

4

Multiplication

I Wonder

Why do we need to learn multiplication when we can just add numbers together?



I Would

- Multiply 4-digit numbers by a 1-digit number (C-1.3)
- Define multiplication properties (C-1.3)
- Multiply by a 2-digit and a 3-digit multiplier (C-1.3)
- Multiply by tens, hundreds and thousands (C-1.3)
- Solve story sums based on multiplication (C-1.3)
- Solve questions based on multiplication of money (Ext. C-3.8)
- Identify rules in multiplication patterns (C-1.4)
- Estimate products by rounding off (C-4.3)



I Know

Mr Gorski and Charlie prepare a fruit feast for the stinkbugs. They keep small bowls of freshly cut fruit on the kitchen windowsill for the stinkbugs. Both of them have a lot of fun doing this!

So far, they have kept 25 bowls of fruit on the windowsill. Each bowl has 13 pieces of fruit in it.

Can you find out how many pieces of fruit are there in all the bowls?

fruit pieces



Revision Exercise

1. Multiply.

a. $6 \times 70 =$ _____

b. $4 \times 300 =$ _____

c. $7 \times 500 =$ _____

2. Find the product.

a.

Th	H	T	O
2	4	2	
×			3

b.

Th	H	T	O
1	7	5	
×			4

c.

Th	H	T	O
5	0	8	
×			9

3. Multiply.

a. $198 \times 10 =$ _____

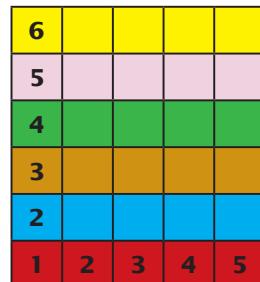
b. $305 \times 100 =$ _____

c. $421 \times 100 =$ _____

4. What are the two different ways in which you can write the addition and the corresponding multiplication fact to find the number of squares given in the picture?

_____ + _____ + _____ + _____ + _____ = _____ \times _____

_____ + _____ + _____ + _____ + _____ + _____ = _____ \times _____



5. Multiply.

a. $332 \times 0 =$ _____

b. $0 \times 498 =$ _____

c. $450 \times 1 =$ _____



Multiplication of 4-Digit Numbers

Let us learn about the terms used in multiplication of two numbers.

The number being multiplied is called the **multiplicand**.

The number by which we multiply is called the **multiplier**.

The answer obtained on multiplication is called the **product**.

25	\times	7	=	175
Multiplicand	Multiplier	Product		



There are different methods by which we can multiply large numbers. We will study some of these methods here.

Column Multiplication

Example: Multiply: 8085×9

1. Write the multiplicand and the multiplier in columns, as shown below. Then, multiply the ones by the multiplier and regroup, if required.

Th	H	T	O
		4	
8	0	8	5
×			9
			5

$$9 \times 5 \text{ ones} = 45 \text{ ones}$$

$$45 \text{ ones} = 4 \text{ tens and } 5 \text{ ones}$$

2. Multiply the tens and regroup, if required.

Th	H	T	O
	7	4	
8	0	8	5
×			9
	6	5	

$$9 \times 8 \text{ tens} = 72 \text{ tens}$$

$$72 \text{ tens} + 4 \text{ tens} = 76 \text{ tens}$$

$$76 \text{ tens} = 7 \text{ hundreds and } 6 \text{ tens}$$

3. Multiply the hundreds and regroup, if required.

Th	H	T	O
	7	4	
8	0	8	5
×			9
7	6	5	

$$9 \times 0 \text{ hundreds} = 0 \text{ hundreds}$$

$$0 \text{ hundreds} + 7 \text{ hundreds} = 7 \text{ hundreds}$$

4. Multiply the thousands.

TTh	Th	H	T	O
		7	4	
8	0	8	5	
×				9
7	2	7	6	5

$$9 \times 8 \text{ thousands} = 72 \text{ thousands}$$

$$\text{So, } 8085 \times 9 = 72,765.$$

Did you know?



Shakuntala Devi, popularly known as the 'human computer', was India's first female mathematician.

In 1980, she multiplied two 13-digit numbers, 7,686,369,774,870 and 2,465,099,745,779 and found a 26-digit product in just 28 seconds!



Multiplication Using Expanded Form

Example: Multiply: 2586×7

1. Write the expanded form of the multiplicand.

$$2586 = 2000 + 500 + 80 + 6$$

2. Multiply the place value of each digit with the multiplier 7.

$$\begin{aligned}(2000 \times 7) + (500 \times 7) + (80 \times 7) + (6 \times 7) \\= 14,000 + 3,500 + 560 + 42 \\= 18,102\end{aligned}$$

So, $2586 \times 7 = 18,102$.



Multiplication Using Lattice Method

In the lattice method of multiplication, a grid is used. The columns of the grid correspond to the number of digits in the multiplicand. The rows of the grid correspond to the number of digits in the multiplier.

Example: Multiply: 6159×5

1. There are 4 digits in the multiplicand, so the grid will have 4 columns.

The multiplier has only 1 digit, so the grid will have only 1 row.

