

(d) What should be added to 458 to get 900?

_____

H	T	O

(e) A shopkeeper supplied 630 pencils and pens to a school. If he supplied 340 pens, find the number of pencils he supplied. _____

H	T	O

Gap Analyzer™

Think Tank

1. Tick (✓) the correct answer.

(a) 929 – 704 =

(i) 252 ☐ (ii) 225 ☐ (iii) 522 ☐

(b) _____ – 195 = 784

(i) 979 ☐ (ii) 799 ☐ (iii) 997 ☐

(c) 9 tens 6 ones – 3 tens 2 ones =

(i) 6 tens 4 ones ☐ (ii) 4 tens 6 ones ☐ (iii) 6 tens 6 ones ☐

(d) 76 – 69 =

(i) 77 ☐ (ii) 7 ☐ (iii) 707 ☐

2. Fill in the blanks.

(a) _____ – 560 = 368

(b) 461 – 388 = _____.

(c) 138 – 5 tens = _____.

(d) 387 – 2 hundreds = _____.

(e) 393 – ☐ = 393

(f) 275 – 275 = ☐

(g) 888 – ☐ = 777

(h) 239 – ☐ = 238

3. Match the following:

Column A	Column B
(a) 482 – 311	(i) 122
(b) 998 – 876	(ii) 111
(c) 763 – 541	(iii) 171
(d) 321 – 210	(iv) 222

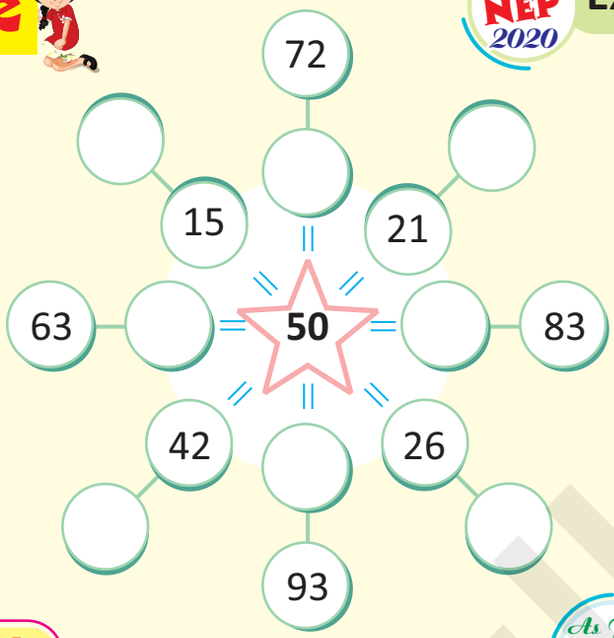
Custom Learning Path

Scan to Create Your Own Learning Path

Math Puzzle

Experiential Learning

Solve the puzzle.

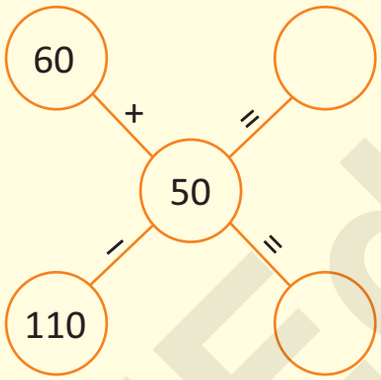


Mental Math

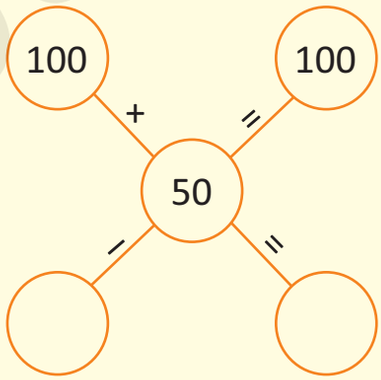
Critical Thinking

1. Fill in the placeholders.

(a)



(b)



2. Subtract the following:

(a)

	H	T	O
	6	2	1
–	4	9	9

(b)

	H	T	O
	2	5	6
–		8	9

(c)

	H	T	O
	8	3	5
–	2	1	9

3. Fill in the boxes.

(a) 134 – 3 tens = 104

(b) 256 – 2 hundreds =

(c) 556 – 5 tens =

(d) 386 – 8 tens =

Maths Lab Activity

As Per NEP 2020 Collaboration

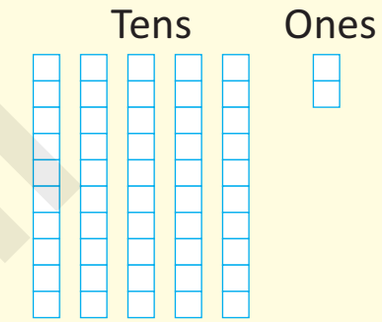
Objective : To understand 2-digit subtraction with regrouping.

Materials Required : Square lined paper cut into strips of 10 × 1 to show tens, pieces of 1 × 1 to show ones and scissors

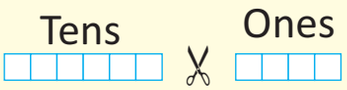
Procedure :

- Students work in pairs and draw with chalk a tens and ones grid.

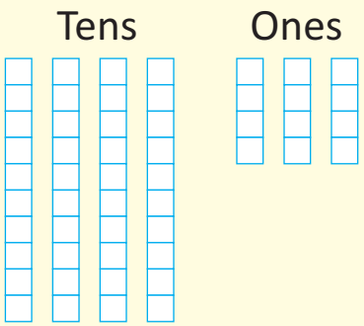
To solve 52 – 35



- One student places 5 tens and 2 ones on the correct place in the grid.
- The students observe that there are not enough ones, so the other student picks one strip of ten and cuts it into 10 ones.



- The first student then keeps all the ones in the ones place. There are now 4 tens and 12 ones.
- The second student now takes away 5 ones from 12 ones and 3 tens from the 4 tens.

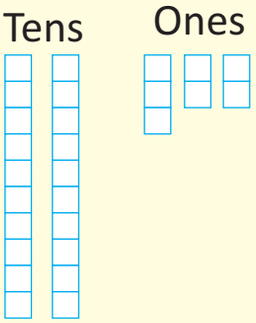


- The number that is left is the answer.

Record the Activity

52 – 35 = ?

5 tens	2 ones	=	4 tens	12 ones
4 tens	12 ones			
– 3 tens	5 ones			
2 ten	7 ones			



Try these out

75 – 29 = ? 92 – 38 = ? 64 – 39 = ?