

Girl's High School & College, Prayagraj
Session:2020-2021
Worksheet -8
Class-5 (A-F)
Subject: Mathematics
Topic: Multiplication

Children have already learnt how to multiply numbers to get products upto 6-digits in previous class. Now they are going to learn how to multiply numbers to get products upto 9-digits.

Parents must ensure that the children learn, understand the concepts and are able to solve the exercise.

In multiplication, the number to be multiplied is **multiplicand**, the number which multiplies is **multiplier** and the result we get after multiplication is called **product**.

MULTIPLICATION IS REPEATED ADDITION

For Example, $12+12+12+12+12+12+12+12=96$

Instead of adding the same number repeatedly, we can multiply the number (12) by the number of times(8) i.e. $12 \times 8 = 96$..[both the results are same]

Exercise:

Fill in the blanks:

1. $23+23+23+23+23+23+23 = \text{---} \times 7$

2. $16+16+16+16+16 = \text{---} \times 5$

3. $30+30+30+30+30+30+30+30+30 = 30 \times \text{---}$

Let us learn tables(16-20)

Sixteen	Seventeen	Eighteen	Nineteen	Twenty
$16 \times 1 = 16$	$17 \times 1 = 17$	$18 \times 1 = 18$	$19 \times 1 = 19$	$20 \times 1 = 20$
$16 \times 2 = 32$	$17 \times 2 = 34$	$18 \times 2 = 36$	$19 \times 2 = 38$	$20 \times 2 = 40$
$16 \times 3 = 48$	$17 \times 3 = 51$	$18 \times 3 = 54$	$19 \times 3 = 57$	$20 \times 3 = 60$
$16 \times 4 = 64$	$17 \times 4 = 68$	$18 \times 4 = 72$	$19 \times 4 = 76$	$20 \times 4 = 80$
$16 \times 5 = 80$	$17 \times 5 = 85$	$18 \times 5 = 90$	$19 \times 5 = 95$	$20 \times 5 = 100$
$16 \times 6 = 96$	$17 \times 6 = 102$	$18 \times 6 = 108$	$19 \times 6 = 114$	$20 \times 6 = 120$
$16 \times 7 = 112$	$17 \times 7 = 119$	$18 \times 7 = 126$	$19 \times 7 = 133$	$20 \times 7 = 140$
$16 \times 8 = 128$	$17 \times 8 = 136$	$18 \times 8 = 144$	$19 \times 8 = 152$	$20 \times 8 = 160$
$16 \times 9 = 144$	$17 \times 9 = 153$	$18 \times 9 = 162$	$19 \times 9 = 171$	$20 \times 9 = 180$
$16 \times 10 = 160$	$17 \times 10 = 170$	$18 \times 10 = 180$	$19 \times 10 = 190$	$20 \times 10 = 200$

Exercise

Dodging tables:

1. $9 \times 19 = \text{---}$

2. $5 \times 17 = \text{---}$

3. $8 \times 16 = \text{---}$

4. $7 \times 18 = \text{---}$

5. $6 \times 20 = \text{---}$

6. $5 \times 16 = \text{---}$

$$7.9 \times 17 = \text{---}$$

As you have learnt tables 16-20, so do

Long Multiplication Using Multiplication Facts (16-20):

e.g. Multiply 1,21,423 by 16

TL	L	T	Th	Th	H	T	O
1	2	1	4	2	3		
							x 1.6
1	9	4	2	7	6	8	

Solution:

Step 1: $3 \times 16 = 48$. We write 8 at ones place in ones column and carry over 4

Step 2: $2 \times 16 + 4 = 36$. We write 6 in tens column and carry over 3.

Step 3: $4 \times 16 + 3 = 67$. We write 7 in hundreds column and carry over 6.

Step 4: $1 \times 16 + 6 = 22$. We write 2 in thousands column and carry over 2.

Step 5: $2 \times 16 + 2 = 34$. We write 4 in ten thousands column and carry over 3.