Now, draw a 4 by 1 grid and write the multiplicand and the multiplier, as shown.

2. Each square box of the grid is divided into two halves.

3. The multiplier is multiplied with each digit of the multiplicand, starting from the right.

The product, $9 \times 5 = 45$

4. Write 4 above the slanting line and 5 below the slanting line.

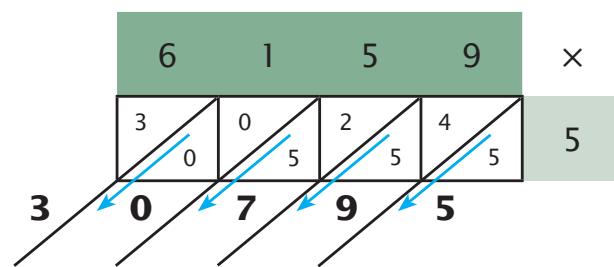
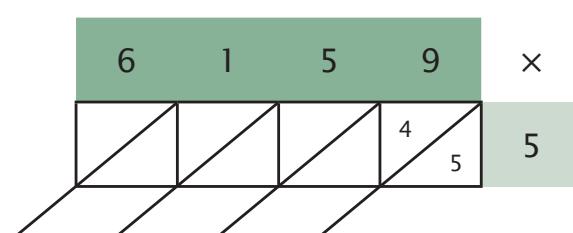
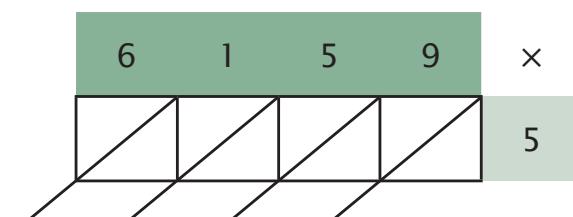
5. Similarly, $5 \times 5 = 25$

Write 2 above the slanting line and 5 below the slanting line in the box below 5 of the multiplicand.

6. Continue in this way and complete the grid.

7. Now, add the digits along the slanting lines and write the sum as shown.

So, $6159 \times 5 = 30,795$.



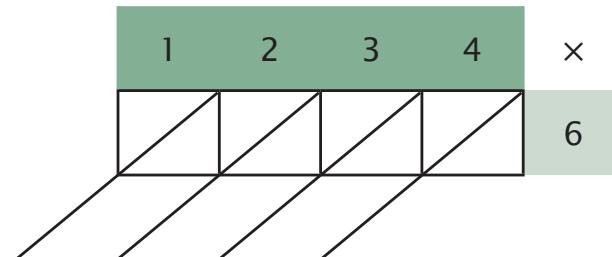


Do It Now

Solve the following.

- a. Multiply using the column method. b. Multiply using the lattice method.

TTh	Th	H	T	O
7	6	2	9	
×				7



Exercise 4.1

1. Write the numbers in columns and multiply.

a. 1598×7 b. 4387×5 c. 3812×9 d. 6539×6

2. Expand the multiplicand and multiply.

a. 6142×8 b. 9276×6 c. 1085×7 d. 6524×3

3. Use the lattice method to multiply.

a. 4531×8 b. 5432×9 c. 6739×6 d. 3563×7

Wonder Wander

Go out for a walk in the neighbourhood park with your father. Take a complete round of the park while walking. Count the number of steps you take. You can also use a step-counting watch or ask your father to install an app on a mobile phone for counting the steps.



Number of steps taken: _____

If you were to take 3 rounds of the same park while walking, how many steps would you have taken in total?

Repeat this activity the next time you go out in the park. This time you could maybe jog or run and have a little more fun!

Properties of Multiplication



Let's Experience

Take a square-grid paper. Now, you and your partner will think of a one-digit number, say 5 and 7. Represent the multiplication facts, 5×7 and 7×5 on the square-grid paper by colouring the appropriate number of rows and columns for each.

Next, find the product of each multiplication fact and write it below the respective grids. What do you notice about the products? Are they the same?

Let us understand about the properties of multiplication.

- 1. Commutative property:** When two numbers are multiplied, the product is the same irrespective of the order of the multiplicand and the multiplier. Commutative property is also known as order property.

For example, $1935 \times 8 = 15,480$ and $8 \times 1935 = 15,480$

$$\text{So, } 1935 \times 8 = 8 \times 1935$$

- 2. Associative property:** When three or more numbers are multiplied, the product remains the same regardless of the way the numbers are grouped.

For example, $(145 \times 25) \times 15 = 3625 \times 15 = 54,375$

$$145 \times (25 \times 15) = 145 \times 375 = 54,375$$

$$(145 \times 15) \times 25 = 2175 \times 25 = 54,375$$

$$\text{So, } (145 \times 25) \times 15 = 145 \times (25 \times 15) = (145 \times 15) \times 25$$

- 3. Multiplicative identity:** The product of any number and 1 is the number itself.

For example, $4773 \times 1 = 4773$ and $1 \times 6323 = 6323$

- 4. Distributive property:** A multiplication fact can be split into the sum of two or more other multiplication facts.

