6 Division

We'll cover the following key points:

- → Division and Division Fact
- → Properties of Division
- → Long Division
- → Dividing 3-digit number by 1-digit
- → Dividing 4-digit number by 1-digit
- → Division with Regrouping
- → Division by 10
- → Problems on Division

Do you Remember fundamental concept in previous class. In class 2nd we learnt

- →Introduction of Division
- → Division Without Remainder
- → Division With Remainder
- → Word Problem Based on Division



Hi, I'm EeeBee



Still curious?

Talk to me by scanning the QR code.

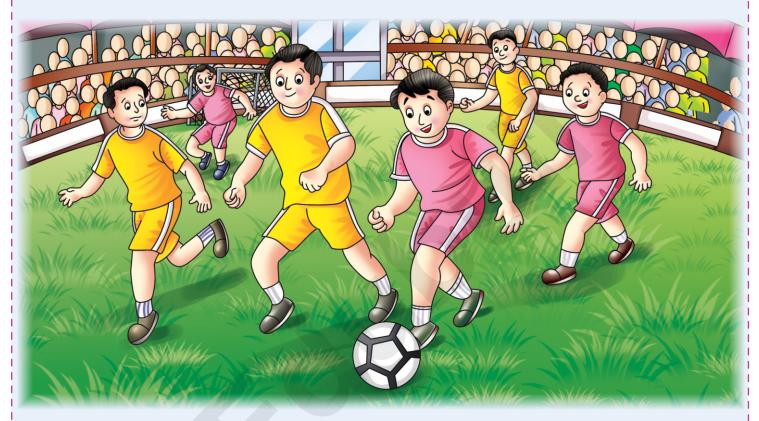
Learning Outcomes

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

- Understand the concept of division as equal sharing or grouping.
- Identify and use the division symbol (÷) and terms like dividend, divisor, and quotient.
- Perform simple division of two-digit numbers by single-digit numbers with and without remainders.
- Relate division to repeated subtraction.
- Understand the relationship between multiplication and division.
- Solve simple real-life problems involving division.
- Recognize and apply the concept of division as the inverse of multiplication.
- Divide numbers mentally in cases involving multiples of 10.
- Distribute objects equally among groups and verify the results.



Ravi and his friends were going to watch a football match being played between their school and Priya's school. There were 20 of them and they went by bicycles. Two friends went in each bicycle. At the hall, they met Priya and her friends.





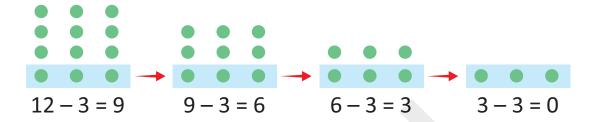
Can you find out $20 \div 2 = ?$

Division and Division Fact

Division is a process of sharing or dividing into equal parts. Remember, division is repeated subtraction.

Example 1: How many times do we subtract 3 from 12 to get 0?

Solution:



Thus, we can subtract 3 from 12 four times to get 0, as there are 3 fours in 12.

In other words, we can say that 12 divided by 3 is equal to 4.

In symbols, we have $12 \div 3 = 4$.

This is also called division fact.

Here, 12 is the dividend, 3 is the divisor and 4 is the quotient.

	12
First time	-3
	9
Second time	-3
	6
Third time	-3
	3
Fourth time	-3
	0

Division Fact

We know that $7 \times 5 = 35$

 \therefore Division facts of $7 \times 5 = 35$ are

$$35 \div 7 = 5$$
 and $35 \div 5 = 7$

So, every multiplication fact gives **two division facts**.

Example 2: Divide 15 toffees equally among three girls.

