

# 8

# Multiplication of Bigger Numbers



## Terms of Multiplication

$6 \times 4 = 24$  is read as “6 multiplied by 4 is 24.”

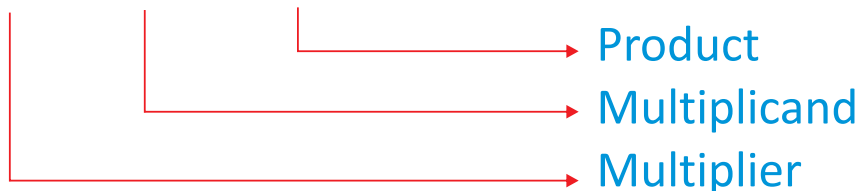
Here 6 is **multiplier**, the number by which another number is **multiplied**.

4 is the **multiplicand**, the number that is being **multiplied**.

24 is the **product**, the result of **multiplication**.

**For Example :**

$$6 \times 4 = 24$$



## Multiplication by 10 and 100

- ❖ In order to multiply a number by 10, simply write a zero (0) after the number.

**For Example :**  $8 \times 10 = 8 \text{ tens} = 80$

$$25 \times 10 = 25 \text{ tens} = 250$$

$$88 \times 10 = 88 \text{ tens} = 880$$

- ❖ In order to multiply a number by 100, simply write two zeros (00) after the number.

**For Example :**  $2 \times 100 = 2 \text{ hundred} = 200$

$$5 \times 100 = 5 \text{ hundred} = 500$$

$$7 \times 100 = 7 \text{ hundred} = 700$$





# Multiplication by Multiples of (10, 20, 30, 40,...)

Multiply 8 by 20.

Multiplying 8 by 2, you get 16. Now, write one zero at the right of the product 16 to get 160.

$$8 \times 20 = 8 \times 2 \text{ tens}$$

$$= 16 \text{ tens}$$

$$= 160$$

Similarly,

$$45 \times 20 = 45 \times 2 \text{ tens}$$

$$= 90 \text{ tens}$$

$$= 900$$



## Exercise 8.1

### A. Multiply the following.

1.  $9 \times 10 = \dots\dots\dots$       2.  $53 \times 10 = \dots\dots\dots$       3.  $7 \times 100 = \dots\dots\dots$

4.  $4 \times 100 = \dots\dots\dots$       5.  $24 \times 20 = \dots\dots\dots$       6.  $15 \times 30 = \dots\dots\dots$

### B. Write the terms of multiplication.

1.  $6 \dots \text{multiplier} \dots \times 2 \dots \text{multiplicand} \dots = 12 \dots \text{product} \dots$

2.  $8 \dots \times 3 \dots = \dots \text{product}$

3.  $\dots \text{multiplier} \times 4 \dots = 28 \dots$

4.  $5 \dots \times 5 \dots = 25 \dots$

5.  $9 \dots \times \dots \text{multiplicand} = 36 \dots$



# Multiplication Tables (1 to 12)



## Multiplication Tables of 1 and 2

$1 \times 1 = 1$	1 one is 1	$2 \times 1 = 2$	2 ones are 2
$1 \times 2 = 2$	1 twos are 2	$2 \times 2 = 4$	2 twos are 4
$1 \times 3 = 3$	1 threes are 3	$2 \times 3 = 6$	2 threes are 6
$1 \times 4 = 4$	1 fours are 4	$2 \times 4 = 8$	2 fours are 8
$1 \times 5 = 5$	1 fives are 5	$2 \times 5 = 10$	2 fives are 10
$1 \times 6 = 6$	1 sixes are 6	$2 \times 6 = 12$	2 sixes are 12
$1 \times 7 = 7$	1 sevens are 7	$2 \times 7 = 14$	2 sevens are 14
$1 \times 8 = 8$	1 eights are 8	$2 \times 8 = 16$	2 eights are 16
$1 \times 9 = 9$	1 nines are 9	$2 \times 9 = 18$	2 nines are 18
$1 \times 10 = 10$	1 tens are 10	$2 \times 10 = 20$	2 tens are 20