For example, $1468 \times 5 = (1000 + 400 + 60 + 8) \times 5$

$$1468 \times 5 = (1000 \times 5) + (400 \times 5) + (60 \times 5) + (8 \times 5)$$

- 5. Zero property:** The product of any number with 0 is 0.

$$0 \times 0 = 0$$

For example, $9719 \times 0 = 0$ and $0 \times 8361 = 0$



Common Errors

When applying the distributive property, remember to multiply the multiplier with both numbers.

$$\begin{aligned}36 \times 2 &= (30 + 6) \times 2 \\&= 30 \times 2 + 6 \times 2 \\&= 60 + 12 = 72\end{aligned}$$



$$\begin{aligned}36 \times 2 &= (30 + 6) \times 2 \\&= 30 + 6 \times 2 \\&= 30 + 12 = 42\end{aligned}$$



Exercise 4.2

1. Use the multiplication properties and fill in the blanks.

- a. $3285 \times 12 = \underline{\hspace{2cm}} \times 3285$ b. $5832 \times 5 = 5 \times \underline{\hspace{2cm}}$
c. $9375 \times \underline{\hspace{2cm}} = 14 \times 9375$ d. $\underline{\hspace{2cm}} \times 72 = 72 \times 2310$
e. $(142 \times 15) \times 13 = 142 \times (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$
f. $(420 \times \underline{\hspace{2cm}}) \times 10 = 420 \times (15 \times 10)$
g. $(237 \times 25) \times 12 = 237 \times (\underline{\hspace{2cm}} \times 12)$

2. Fill in the blanks.

- a. $518 \times \underline{\hspace{2cm}} = 518$ b. $\underline{\hspace{2cm}} \times 1 = 409$
c. $826 \times \underline{\hspace{2cm}} = 0$ d. $512 \times 12 \times 0 = \underline{\hspace{2cm}}$

3. Fill in the blanks.

- a. $134 \times 5 = (100 + 30 + \underline{\hspace{2cm}}) \times 5$
 $= (100 \times \underline{\hspace{2cm}}) + (30 \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$
- b. $236 \times 8 = (200 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}) \times 8$
 $= (200 \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$
- c. $579 \times 4 = (500 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}) \times 4$
 $= (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$
- d. $2125 \times 4 = (2000 + \underline{\hspace{2cm}} + 20 + \underline{\hspace{2cm}}) \times \underline{\hspace{2cm}}$
 $= (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$
 $+ (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$

Multiplication by a 2-Digit Multiplier

Column Method

Example 1: Multiply: 179×25

1. Multiply by the ones.

Th	H	T	O
3	4		
1	7	9	
x	2	5	$\leftarrow 20 + 5$
8	9	5	$\leftarrow 179 \times 5$

2. Multiply by the tens
and add the products.

Th	H	T	O
	1	1	
3	4		
1	7	9	
x	2	5	
8	9	5	
+ 3	5	8	0
4	4	7	5

So, $179 \times 25 = 4,475$.

Example 2: Multiply: 2265×28

1. Multiply by the ones.

TTh	Th	H	T	O
2	5	4		
2	2	6	5	
x		2	8	
1	8	1	2	0

2. Multiply by the tens
and add the products.

TTh	Th	H	T	O
		1	1	
2	5	4		
2	2	6	5	
x		2	8	
1	8	1	2	0
+ 4	5	3	0	0
6	3	4	2	0

So, $2265 \times 28 = 63,420$.





Let's Explore

Find out about hibernation. For how many months does a brown bear hibernate in a year? Convert this time into hours.

Also, organize a group discussion in the class on why hibernation is important for some animals.

Lattice Method



Example: Find the product of 4259 and 23 using the lattice method.

1. Arrange the multiplicand in the columns and the multiplier along the rows as shown.

2. Start multiplying with 2.

$$9 \times 2 = 18$$

In the box below 9 in the first row, write 8 below the slanting line and 1 above the slanting line.

4	2	5	9	\times	
0	8	0	4	1	0
1	0	1	8		2

3. Multiply the other digits of the multiplicand by 2 and write the products in the relevant boxes of the first row.

4. In a similar way, multiply each digit of the multiplicand with the digit 3 of the multiplier. Write each product in the correct box of the second row.

5. Finally, add up the digits along each slanting line and write the sum. Any carry-over number is added to the sum in the next higher place.