Solution:

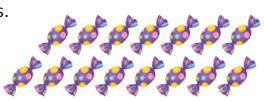
Number of girls = 3

Total number of toffees = 15

Number of toffees for each girl = $15 \div 3 = 5$

Example 3: Share the following equally:

- (a) 15 apples among 5 persons
- (b) 18 ice-cream among 6 children



Solution:

- (a) Total number of apples = 15Total number of persons = 5Now, the number of apples to be shared among each person = 15 ÷ 5 = 3
- (b) Total number of ice-creams = 18Total number of children = 6Now, the number of ice-creams to be shared among each child = 18 ÷ 6 = 3



Example 4:

Show division as repeated subtraction by dividing 30 by 5.

Solution:

 $30 \div 5$ can be shown as repeated subtraction as given below:

$$30-5=25$$
, $25-5=20$, $20-5=15$,

$$15-5=10$$
, $10-5=5$, $5-5=0$

Here, 5 is subtracted from 30, 6 times

Also, $30 \div 5 = 6$

Exercise 6.1

Knowledge Application

1. Fill in the box:

(c)

2. Write two division facts for each of the following:

- (a) $6 \times 8 = 48$
- (b) $6 \times 4 = 24$
- (c) $7 \times 8 = 56$
- (d) $5 \times 4 = 20$

- (e) $6 \times 7 = 42$
- (f) $9 \times 4 = 36$
- (g) $5 \times 8 = 40$

3. Write the dividend, divisor and quotient in each case:

- (a) $16 \div 8 = 2$
- (b) $12 \div 6 = 2$
- (c) $18 \div 9 = 2$

- (d) $51 \div 17 = 3$
- (e) $36 \div 6 = 6$
- (f) $49 \div 7 = 7$

4. Divide by repeated subtraction. Find their quotient in each case:

- (a) $36 \div 9$
- (b) $8 \div 2$

- (c) $12 \div 3$
- (d) 56÷8

- (e) $25 \div 5$
- (f) 36÷6
- (g) 10÷10
- (h) 28÷7

5.



Draw an equal number of balloons in the boxes given below:







- (a) Total numbers of balloons =
- (b) Number of boxes =
- (c) Each box will have balloons.



Properties of Division

1. Subtract 1 repeatedly from 3.

We find that we can subtract 1 repeatedly from 3 for three times.

Hence,
$$3 \div 1 = 3$$

Similarly, $8 \div 1 = 8$
 $15 \div 1 = 15$
 $23 \div 1 = 23$ etc.

We observe that :

 $\begin{array}{c}
3 \\
-1 \longrightarrow 1 \text{ time} \\
\hline
2 \\
-1 \longrightarrow 2 \text{ times} \\
\hline
1 \\
-1 \longrightarrow 3 \text{ times}
\end{array}$

1 divides every number exactly and the quotient is the number itself.

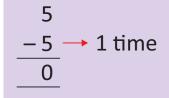
2. Subtract 5 from 5.

So, we can subtract 5 from 5 for one time.

Hence, $5 \div 5 = 1$

Similarly, $9 \div 9 = 1$, $28 \div 28 = 1$ etc.

We observe that:



Every number (except zero) divides itself exactly and the quotient is 1.

3. Subtract 0 repeatedly from 5.

When we subtract 0 from 5, the difference remains same i.e. 5. Similarly, if we subtract 0 from 4 repeatedly, we get the difference 4.

We observe that:

We can not divide any number by 0.

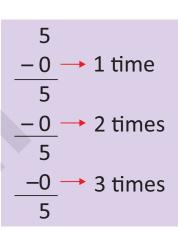
4. Can we subtract 5 from 0? No.

Therefore, we can say that $0 \div 5 = 0$.

Similarly, $0 \div 8 = 0$, $0 \div 15 = 0$ etc.

We observe that:

When 0 is divided by any number (other than 0), the quotient is zero.



