5 Multiplication and Division of Smaller Numbers

Multiplication

The repeated addition of the same number can be done by multiplication.

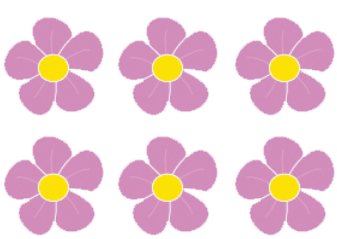
1 bird has two feathers.

5 birds have 2 + 2 + 2 + 2 + 2 = 10 feathers.
In multiplication, it is written as 2 × 5 = 10.
We say that five twos are ten.

1 dogs has 4 legs.

3 dogs have 4 + 4 + 4 = 12 legs.
In multiplication, it is written as 4 × 3 = 12.
We say that three fours are twelve.

1 flower has 5 petals.



6 flowers have 5 + 5 + 5 + 5 + 5 + 5 = 30 petals.
In multiplication, it is written as 5 × 6 =30.
We say six fives are thirty.

Properties of Multiplication

- When a number is multiplied by 0, the product becomes 0.
  For Example : $9 \times 0 = 0$ $62 \times 0 = 0$ $98 \times 0 = 0$
- When 0 is multiplied by a number, the product becomes 0.
  For Example : $0 \times 6 = 0$ $0 \times 86 = 0$ $0 \times 428 = 0$
- When a number is multiplied by 1, the product becomes the number itself.
  For Example : $18 \times 1 = 18$ $82 \times 1 = 82$ $436 \times 1 = 436$

Facts to Know

- Multiplication is the repeated addition of the same numbers.
- $0 + 0 = 0$
  2 times $0 = 0$
  $2 \times 0 = 0$
- $0 + 0 + 0 = 0$
  3 times $0 = 0$
  $3 \times 0 = 0$
- $3 = 3$
  1 time $3 = 3$
  $1 \times 3 = 3$

Exercise 5.1

A. Fill in the blanks.

1. $16 \times$ ..... $= 0$
2. $98 \times 1 =$ .....
3. ..... $\times 18 = 0$
4. $0 \times 0 =$ .....
5. $126 \times$ ..... $= 126$
6. $0 \times 143 =$ .....
7. $175 \times$ ..... $= 0$
8. $1 \times 1 =$ .....
9. $152 \times$ ..... $= 152$
10. ..... $\times 88 = 0$
11. $420 \times 1 =$ .....
12. $1 \times$ ..... $= 198$

Multiplication (Without Carry Over)

Example I : Multiply 12 by 3.

Solution :

Step 1 : Arrange the numbers for multiplication.

Step 2 : 2 ones $\times 3 = 6$ ones
Write 6 in the ones column.

Short form

T	O
1	2
×	3
3	6

Step 3 : 1 ten × 3 = 3 tens
Write 3 in the tens column.
So, 12 × 3 = 36.

Example II : Multiply 43 by 2.

Solution :

Short form

T	O
4	3
×	2
8	6

Step 1 : Arrange the numbers for multiplication.

Step 2 : 3 ones × 2 = 6 ones
Write 6 in the ones column.

Step 3 : 4 tens × 2 = 8 tens
Write 8 in the tens column.
So, 43 × 2 = 86.

Multiplication (With Carry Over)

Example III : Multiply 85 by 3.

Short form

	1
	8 5
×	3
2	5 5

Solution :

Step 1 : Arrange the numbers for multiplication.

Step 2 : 5 ones × 3 = 15 ones = 1 ten + 5 ones
Write 5 in ones column and carry 1 ten to tens column.

Step 3 : 8 tens × 3 = 24 tens = 2 hundred + 4 tens
Now, 4 tens + 1 ten = 5 tens.
Write 5 in the tens column and write 2 in the hundreds column.
So, 85 × 3 = 255.

Example IV : Multiply 46 by 4.

Solution :

Step 1 : Arrange the numbers for multiplication.

Step 2 : 6 ones × 4 = 24 ones = 2 tens + 4 ones

Write 4 in the ones column and carry 2 tens to the tens column.