4	2	5	9	\times	
0	8	0	4	1	0
1	2	0	6	1	5
9	7	5	7	1	7

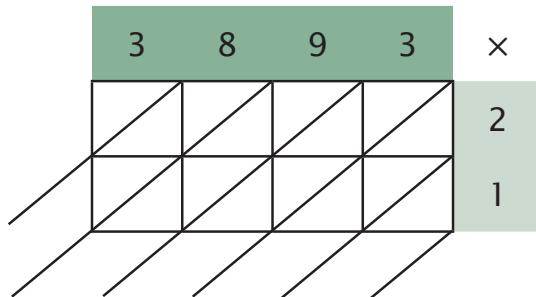
$$\text{So, } 4259 \times 23 = 97,957.$$



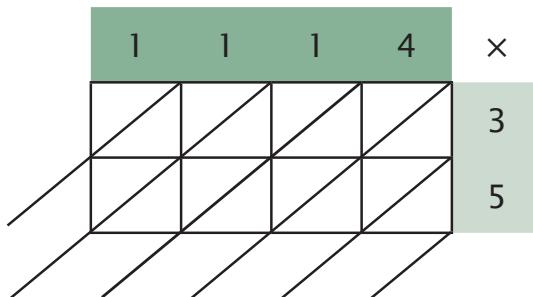
Do It Now

Multiply using the lattice method.

a. 3893×21



b. 1114×35



Exercise 4.3

1. Arrange in columns and find the product.

a. 377×18

b. 206×39

c. 432×32

d. 1432×32

2. Use the lattice method to find the product.

a. 181×47

b. 414×35

c. 2470×14

d. 2012×46

Multiplication by a 3-Digit Multiplier

Column Method

Example 1: Multiply: 456×217

$$456 \times 217 = 456 \times (200 + 10 + 7)$$

1. Arrange the numbers in columns, as shown.

2. First, multiply the multiplicand with the ones digit of the multiplier.

$$456 \times 7 = 3192 \text{ (product 1)}$$

3. Then, multiply the multiplicand by the tens digit of the multiplier.

$$456 \times 10 = 4560 \text{ (product 2)}$$

4. Next, multiply the multiplicand by the hundreds digit of the multiplier.

$$456 \times 200 = 91200 \text{ (product 3)}$$

5. Finally, add the three products.

$$\text{So, } 456 \times 217 = 98,952.$$

\times		4	5	6	
		2	1	7	
<hr style="border-top: 1px solid black;"/>					
		3	1	9	2
		4	5	6	0
		9	1	2	0
		9	8	9	5

Example 2: Multiply: 5121×126

$$5121 \times 126 = 5121 \times (100 + 20 + 6)$$

		5	1	2	1
\times		1	2	6	
<hr/>					
	3	0	7	2	6
	1	0	2	4	2
$+$	5	1	2	1	0
	6	4	5	2	4
					6

$$\rightarrow 5121 \times 6$$

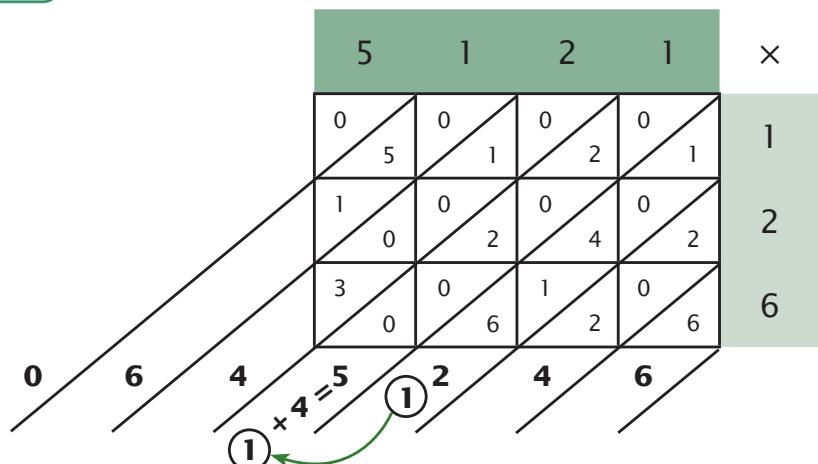
$$\rightarrow 5121 \times 20$$

$$\rightarrow 5121 \times 100$$

Lattice Method

Example: Multiply 5121 and 126 using the lattice method.

So, $5121 \times 126 = 6,45,246$.



Exercise 4.4

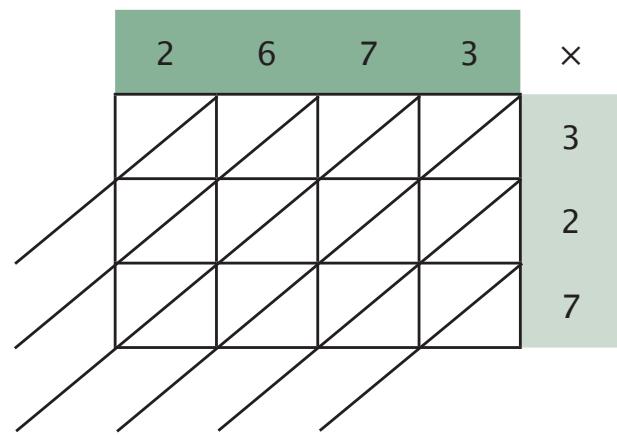
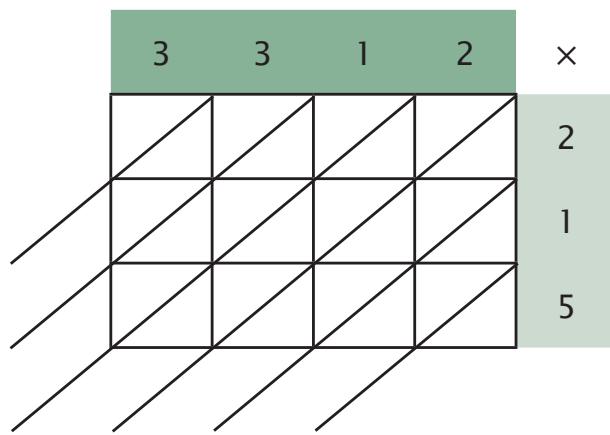
1. Arrange in columns and find the product.