1. Fill in the box:

- (a) 96÷1=
- (b) $0 \div 88 =$
- (c) 95÷1=

Knowledge Application

- (d) 89÷1=
- (e) 0÷19=

Exercise 6.2

(f) 0÷12=

- (g) $35 \div 35 =$
- (h) 0÷53=
- (i) 0÷651=

- (j) 18÷18=
- (k) 108 ÷ = 1
- (I) ÷ 15 = 1

2. Match the columns:

Column A

- (a) 219 ÷ 219
- (b) $0 \div 125$
- (c) $145 \div 1$
- (d) 30÷10
- (e) $20 \div 5$

Column B

- (i) 145
- (ii) 3
- (iii) 4
- (iv) 0
- (v) 1

Long Division







Example 5: Divide 42 by 2.

Solution: Dividend = 42 (4 Tens 2 Ones)

Step 1 Divide 4 Tens by 2

 $4 \div 2 = 2$

Write 2 in the Tens place of the Quotient and write Product

4, below the dividend in the Tens place.

4 - 4 = 0

Step 2 Bring down 2

 $2 \div 2 = 1$

Write 1 in the Ones place in the Quotient and

write 2 below the dividend in Ones place.

2 - 2 = 0

Thus, $42 \div 2 = 21$

T O 2 1 2 4 2 - 4 • 0 2 - 2 0

1

2

2

2

0

6

6

0

0

Dividing 3-digit number by 1-digit

Example 6: Divide 426 by 2.

Solution:

Step 1 Divide 4 Hundreds by 2.

 $4 \div 2 = 2$

Write 2 in the Hundreds place of the quotient.

Step 2 Divide 2 Tens by 2.

 $2 \div 2 = 1$, Write in the 1 Tens place of the quotient.

Step 3 Divide 6 Ones by 2.

 $6 \div 2 = 3$, Write 3 in Ones place of the quotient.

So Quotient = 213.

Example 7: 609 by 3.

Step 1 Divide 6 Hundreds by 3.

 $6 \div 3 = 2$

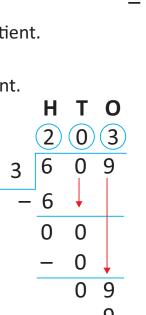
Step 2 Divide 0 Tens by 3.

 $0 \div 3 = 0$

Step 3 Divide 9 Ones by 3.

 $9 \div 3 = 3$

Thus, $426 \div 2 = 203$.



0

Verification

Here, Dividend = 609

Divisor = 3, and quotient = 203

we know that,

Divisor × Quotient = Dividend

i.e. $3 \times 203 = 609$



You may verify your answers. Remember! (Divisor × Quotient) = Dividend.

So, $3 \times 203 = 609$, hence the answer is verified and it is correct

- **Example 8:** Divide 600 by 2.
 - **Step 1** Divide 6 Hundreds by 2.

 $6 \div 2 = 3$

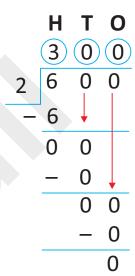
Step 2 Divide 0 Tens by 2.

 $0 \div 2 = 0$

Step 3 Divide 0 Ones by 2.

 $0 \div 2 = 0$

Thus, $600 \div 2 = 300$.



Exercise 6.3

Knowledge Application

1. Divide using long division:

(a) 38 by 2

(b) 69 by 3

(c) 128 by 4

(d) 72 by 3

(e) 99 by 3

(f) 74 by 2

2. Divide the following and verify the answer:

(a) $333 \div 3$

(b) $440 \div 10$

(c) $369 \div 3$

(d) 402 ÷ 2

(e) $286 \div 2$

(f) 339÷3

(g) $555 \div 5$

(h) 480÷4

(i) $880 \div 4$

(j) $660 \div 3$

(k) $482 \div 2$

(I) $404 \div 2$

3. Match the columns:

Column A

Column B

(a) 126÷3 (i) 23

(b) 175 ÷ 5 (ii) 119

(c) 256÷4 (iii) 42

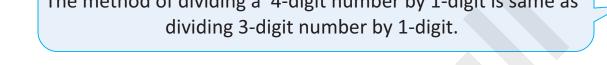
(d) 238÷2

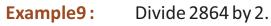
35 (iv)

(e) 138÷6 (v) 64

Dividing 4-digit number by 1-digit

The method of dividing a 4-digit number by 1-digit is same as dividing 3-digit number by 1-digit.