Step 3 : 4 tens × 4 = 16 tens = 1 hundred + 6 tens

Now, 6 tens + 2 tens = 8 tens.

Write 8 in the tens column and carry 1 in the hundreds column.

So, 46 × 4 = 184.

Short form

$$\begin{array}{r} {\scriptstyle 2} \\ 46 \\ \times\ 4 \\ \hline 184 \end{array}$$

Exercise 5.2

A. Multiply the following.

1.	2.	3.	4.
$\begin{array}{r} 32 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ \times\ 6 \\ \hline \end{array}$	$\begin{array}{r} 02 \\ \times\ 4 \\ \hline \end{array}$

B. Solve the following.

1.	2.	3.	4.
$\begin{array}{r} 84 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ \times\ 4 \\ \hline \end{array}$

Division

Division is a technique of separating a group of things into equal parts. The symbol of division is '÷'.

Sharing or distributing a group of things equally in known as division.

Example V : Suppose 16 mangoes are distributed equally among 4 children. How many groups are there ?

Solution : There are 4 groups.

This is done by dividing 16 by 4.

This is written as $16 \div 4 = 4$.

It is read as 16 divided by 4 is equal to 4.

$$\begin{array}{r} 4 \\ 4\overline{)16} \\ -16 \\ \hline 0 \end{array}$$

Properties of Division

- Any number divided by 1 gives the same number.
  For Example : $12 \div 1 = 12$ $85 \div 1 = 85$ $109 \div 1 = 109$
- A number divided by itself is equal to 1.
  For Example : $82 \div 82 = 1$ $186 \div 186 = 1$ $494 \div 494 = 1$
- Zero divided by any number is zero.
  For Example : $0 \div 65 = 0$ $0 \div 189 = 0$ $0 \div 428 = 0$

Facts to Know

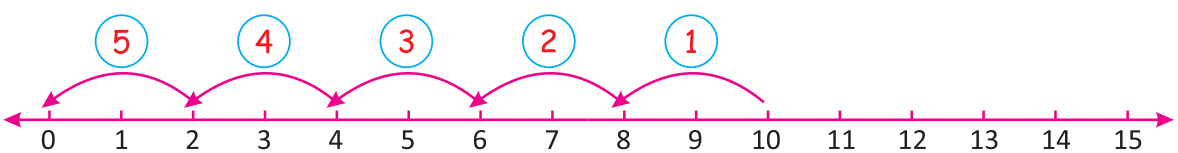
- Division by zero is not possible.

Division on the Number Line

Divide '10' into group of 2.

or $10 \div 2 = 5$

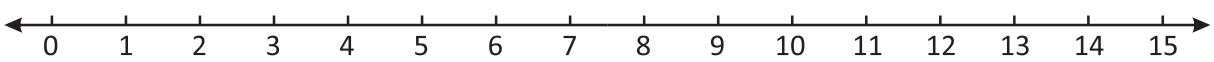
$10 - 2 - 2 - 2 - 2 - 2 = 0$



Exercise 5.3

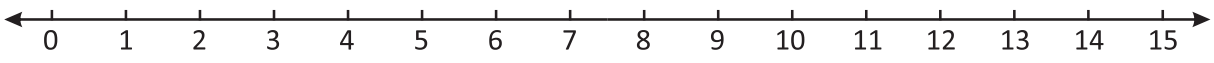
A. Divide on the number line.

1.



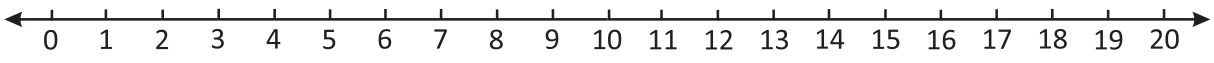
18 ÷ 2 = ☐

2.



10 ÷ 5 = ☐

3.



20 ÷ 4 = ☐

B. Divide the following.

1. Share 25 apples among 5 boys.

25 ÷ 5 = ☐

Each boy will get ☐ apples.