- a. 265×198 b. 212×342 c. 416×137
d. 3417×225 e. 1888×484 f. 2415×232

2. Use the lattice method to find the product.

a. 3312×215

b. 2673×327



Multiplication by Tens, Hundreds and Thousands

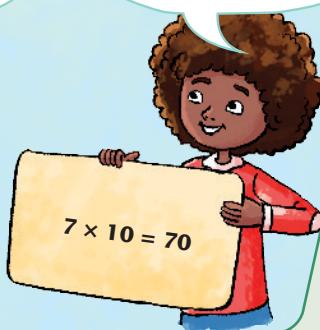


Comic Adventures

Skoki, how do we multiply by 10?



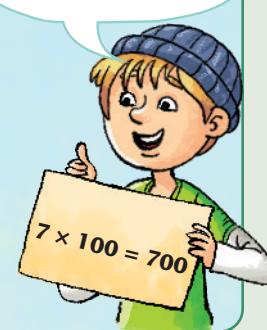
That's so simple! just add one zero at the end.



Charlie, what about multiplying by 100?



Ah! Just add two zeros at the end and you've done well!



You know how to multiply by 10 and 100. Now let us see how to multiply by tens and hundreds.

Multiplication by Tens

$$865 \times 20 = 865 \times 2 \text{ tens} = 1730 \text{ tens} = 17,300$$

$$2046 \times 40 = 2046 \times 4 \text{ tens} = 8184 \text{ tens} = 81,840$$

Multiplication by Hundreds

$$314 \times 300 = 314 \times 3 \text{ hundreds} = 942 \text{ hundreds} = 94,200$$

$$1258 \times 600 = 1258 \times 6 \text{ hundreds} = 7548 \text{ hundreds} = 7,54,800$$

Multiplication by 1000

When we multiply by 1000, we will have that many thousands as the answer. These thousands may then have to be regrouped to ten thousands and thousands, if required. For example,

$$9 \times 1000 = 9 \text{ times } 1000 = 9 \text{ thousands} = 9000$$

$$38 \times 1000 = 38 \text{ times } 1000 = 38 \text{ thousands}$$

$$= 3 \text{ ten thousands } 8 \text{ thousands} = 38,000$$

10 thousands =
1 ten thousand

Multiplication by Thousands

$$6 \times 4000 = 6 \times 4 \text{ thousands} = 24 \text{ thousands} = 24,000$$

$$15 \times 5000 = 15 \times 5 \text{ thousands} = 75 \text{ thousands} = 75,000$$

$$35 \times 2000 = 35 \times 2 \text{ thousands} = 70 \text{ thousands} = 70,000$$

Observe the above numbers carefully. What do you notice in the ones, tens and hundreds places?



Do It Now

1. Use multiplication facts and patterns to find the product.

a. $6402 \times 50 =$ _____ b. $5125 \times 40 =$ _____

c. $90 \times 900 =$ _____ d. $80 \times 4000 =$ _____

e. $70 \times 8000 =$ _____ f. $12 \times 5000 =$ _____

2. Fill in the missing numbers.

a. $60 \times$ _____ = 3600 b. _____ $\times 12 = 960$

c. $169 \times$ _____ = 1,69,000 d. _____ $\times 25 = 75,000$

Story Sums

Example 1: Charlie's mother was gardening over the weekend and found stinkbugs coming out of the soil. They seemed hungry, so she dug 4 small holes in the soil and filled each of them with 1256 tiny food pieces. How many food pieces did she use in total?



Number of food pieces in 1 hole = 1256

Number of holes = 4

Total number of food pieces used = 1256×4

So, Charlie's mother used a total of 5024 food pieces.

Th	H	T	O
1	2	2	
1	2	5	6
x			
5	0	2	4

Example 2: If 8,333 sheets of paper can be made from one tree, how many sheets of paper can be made from 119 trees?

$$\text{Number of sheets of paper from 1 tree} = 8,333$$

$$\text{Number of trees} = 119$$

$$\begin{aligned}\text{Number of sheets of paper from 119 trees} \\ = 8,333 \times 119\end{aligned}$$

So, 9,91,627 sheets of paper can be made from 119 trees.

L	TTh	Th	H	T	O
		8	3	3	3
			1	1	9
	7	4	9	9	7
	8	3	3	3	0
+ 8	3	3	3	0	0
9	9	1	6	2	7

Do It Now



There are 4,879 worker bees in a beehive. Each bee visits 125 flowers every day to collect nectar. How many flowers in total do all the bees in the beehive visit in a day? _____

Multiplication with Money

Multiplication with money is similar to multiplication with numbers. You already know how to convert paise to rupees and rupees to paise.