Solution:

Divide 2 Thousands by 2. Step 1

$$2 \div 2 = 1$$

Divide 8 Hundreds by 2. Step 2

$$8 \div 2 = 4$$

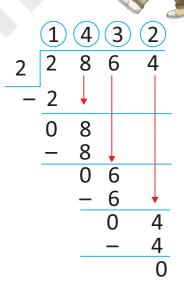
Divide 6 Tens by 2. Step 3

$$6 \div 2 = 3$$

Divide 4 Ones by 2. Step 4

$$4 \div 2 = 2$$

Thus,
$$2864 \div 2 = 1432$$



Division with Remainder

Example 10: Divide 98 by 3.

Solution:

(Start with Tens) Step 1

$$9 \div 3 = 3$$

- (9-9=0) nothing is left.
- Bring down 8 Ones. Step 2

$$8 \div 3 = 2$$

$$(8-6=2)$$

Remainder = 2

If the number does not divide exactly, write the remainder at the end.



Remember!
Dividend = (Divisor × Quotient)
+ Remainder

Example 11: Divide 697 by 3.

Solution:

Step 1 Divide 6 Hundreds by 3.

$$6 \div 3 = 2$$

Step 2 Divide 9 Tens by 3.

$$9 \div 3 = 3$$

Step 3 Divide 7 Ones by 3.

$$3 \times 2 = 6$$

 $3 \times 3 = 9$ (9 is bigger than 7 Ones)

So write 2 in the quotient.

7 Ones – 6 Ones = 1 (Remainder)

Quotient = 232 and Remainder = 1

	2	3	2
3	6	9	7
_	6	↓	
	0	9	
	_	9	\
		0	7
		_	6
			1

Exercise 6.4

Knowledge Application

1. Divide the following:

(a) $3006 \div 6$

(b) $8084 \div 4$

(c) $3639 \div 3$

(d) $3060 \div 3$

(e) 5932÷2

(f) 6482 ÷ 2

(g) $3676 \div 2$

(h) 4048÷4

(i) $8005 \div 5$

2. Divide to find the quotient (Q) and remainder (R):

- (a) $65 \div 8$
- (b) 92÷9
- (c) $243 \div 2$
- (d) $485 \div 4$

- (e) $394 \div 3$
- (f) 302÷3
- (g) $405 \div 4$
- (h) 801÷8

- (i) $121 \div 4$
- (i) 187÷6
- (k) 649÷8
- (I) 817÷9

- (m) $2485 \div 2$
- (n) 3935÷3
- (o) 3620÷3
- (p) 5513÷5

3. Match the column:

Column A

- (a) $638 \div 2$
- (b) $755 \div 5$
- (c) $531 \div 3$
- (d) 886 ÷ 2
- (e) $895 \div 5$

Column B

- (i) 179
- (ii) 177
- (iii) 443
- (iv) 319
- (v) 151

Division with Regrouping

Example 12: Divide 56 by 2.



Solution:

Step 1 Divide 5 Tens by 2.

 $2 \times 2 = 4$ Tens (6 tens is bigger than 5 Tens)

 $2 \times 3 = 6$ Tens (so we take $2 \times 2 = 4$)

Step 2 Write 2 in the quotient

Step 3 Subtract 4 from 5 and get 1 as remainder.

16 is the new dividend.

Step 4 Bring down 6 from Ones place and write it to the right of 1.

 $16 \div 2 = 8$

Step 5 Write 8 in the quotient.

Quotient = 28 (No remainder).

Example 13: Divide 692 by 9.

Solution:

Step 1 Start with Hundreds.

6 is less than the divisor 9.

So we take Hundreds and Tens together.