Step 6: $1 \times 16 + 3 = 19$. We write 9 in lakhs column and 1 in ten lakhs column.

Hence, $1,21,423 \times 16 = 19,42,768$.

Exercise

Multiply using Multiplication Facts 16-20:

1.9837 <u> </u> $\times 16.$	3.84187 <u> </u> $\times 19$
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$2.7129.$ <u> </u> $\times 18$	4.1243709 <u> </u> $\times 20$
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Expanded Notation

Product of a number with a one digit number can be found using expanded notation.

e.g. Multiply: $42,35,612 \times 7$

Solution: $42,35,612 \times 7 = (4000000 + 200000 + 30000 + 5000 + 600 + 10 + 2) \times 7$

$= 4000000 \times 7 + 200000 \times 7 + 30000 \times 7 + 5000 \times 7 + 600 \times 7 + 10 \times 7 + 2 \times 7$

$= 2,80,00,000 + 14,00,000 + 2,10,000 + 35,000 + 4,200 + 70 + 14$

$= 2,96,49,284.$

Exercise

Find the product using expanded notation:

1. $2,325 \times 9$

2. $4,183 \times 8$

3. $29,521 \times 6$

4. $15,736 \times 7$

Multiplication By Numbers Greater Than 20

e.g. Multiply 45,946 by 23.

Solution:

TL	L	TTh	Th	H	T	O	
		1	1		1		→ carried over
		1	2	1	1		→ carried over
		4	5	9	4	6	
				×	2	3	
1		1	1				→ carried over
	1	3	7	8	3	8	
	9	1	8	9	2	0	
1	0	5	6	7	5	8	

Exercise

Multiply:

- 1. 4,05,736 × 32
- 2. 2,51,604 × 52
- 3. 21,456 × 62
- 4. 5,21,097 × 34

Multiplying By 10,100,1000 etc.:

- 1. To multiply by 10, put one zero to the right of the number.
e.g. 61923 × 10 = 619230.
- 2. To multiply by 100, put two zeros to the right of the number.
e.g. 23418 × 100 = 2341800.
- 3. To multiply by 1000, put three zeros to the right of the number.
e.g. 1329 × 1000 = 1329000.

Exercise

Multiply:

- 1. 16825 × 10 = —
- 2. 93842 × 10 = —
- 3. 72384 × 100 = —
- 4. 60156 × 100 = —
- 5. 24613 × 1000 = —
- 6. 39287 × 1000 = —

Multiplication By Multiples Of 10:

e.g. 4,14,232 × 20

Solution: To multiply a number by 20, we multiply the number by 2 and put a zero after it.

4,14,232 × 2 = 8,28,464

(we add a zero after 8,28,464)

So, the product is 82,84,640.

Exercise

Multiply:

1. $72,147 \times 20$

2. $8,000 \times 143$

3. $40 \times 42,428$

4. $98,128 \times 600$

5. $65,912 \times 3000$

Multiplying Two Multiples Of 10:

e.g. Multiply 63000×30

Solution: 63000×30

Let us count the number of zeros. 63,000 has three zeros, 30 has one zero.

Total number of zeros is four. $(3+1)$

$63 \times 3 = 189$ [189 followed by four zeros]

So, $63,000 \times 30 = 18,90,000$

Exercise

Multiply

1. $3,000 \times 600$

2. $4,090 \times 800$

3. $250 \times 5,000$

4. $13,200 \times 4000$

5. $6,700 \times 200$

PROPERTIES OF MULTIPLICATION

Property 1: Product of any number and 1 is that number itself.

e.g. $21345 \times 1 = 21345$ Or, $1 \times 21345 = 21345$

Property 2: The product of two numbers is same even if the order of numbers is changed.

e.g. $2,234 \times 732 = 17,46,988$. Or, $732 \times 2,234 = 17,46,988$.