2. Distribute 12 books among 4 girls.

12 ÷ 4 = ☐

Each girl will get ☐ books.

3. A teacher distributed 24 pens equally among 6 students.

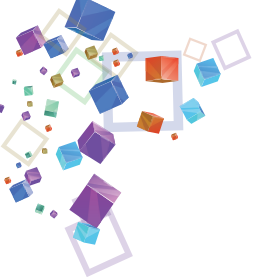
24 ÷ 6 = ☐ Each student will get ☐ pens.

C. Divide the following.

1. 8 ÷ 8 = ☐
2. 9 ÷ 3 = ☐
3. 28 ÷ 4 = ☐
4. 36 ÷ 6 = ☐
5. 50 ÷ 5 = ☐
6. 60 ÷ 10 = ☐

Points to Remember

- Multiplication is the repeated addition of the same numbers.
- When a number multiplied by 0 or 0 multiplied by a number, product becomes 0.
- When a number is multiplied by 1, the product becomes the same number.
- Symbol of multiplication is '×'.
- Division is a repeated subtraction of the same numbers.
- Symbol of division is '÷'.
- 0 divided by any number, result is 0.
- Any number divided by 1, result is the number itself.
- Any number divided by the number itself, result is 1.
- Any number divided by 0, result is undefined.



EXERCISE

A. Multiple Choice Questions (MCQs)

Tick (✓) the correct option :

1. $16 \times 0 =$ .....

   (i) 16 ☐ (ii) 1 ☐ (iii) 0 ☐ (iv) 160 ☐

2. $85 \times 1 =$ .....

   (i) 85 ☐ (ii) 1 ☐ (iii) 0 ☐ (iv) 285 ☐

3. $0 \div 58 =$ .....

   (i) 0 ☐ (ii) 1 ☐ (iii) 58 ☐ (iv) 80 ☐

4. $135 \div 135 =$ .....

   (i) 135 ☐ (ii) 0 ☐ (iii) 35 ☐ (iv) 1 ☐

5. $50 \div 1 =$ .....

   (i) 1 ☐ (ii) 0 ☐ (iii) 50 ☐ (iv) 99 ☐

B. Write as multiplication fact and also find the product.

1. $7+7+7+7$ = ... = ...
2. $2+2+2+2+2+2+2$ = ...= .....
3. $3+3+3+3+3+3$ = ... = ...
4. $4+4+4+4+4$ = ... = ...

C. Find the product.

1. $\begin{array}{r} 1\ 8 \\ \times\ 2 \\ \hline \end{array}$
2. $\begin{array}{r} 4\ 6 \\ \times\ 3 \\ \hline \end{array}$
3. $\begin{array}{r} 3\ 8 \\ \times\ 4 \\ \hline \end{array}$
4. $\begin{array}{r} 3\ 5 \\ \times\ 5 \\ \hline \end{array}$

D. Divide on the number line.

E. Divide the following.

1. $9 \div 9$ 2. $8 \div 4$ 3. $12 \div 3$ 4. $18 \div 6$

F. Divide the following.

1. $8 \overline{)56}$ 2. $6 \overline{)54}$ 3. $5 \overline{)35}$ 4. $7 \overline{)42}$

HOTS

Divide the number 36 by 1 and 0, one by one and find the answer in each case.

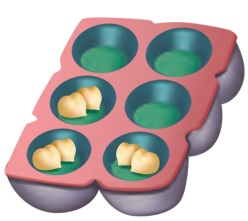
Lab Activity

Objective : To exhibit the understanding of multiplication.

Materials Required : egg-tray, gram seeds and multiplication fact cards (without the answer)

Activities :

- Students can work independently or in pairs with one egg-tray and a bowl of gram seeds.
- One student picks a card say 3×2.
- The other student does the multiplication sum on the egg-tray as shown and says "3 groups of 2".



- The first student then calls out and record the answer "$3 \times 2 = 6$".
- The students repeat the activity with the other cards.

Record the activity :

1.	3×2		$3 \times 2 = 6$
2.			
3.			
4.			
5.			