Example 1: Multiply: ₹79 45 p \times 23

$$\text{₹79 } 45 \text{ p} \times 23 = \text{₹79} \times 23 + 45 \text{ p} \times 23$$

₹			
\times	7	9	
	2	3	
	2	3	7
+ 1	5	8	0
1	8	1	7

p			
\times	4	5	
	2	3	
	1	3	5
+ 9	0	0	0
1	0	3	5

$$\text{₹79} \times 23 = \text{₹1817}$$

$$45 \text{ p} \times 23 = 1035 \text{ p} = 1000 \text{ p} + 35 \text{ p} = \text{₹}10 + 35 \text{ p}$$

$$\text{So, ₹79 } 45 \text{ p} \times 23 = \text{₹1817} + \text{₹}10 + 35 \text{ p} = \text{₹1827 } 35 \text{ p.}$$

Remember

1 rupee = 100 paise



Example 2: A small packet of cauliflower seeds costs ₹125 75 p.

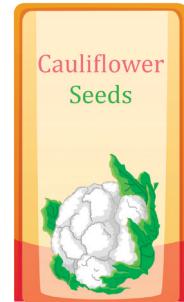
What will be the cost of 28 such packets?

The cost of 1 packet of seeds = ₹125 75 p

The cost of 28 packets of seeds = ₹125 75 p × 28

₹	1	2	5
×		2	8
	1	0	0
+	2	5	0
	3	5	0

p	7	5	
×		2	8
	6	0	0
+	1	5	0
	2	1	0



$$₹125 \times 28 = ₹3500$$

$$75 \text{ p} \times 28 = 2100 \text{ p} = ₹21$$

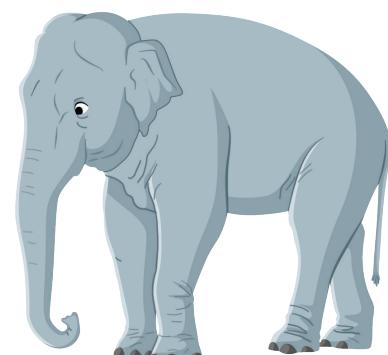
$$₹3500 + ₹21 = ₹3521$$

So, 28 packets of cauliflower seeds will cost ₹3,521.

Exercise 4.5

Solve the given story sums.

1. The elephant is the largest mammal on land. If an elephant weighs 5,235 kg, then what would be the weight of 6 such elephants?
2. The cost of a book is ₹175 75 p. What will be the cost of 12 such books?
3. A pack of cheese costs ₹275 and a pack of bread costs ₹45 50 p. What is the total cost of 2 packs of cheese and 3 packs of bread?
4. A forest has 109 banyan trees. If a banyan tree can have up to 3600 aerial roots, then how many such roots would be there in all the banyan trees in the forest?



Patterns in Multiplication



If we observe the multiplication tables, we will notice that a pattern emerges from them. Some of these patterns are given below.

2 times table

1×2	=	02	$0 + 2$	2	Even numbers
2×2	=	04	$0 + 4$	4	
3×2	=	06	$0 + 6$	6	
4×2	=	08	$0 + 8$	8	
5×2	=	10	$1 + 0$	1	
6×2	=	12	$1 + 2$	3	
7×2	=	14	$1 + 4$	5	
8×2	=	16	$1 + 6$	7	
9×2	=	18	$1 + 8$	9	
10×2	=	20	$2 + 0$	2	

3 times table

1×3	=	03	$0 + 3$	3
2×3	=	06	$0 + 6$	6
3×3	=	09	$0 + 9$	9
4×3	=	12	$1 + 2$	3
5×3	=	15	$1 + 5$	6
6×3	=	18	$1 + 8$	9
7×3	=	21	$2 + 1$	3
8×3	=	24	$2 + 4$	6
9×3	=	27	$2 + 7$	9
10×3	=	30	$3 + 0$	3

The pattern
3, 6, 9 is
repeated.

For each of the following, observe the pattern first. Then use it to fill in the missing numbers.

a. $7 \times 2 = 14$

$7 \times 20 = 140$

$7 \times 200 = \underline{\hspace{2cm}}$

$7 \times 2000 = \underline{\hspace{2cm}}$

$7 \times 20000 = \underline{\hspace{2cm}}$

b. $6 \times 2 = 12$

$6 \times 22 = 132$

$6 \times 222 = 1332$

$6 \times 2222 = \underline{\hspace{2cm}}$

$6 \times 22222 = \underline{\hspace{2cm}}$



Challenge

Find the pattern emerging from:

- a. multiplication table of 8
- c. multiplication table of 5



- b. multiplication table of 6
- d. multiplication table of 9

Estimating Products

We can estimate the product of two numbers by rounding off one or both the numbers. Rounding off can be done to the nearest 10, 100 or 1000, as required.

Example 1: Round off to the nearest ten and estimate the product of 88 and 61.

$$88 \times 61 \approx 90 \times 60 = 5400$$



Remember

The ‘ \approx ’ symbol is used to indicate that the value is not exactly equal but approximately equal.