Step 2 69 is the dividend.

 $69 \div 9 (9 \times 7 = 63)$

So we take $9 \times 7 = 63$

 $69 \div 9 = 7$ (write 7 in the quotient)

Remainder = 6

Step 3 Bring down 2 from Ones place.

62 is the new dividend.

 $62 \div 9 = 6$ (write 6 in the quotient)

Quotient = 76 and Remainder = 8.

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

Verification

Dividend=(Divisor×Quotient)+
Remainder

 $9 \times 76 + 8 = 684 + 8$

684 + 8 = 692

(It is verified)

Division by 10

Example 14: Divide 75 by 10.

Solution: Quotient = 7

Remainder = 5

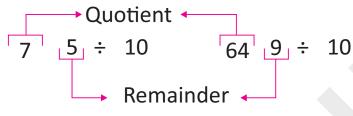
Digit in Ones place is the remainder and digit in

Tens place is the quotient.

Example 15: Divide 649 by 10.

Solution: Quotient = 64

Remainder = 9











Exercise 6.5

Knowledge Application

1. Find the quotient and remainder and verify the answers:

(a)
$$284 \div 3$$

(b)
$$340 \div 6$$

(c)
$$389 \div 4$$

(e)
$$489 \div 7$$

(i)509
$$\div$$
 3

(j)
$$4001 \div 3$$

2. Find the quotient and remainder:

(a)
$$75 \div 10$$

(e)
$$68 \div 10$$

3. Fill in the box without actual division:

(a)
$$453 \div 10$$
 gives, Quotient (Q)



(c)
$$6538 \div 10$$
 gives, Quotient (Q)

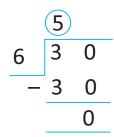


Problems on Division

Example 16: If 6 toffees can be packed in 1 packet. How

many packets are needed to pack 30 toffees?

30 Toffees ÷ 6 Toffees **Solution:**



∴ 5 Packets are needed.

Example 17: The product of two numbers is 48.

If one of them is 8, find he other number.

Solution: In order to find the other number,

we divide 48 by 8.

Thus, the other number is 6.

Example 18: A cycle dealer bought 5 cycles for ₹5965.

Find the price of 1 cycle.

To find the price of 1 cycle, **Solution:**

we need to divide ₹5965 by 5.

Thus, the price of a cycle is ₹ 1193.

Example 19: 9381 mangoes are packed in 3 boxes. How3

many mangoes are packed in a box?

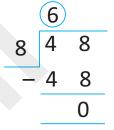
Solution: Number of mangoes packed in 3 boxes = 9381

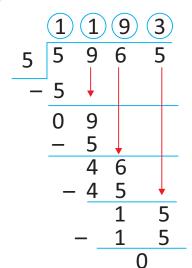
∴ Number of mangoes packed in a box = 9381

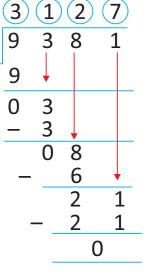
 $\div 3 = 3127$

Therefore, 3127 mangoes are packed in a box.





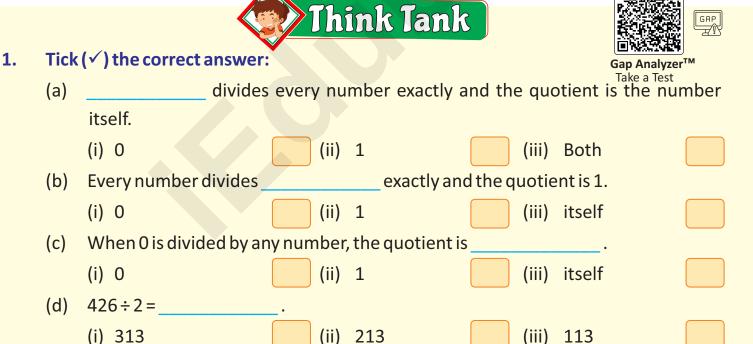




(3)