## Multiplication Tables of 3 and 4

$3 \times 1 = 3$	3 ones are 3	$4 \times 1 = 4$	4 ones are 4
$3 \times 2 = 6$	3 twos are 6	$4 \times 2 = 8$	4 twos are 8
$3 \times 3 = 9$	3 threes are 9	$4 \times 3 = 12$	4 threes are 12
$3 \times 4 = 12$	3 fours are 12	$4 \times 4 = 16$	4 fours are 16
$3 \times 5 = 15$	3 fives are 15	$4 \times 5 = 20$	4 fives are 20
$3 \times 6 = 18$	3 sixes are 18	$4 \times 6 = 24$	4 sixes are 24
$3 \times 7 = 21$	3 sevens are 21	$4 \times 7 = 28$	4 sevens are 28
$3 \times 8 = 24$	3 eights are 24	$4 \times 8 = 32$	4 eights are 32
$3 \times 9 = 27$	3 nines are 27	$4 \times 9 = 36$	4 nines are 36
$3 \times 10 = 30$	3 tens are 30	$4 \times 10 = 40$	4 tens are 40





## Multiplication Tables of 5 and 6

$5 \times 1 = 5$	5 ones are 5	$6 \times 1 = 6$	6 ones are 6
$5 \times 2 = 10$	5 twos are 10	$6 \times 2 = 12$	6 twos are 12
$5 \times 3 = 15$	5 threes are 15	$6 \times 3 = 18$	6 threes are 18
$5 \times 4 = 20$	5 fours are 20	$6 \times 4 = 24$	6 fours are 24
$5 \times 5 = 25$	5 fives are 25	$6 \times 5 = 30$	6 fives are 30
$5 \times 6 = 30$	5 sixes are 30	$6 \times 6 = 36$	6 sixes are 36
$5 \times 7 = 35$	5 sevens are 35	$6 \times 7 = 42$	6 sevens are 42
$5 \times 8 = 40$	5 eights are 40	$6 \times 8 = 48$	6 eights are 48
$5 \times 9 = 45$	5 nines are 45	$6 \times 9 = 54$	6 nines are 54
$5 \times 10 = 50$	5 tens are 50	$6 \times 10 = 60$	6 tens are 60

## Multiplication Tables of 7 and 8

$7 \times 1 = 7$	7 ones are 7	$8 \times 1 = 8$	8 ones are 8
$7 \times 2 = 14$	7 twos are 14	$8 \times 2 = 16$	8 twos are 16
$7 \times 3 = 21$	7 threes are 21	$8 \times 3 = 24$	8 threes are 24
$7 \times 4 = 28$	7 fours are 28	$8 \times 4 = 32$	8 fours are 32
$7 \times 5 = 35$	7 fives are 35	$8 \times 5 = 40$	8 fives are 40
$7 \times 6 = 42$	7 sixes are 42	$8 \times 6 = 48$	8 sixes are 48
$7 \times 7 = 49$	7 sevens are 49	$8 \times 7 = 56$	8 sevens are 56
$7 \times 8 = 56$	7 eights are 56	$8 \times 8 = 64$	8 eights are 64
$7 \times 9 = 63$	7 nines are 63	$8 \times 9 = 72$	8 nines are 72
$7 \times 10 = 70$	7 tens are 70	$8 \times 10 = 80$	8 tens are 80





## Multiplication Tables of 9 and 10

$9 \times 1 = 9$	9 ones are 9	$10 \times 1 = 10$	10 ones are 10
$9 \times 2 = 18$	9 twos are 18	$10 \times 2 = 20$	10 twos are 20
$9 \times 3 = 27$	9 threes are 27	$10 \times 3 = 30$	10 threes are 30
$9 \times 4 = 36$	9 fours are 36	$10 \times 4 = 40$	10 fours are 40
$9 \times 5 = 45$	9 fives are 45	$10 \times 5 = 50$	10 fives are 50
$9 \times 6 = 54$	9 sixes are 54	$10 \times 6 = 60$	10 sixes are 60
$9 \times 7 = 63$	9 sevens are 63	$10 \times 7 = 70$	10 sevens are 70
$9 \times 8 = 72$	9 eights are 72	$10 \times 8 = 80$	10 eights are 80
$9 \times 9 = 81$	9 nines are 81	$10 \times 9 = 90$	10 nines are 90
$9 \times 10 = 90$	9 tens are 90	$10 \times 10 = 100$	10 tens are 100