Example 2: Round off to the nearest hundred and estimate the product of 318 and 372.

$$318 \times 372 \approx 300 \times 400 = 1,20,000$$

Example 3: Round off the multiplicand to the nearest thousand and the multiplier to the nearest 10 to estimate the product of 7243×65 .

$$7243 \times 65 \approx 7000 \times 70 = 4,90,000$$

Example 4: A truck loaded with 7654 mangoes is to be taken to a wholesale market. Approximately how many mangoes can be loaded onto 84 such trucks?

Number of mangoes in 1 truck = 7654

Number of mangoes in 84 trucks = $7654 \times 84 \approx 8000 \times 80 \approx 6,40,000$

So, 84 trucks can be loaded with approximately 6,40,000 mangoes.



Exercise 4.6

1. Estimate the following products by rounding off each number to the nearest ten.

- a. 21×45 b. 39×41 c. 38×47 d. 77×52 e. 15×28

2. Estimate the following products by rounding off each number to the nearest hundred.

- a. 357×231 b. 287×297 c. 641×278 d. 1282×118

3. Read the story sums. Round off each number to its greatest place value and estimate the product.



- a. Last month, 421 buses were used to take people on a jungle safari. Each bus could carry 392 tourists. Approximately how many tourists went for the safari in all?

- b. 1,273 people visited the cafeteria in an animal sanctuary, every day at lunch time. Approximately how many people would have visited the cafeteria in 29 days?



- c. If an ATM is used by 2,548 people each day, approximately how many people would use it in 31 days?



Let's Practise



1. Find the product using the column method.

a. 839×94 b. 584×76 c. 9669×99 d. 2151×75

2. Multiply.

a. 312×216 b. 2414×364 c. 2109×153 d. 236×412

3. Use the lattice method to multiply.

a. 5164×7 b. 9840×35 c. 6676×145 d. 2292×413

4. Fill in the blanks.

a. $7000 \times \underline{\hspace{2cm}} = 4,90,000$ b. $\underline{\hspace{2cm}} \times 300 = 1,80,000$

c. $30 \times \underline{\hspace{2cm}} = 1,20,000$ d. $80 \times \underline{\hspace{2cm}} = 4,80,000$

5. Round off each number to its greatest place value and estimate the product.

a. $735 \times 49 =$ _____

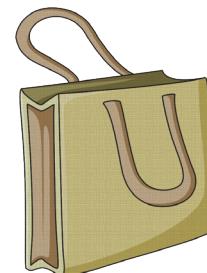
b. $209 \times 874 =$ _____

c. $4321 \times 34 =$ _____

d. $1639 \times 378 =$ _____

6. Solve the given story sums.

- a. A manufacturing company produces 2,578 jute bags in a week. How many jute bags can it produce in 32 weeks?



- b. Aradhna paints pictures of nature and sells them at art shows. She charges ₹2,580 for a small painting. Last month, she sold 6 small paintings. How much did she earn in all?

- c. The price of a watch is ₹1,560. What will be the price of 23 such watches?



Case-study based questions



7. Read the paragraph below and answer the following questions.

Ayurveda is a system of medicine that uses plants to treat illness. To promote good digestion, an Ayurveda doctor prepares ginger candies for her patients. She uses 135 grams of ginger to prepare one batch of candies and then packs them in packets for distribution. One packet contains 50 ginger candies.

- How much ginger will she need if she wants to prepare 12 batches of ginger candies?
- If the cost of one packet of ginger candies is ₹98.50 p, how much money does a chemist pay to buy 25 packets of the candies?
- Aditya is a shopkeeper. He bought 132 packets of ginger candies for his shop. How many candies would be there in all?

Colour the face that expresses your understanding of the concepts.



Maths Lab Activity

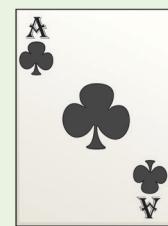
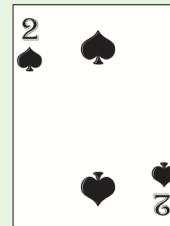
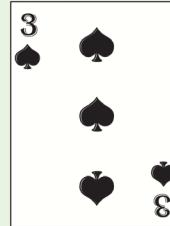
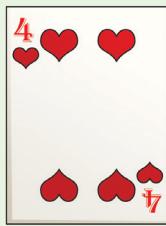


Objective: To reinforce the concept of multiplication

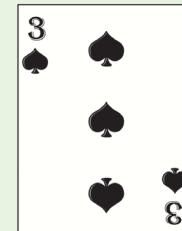
Materials required: 2–3 packs of playing cards without the picture cards (Jacks, Queens and Kings), assume that Aces = 1 and 10s = 0, a calculator

Steps:

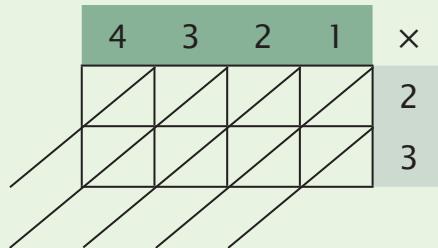
1. Divide the students into groups of 4.
2. The required pack of cards will be shuffled and kept in the centre, face down.
3. Each group will pick 4 cards and form a 4-digit number. This will be the multiplicand.