Property 3: The product of a number and zero(0) is zero (0).

e.g. $14,82,916 \times 0 = 0$. Or, $0 \times 14,82,916 = 0$

Property 4: The product of three numbers is the same even if the grouping of the multiplying numbers is changed.

e.g. $(129 \times 134) \times 1,050 = 17,286 \times 1,050 = 1,81,50,300$

and $129 \times (134 \times 1,050) = 129 \times 1,40,700 = 1,81,50,300$

So, we get the same product in both the cases.

Exercise

Fill in the blanks:

1. $14,82,325 \times 1 = \text{—}$

2. $\text{—} \times 1 = 5,89,346$

3. $7,28,332 \times 0 = \text{—}$

$$4. — \times 1,82,412 = 0$$

$$5. (2,45,319 \times 824) \times 222 = 2,45,319 \times (824 \times 222)$$

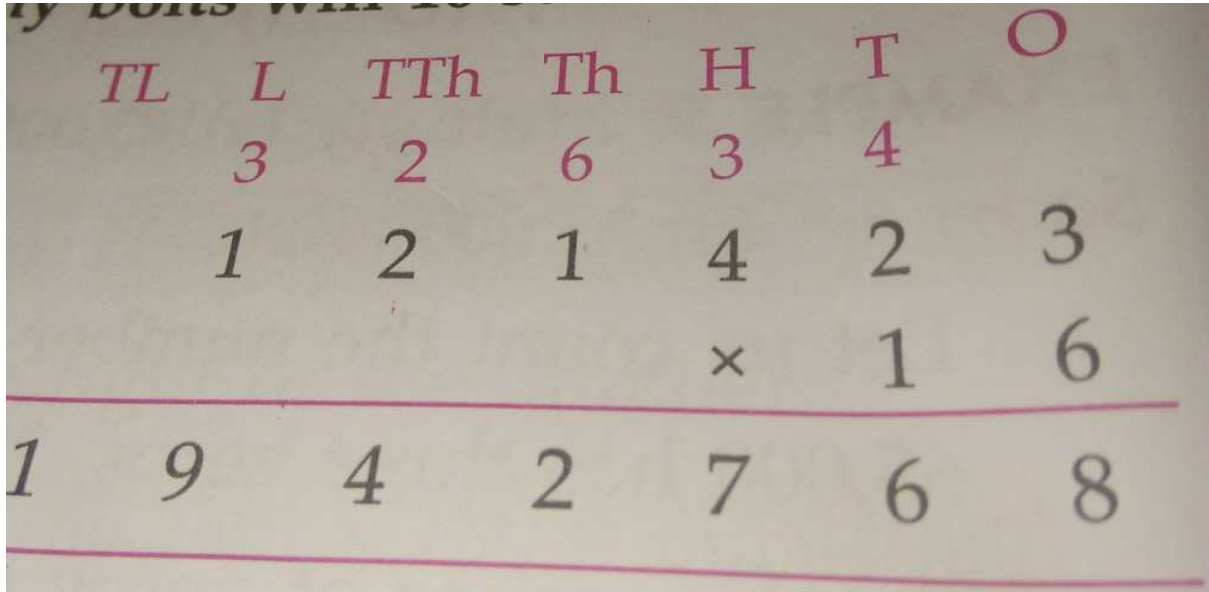
MULTIPLICATION STORIES

e.g. Each box has 1,21,423 bolts. How many bolts will 16 such boxes have?

Solution: Number of bolts in each box = 1,21,423

Number of boxes = 16

Total number of bolts = $1,21,423 \times 16$



So, the box has 19,42,768 bolts. Ans.

Exercise

Solve the following word problems:

1. Rajni walks 5km everyday. How much distance does she walk in 17 days?

2. A factory produces 94,102 cricket bats every week. How many cricket bats will it produce in 20 weeks?

3. Each carton has 24,135 toothbrushes. How many toothbrushes will 316 such cartons have?

4. Each packet has 3,000 balls. How many balls will 4,475 packets have?

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