## Multiplication Tables of 11 and 12

$11 \times 1 = 11$	11 ones are 11	$12 \times 1 = 12$	12 ones are 12
$11 \times 2 = 22$	11 twos are 22	$12 \times 2 = 24$	12 twos are 24
$11 \times 3 = 33$	11 threes are 33	$12 \times 3 = 36$	12 threes are 36
$11 \times 4 = 44$	11 fours are 44	$12 \times 4 = 48$	12 fours are 48
$11 \times 5 = 55$	11 fives are 55	$12 \times 5 = 60$	12 fives are 60
$11 \times 6 = 66$	11 sixes are 66	$12 \times 6 = 72$	12 sixes are 72
$11 \times 7 = 77$	11 sevens are 77	$12 \times 7 = 84$	12 sevens are 84
$11 \times 8 = 88$	11 eights are 88	$12 \times 8 = 96$	12 eights are 96
$11 \times 9 = 99$	11 nines are 99	$12 \times 9 = 108$	12 nines are 108
$11 \times 10 = 110$	11 tens are 110	$12 \times 10 = 120$	12 tens are 120





## Combined Multiplication Tables

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100



## Multiplication (Without Carry Over)

**Example I :** Multiply 343 by 2.

**Solution :**

**Step 1 :** Arrange the numbers for multiplication.

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

**Step 3 :** 4 tens  $\times$  2 = 8 tens  
Write 8 in the tens column.

**Step 4 :** 3 hundreds  $\times$  2 = 6 hundreds  
Write 6 in hundreds column.  
So,  $343 \times 2 = 686$ .

Short form		
H	T	O
3	4	3
		$\times$ 2
<hr/>		
6	8	6





# Multiplication (With Carry Over)



**Example II** : Multiply 265 by 3.

**Solution** :

**Step 1** : Arrange the numbers for multiplication.

**Step 2** :  $5 \text{ ones} \times 3 = 15 \text{ ones} = 1 \text{ ten} + 5 \text{ ones}$   
Write 5 in the ones column and carry 1 ten to the tens column.

**Step 3** :  $6 \text{ tens} \times 3 = 18 \text{ tens} = 1 \text{ hundred} + 8 \text{ tens}$   
Now,  $8 \text{ tens} + 1 \text{ ten} = 9 \text{ tens}$ .  
Write 9 in the tens column and carry 1 in the hundreds column.

**Step 4** :  $2 \text{ hundreds} \times 3 = 6 \text{ hundreds}$   
Now,  $6 \text{ hundreds} + 1 \text{ hundreds} = 7 \text{ hundreds}$ .  
Write 7 in the hundreds column.  
So,  $265 \times 3 = 795$

1	1	
2	6	5
	$\times$	3
<hr/>		
7	9	5
<hr/>		



# Word Problems

**Example III** : There are 26 seats in a bus.  
How many seats are there in 4 such buses?

**Solution** :

**Step 1** : Arrange the numbers for multiplication.

**Step 2** :  $6 \text{ ones} \times 4 = 24 \text{ ones} = 2 \text{ ten} + 4 \text{ ones}$  write 4 in the ones column and carry 2 tens to the tens column.

**Step 3** :  $2 \text{ tens} \times 4 \text{ tens} = 8 \text{ tens}$ . Now  $8 \text{ tens} + 2 \text{ tens} = 10 \text{ tens}$ .  
Write 10 in the tens column.  
So,  $26 \times 4 = 104$

2		
2	6	
	$\times$	4
<hr/>		
1	0	4
<hr/>		





## Exercise 8.2

### A. Multiply the following.

1. $\begin{array}{r} 320 \\ \times 3 \\ \hline \end{array}$	2. $\begin{array}{r} 244 \\ \times 2 \\ \hline \end{array}$	3. $\begin{array}{r} 213 \\ \times 3 \\ \hline \end{array}$	4. $\begin{array}{r} 314 \\ \times 2 \\ \hline \end{array}$

### B. Solve the following.

1. $\begin{array}{r} 232 \\ \times 4 \\ \hline \end{array}$	2. $\begin{array}{r} 325 \\ \times 3 \\ \hline \end{array}$	3. $\begin{array}{r} 124 \\ \times 5 \\ \hline \end{array}$	4. $\begin{array}{r} 345 \\ \times 2 \\ \hline \end{array}$