- 1. A mother distributed 960 rupees equally among her 4 children. How many rupees did each child get?
- 2. If 620 biscuits to be put in 5 packets, how many biscuits will be packed in one packet?
- **3.** Supriya bought 270 roses to make garlands. If she made 9 garlands, how many roses are there in one garland?
- 4. Shivani has 100 stamps. She wants to paste 5 stamps on one page. How many pages are needed for all the stamps?
- 5. 5 buses carry 1095 people. How many people can travel by each bus?
- 6. How many weeks are there in 847 days?
- 7. 484 children are standing in 4 lines. How many children are there in each line?



(e)

345 ÷ = 345

÷3=111

(a)

Match the following: 3.

- (a) $0 \div 792$
- 822÷3 (b)
- (c) $695 \div 5$
- (d) $444 \div 2$
- (e) 224÷4

- (i) 139
- (ii) 222
- (iii) 56
- (iv) 0
- (v) 274



Solve the puzzle:

1.			2.	3.			4.
		5.				6.	
		J.				0.	
7.	8.			9.	10.		
			11.		12.		13.
14.			15.	16.			
		17.				18.	
19.	20.			21.	22.		
	23.			Y /	24.		
			· _				

Across >>>

- 162÷9
- 2. 660 ÷ 6
- 6. 126÷7
- 456÷4 7.
- 9. $714 \div 6$
- 573÷3 12.
- 14. $144 \div 9$
- 15. 798÷7
- 17. 915÷5
- 18. 112÷8
- 740÷4 19.
- 21. $594 \div 3$
- 23. $864 \div 6$
- 24. 830 ÷ 5

Conceptual Learning

Down

- 906÷6
- 1.
- 724÷4 3.
- 4. $266 \div 7$
- 5. $264 \div 6$
- 6. $995 \div 5$ 8. $952 \div 7$
- 10. $342 \div 3$
- 11. $472 \div 4$
- 13. 870 ÷ 5
- 14. $808 \div 8$
- 16. $786 \div 6$
- 17. 770 ÷ 5
- 18. $744 \div 4$
- 20. $729 \div 9$
- 22. 637÷7



Fun Time Activity

Colour the picture with coding colour.

Code

8

11

12

13

5

Colour

Red

Sky

Brown

Pink

Black

1. 24÷2

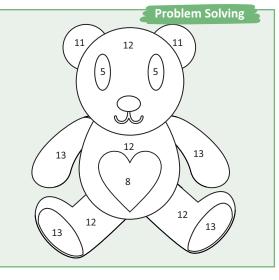
 $2.39 \div 3$

 $3.44 \div 4$

4. $72 \div 9$

5. 56÷7

6. $45 \div 9$





- 1. How many weeks are there in a year (365 days)?
- 2. Which is larger 49×1 or $49 \div 1$?
- 3. Which is smaller $0 \div 7$ or $0 \div 10$?
- 4. Solve $81 \div 9$.
- 5. How many times can you take away 8 from 178?



Maths Lab Activity

Conceptual Learning

Learning objective: To reinforce the understanding of basic division.

Material required: Division fact cards and quotient cards.

Procedure:

- 1. Divide yourselves in pairs and choose a leader to conduct the activity.
- 2. The leader shuffles all the cards division facts and quotient cards and puts them on the upside down.
- 3. The pairs will come forward and flip the cards. Their aim is to find cards that have matching division facts and quotients. For example the '24 ÷ 4' matches the '6' card.
- 4. Player 1 of a pair flips 2 cards. If they match, he/she can keep both the cards. If not, then cards are put back to the stack and placed upside down.
- 5. Player 2 repeats the process as in step 4.
- 6. The pairs continue to flip the cards until all of them have been flipped and matched.
- 7. At the end the pair with the maximum number of cards is the winner.





Critical Thinking

94 children in a class were put into teams of 8 each How many teams did they make? How many children were left out?