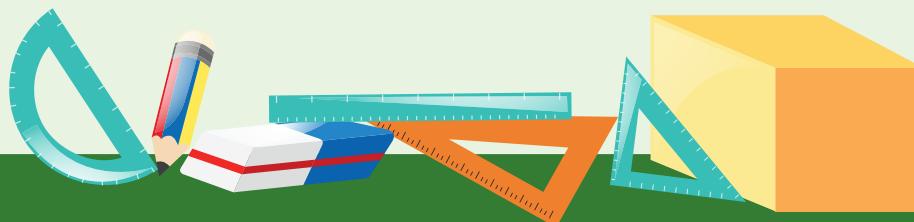
4. The rest of the cards will be kept face down.
5. Again, each group will pick any 2 cards from the pile and form a 2-digit number. This will be the multiplier.



6. One student will multiply using the column method, the second student will multiply by the lattice method, the third student will estimate the product by rounding off each number to the nearest ten and the fourth student will use a calculator.



This multiplication activity can be played in the form of a game. The group which completes maximum number of sums in a specified time is the winner.



A Value for You

A botanical garden enables visitors to experience different varieties of plants and provides opportunities for learning. It also promotes protection and conservation of plant diversity of a region. In a particular month, 2579 visitors visited the Botanical Garden.

Each visitor had to pay ₹55 for the entry ticket. What was the total money collected? _____

Take a pledge to protect trees. Also, talk to your friends and relatives about protecting trees.



I Can

I can do it on my own.

I can do it with help.

Multiply 4-digit numbers by a 1-digit number

Define multiplication properties

Multiply by a 2-digit and a 3-digit multiplier

Multiply by tens, hundreds and thousands

Solve story sums based on multiplication

Solve questions based on multiplication of money

Identify rules in multiplication patterns

Estimate products by rounding off

Theme-End Practice Exercise

1. Fill in the blanks.

- The answer obtained on multiplication is called the _____.
- A pentagon has _____ sides.
- Any number multiplied by _____ gives 0 as the product.
- $56 \times 300 =$ _____
- $70 \times 5000 =$ _____

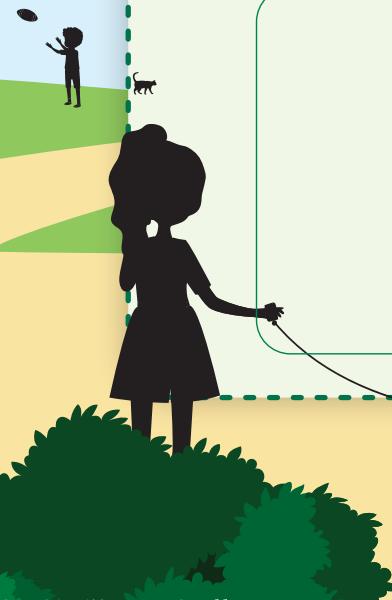
2. Multiply the following.

- | | | | |
|---------------------|---------------------|---------------------|---------------------|
| a. 2345×5 | b. 5136×4 | c. 807×62 | d. 675×45 |
| e. 7810×13 | f. 9903×29 | g. 942×103 | h. 836×177 |

3. Solve the following story sums.

- A quiz contest was organized in Aman's colony as part of the 'Green City Campaign'. Different teams took part in the contest. Aman's team gave 135 correct answers. How many points did the team earn in all if each correct answer gave 12 points?
- Mr Raza has 25 apple trees in his orchard. If each tree provides 1029 apples, how many apples do all 25 trees provide?

4. Create a beautiful tessellation using any two of the given tiles.



Life Skills

Ruchika and her brother save ₹75 every week. How much money would they be able to save after 4 weeks (1 month)?

Money saved in 1 month: ₹_____

If they continue saving the same amount of money every month, find out how much money they would be able to save in 1 year (12 months). ₹_____

Saving money is an important life skill. It teaches you to manage money wisely and also helps you reach your goals. Find an old jar at home and whenever you get some pocket money, save a portion of it by putting it in the jar.

Tell your parents why saving money is important for you and discuss with them the ways in which you could use the saved money.



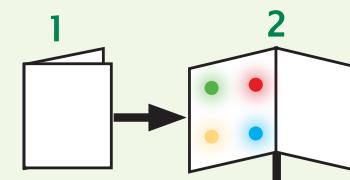
Fun Task



Inkbolt Art

Take an A-4 size blank sheet of paper and four paint tubes of different colours.

1. Fold the paper in half along the length, creasing the middle.
2. Spill drops of four different colours in the middle of the open paper.
3. Fold the paper and rub it from the crease towards the outside to spread the colour.
4. Open the paper to see the beautiful, colourful and symmetrical pattern formed.



To see it,
you have
to do it
yourself!