C. There are 5 pens in a packet. How many pens are there in 6 packets?

*Answer:* ..... pens

×

D. There are 18 chairs in each room. How many chairs are there in 6 rooms?

*Answer:* ..... chairs

×

E. A Story book has 160 stories. Find the number of Stories in 5 such books.

*Answer:* ..... stories

×

F. A cow has 4 legs. How many legs do 12 cow have?

*Answer:* ..... legs

×







## Points to Remember



- ❖  $5 \times 3$  is read as "5 multiplied by 3 is 15".
  - i) Here, 5 is multiplier, the number by which another number is multiplied.
  - ii) 3 is the multiplicand, the number that is being multiplied.
  - iii) 15 is the product, the result of multiplication.
- ❖ In order to multiply a number by 10, simply write a zero (0) after the number.
- ❖ In order to multiply a number by 100, write two zeros (00) after the number.



## EXERCISE

### A. Multiple Choice Questions (MCQs)

Tick (✓) the correct option:

1. In order to multiply a number by 100, write....zeros after the number.
 

(i) one	<input type="checkbox"/>	(ii) two	<input type="checkbox"/>	(iii) three	<input type="checkbox"/>	(iv) four	<input type="checkbox"/>
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2.  $15 \times 30 = \dots\dots\dots$ 

(i) 45	<input type="checkbox"/>	(ii) 450	<input type="checkbox"/>	(iii) 153	<input type="checkbox"/>	(iv) 0	<input type="checkbox"/>
--------	--------------------------	----------	--------------------------	-----------	--------------------------	--------	--------------------------
3.  $3 \times 100 = \dots\dots\dots$ 

(i) 30	<input type="checkbox"/>	(ii) 100	<input type="checkbox"/>	(iii) 310	<input type="checkbox"/>	(iv) 300	<input type="checkbox"/>
--------	--------------------------	----------	--------------------------	-----------	--------------------------	----------	--------------------------
4.  $253 \times 3 = \dots\dots\dots$ 

(i) 253	<input type="checkbox"/>	(ii) 352	<input type="checkbox"/>	(iii) 759	<input type="checkbox"/>	(iv) 0	<input type="checkbox"/>
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### B. Fill the missing numbers.

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| 1. $245 \times 2 = \dots\dots\dots$   | 2. $220 \times \dots\dots\dots = 660$ |
| 3. $203 \times \dots\dots\dots = 812$ | 4. $266 \times 3 = \dots\dots\dots$   |

### C. Solve the following.

1. If there are 6 mangoes in 1 kg, then how many mangoes are there in 20 kg?
2. There were 8 vans. Each van carried 12 boys. How many boys are carried in all vans?
3. In a class, there are 15 benches. Each bench contains 6 students. How many students are there in the class?



**HOTS**

Complete the following list of food items. First, fill in your daily requirements. Then, find out the quantity needed for a month.

**Note :** For calculating the quantity for 1 month, multiply by 30.

Food Items (per day)	Quantity (per month)	Quantity
Milk (glass)	.....	.....
Chapattis	.....	.....
Sweets	.....	.....
Fruits	.....	.....



**Objective:** To strengthen the concept of multiplication as repeated addition.

**Materials Required :** Two plastic bowls, paper chits on which multiplication sum for numbers 1 to 10 are written and matching chits having same sums written as repeated addition

**Note :** There are two types of chits, one with multiplication (i.e.  $3 \times 5$ ) and other with matching sum (i.e.  $5+5+5$ ).

**Activities :**

- ❖ Divide the class in 2 groups.
- ❖ All the chits to be folded and kept in two plastic bowls.
- ❖ Put 'multiplication' chits in one bowl and "repeated addition" chits in the second bowl.
- ❖ Half the class will pick the 'multiplication' chits from one bowl and the other half will pick the "repeated addition" chits from the other bowl.
- ❖ Both the groups should open chits, when the teacher says 'start'.
- ❖ Each child should try to find the child holding the chit that matches his/her chit. Then, the partners work out the sums on their chits.
- ❖ Note the result.
- ❖ Each child should keep all the chits back into the respective bowls.
- ❖ Keep repeating the activity until each child gets an opportunity of solving at least 5 sums in the above manner

