

B The time taken by each planet to move once around the sun is shown above. Multiply the time by the given numbers. Type the correct letters matched to the products in the to find the hidden message. **ANS**

1. $\begin{array}{r} 88 \\ \times 4 \\ \hline \end{array}$	2. $\begin{array}{r} 225 \\ \times 3 \\ \hline \end{array}$	3. $\begin{array}{r} 365 \\ \times 2 \\ \hline \end{array}$	4. $\begin{array}{r} 687 \\ \times 2 \\ \hline \end{array}$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
I	E	R	O
5. $\begin{array}{r} 165 \\ \times 8 \\ \hline \end{array}$	6. $\begin{array}{r} 12 \\ \times 35 \\ \hline \end{array}$	7. $\begin{array}{r} 29 \\ \times 42 \\ \hline \end{array}$	8. $\begin{array}{r} 84 \\ \times 19 \\ \hline \end{array}$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
N	U	S	V
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1374	420	730	420
	1320	352	1596
	675	730	1218
	675		

PROPERTIES OF MULTIPLICATION



Numbers can be multiplied in any order, the product remains the same.

$$8 \times 7 = 56 \leftarrow \text{is the same as } 7 \times 8 = 56 \quad | \quad 5 \times 15 = 75 \leftarrow \text{is the same as } 15 \times 5 = 75$$



The factors can be grouped in any way, the product remains the same.

$$(5 \times 2) \times 6 = 10 \times 6 = 60 \quad | \quad 5 \times (2 \times 6) = 5 \times 12 = 60$$



When a number is multiplied by 1, the product is the number itself.

$$6 \times 1 = 6 \quad | \quad 23 \times 1 = 23 \quad | \quad 578 \times 1 = 578$$



When a number is multiplied by 0, the product is 0.

$$6 \times 0 = 0 \quad | \quad 23 \times 0 = 0 \quad | \quad 578 \times 0 = 0$$

MULTIPLICATION BY A 1-DIGIT NUMBER

Vertical method

EXAMPLE 1 Multiply 379 by 7.

$$\begin{array}{r} 379 \\ \times 7 \\ \hline \end{array} \rightarrow \begin{array}{r} 569 \\ \times 7 \\ \hline \end{array} \rightarrow \begin{array}{r} 569 \\ \times 7 \\ \hline 2653 \end{array}$$

7×9 ones = 63 ones
Regroup 63 ones into
6 tens and 3 ones.

ANS. 2653

7×7 tens = 49 tens
49 tens + 6 tens
(carried over from ones)
= 55 tens
Regroup 55 tens into
5 hundreds and 5 tens.

7×3 hundreds = 21 hundreds
21 hundreds + 5 hundreds
(carried over from tens)
= 26 hundreds
Regroup 26 hundreds into
2 thousands and 6 hundreds.

EXAMPLE 2 Find 1438×5 .

$$\begin{array}{r} 1438 \\ \times 5 \\ \hline 0 \end{array} \rightarrow \begin{array}{r} 1438 \\ \times 5 \\ \hline 90 \end{array} \rightarrow \begin{array}{r} 21438 \\ \times 5 \\ \hline 190 \end{array} \rightarrow \begin{array}{r} 21438 \\ \times 5 \\ \hline 7190 \end{array}$$

$$\begin{array}{l} 5 \times 8 \text{ O} = 40 \text{ O} \\ = 4 \text{ T} + 0 \text{ O} \end{array}$$

$$\begin{array}{l} 5 \times 3 \text{ T} = 15 \text{ T} \\ 15 \text{ T} + 4 \text{ T} = 19 \text{ T} \\ = 1 \text{ H} + 9 \text{ T} \end{array}$$

$$\begin{array}{l} 5 \times 4 \text{ H} = 20 \text{ H} \\ 20 \text{ H} + 1 \text{ H} = 21 \text{ H} \\ = 2 \text{ Th} + 1 \text{ H} \end{array}$$

$$\begin{array}{l} 5 \times 1 \text{ Th} = 5 \text{ Th} \\ 5 \text{ Th} + 2 \text{ Th} = 7 \text{ Th} \end{array}$$

ANS. 7190



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Horizontal method

EXAMPLE 3 Multiply 326 by 3.

Step 1 $6 \text{ O} \times 3 = 18 \text{ O} = 1 \text{ T} + 8 \text{ O}$

Step 2 $2 \text{ T} \times 3 = 6 \text{ T}$; $6 \text{ T} + 1 \text{ T} = 7 \text{ T}$

Step 3 $3 \text{ H} \times 3 = 9 \text{ H}$

ANS. 978

EXAMPLE 4 Find 1426×4 .

Step 1 $6 \text{ O} \times 4 = 24 \text{ O} = 2 \text{ T} + 4 \text{ O}$

Step 2 $2 \text{ T} \times 4 = 8 \text{ T}$; $8 \text{ T} + 2 \text{ T} = 10 \text{ T}$

$10 \text{ T} = 1 \text{ H} + 0 \text{ T}$

Step 3 $4 \text{ H} \times 4 = 16 \text{ H}$; $16 \text{ H} + 1 \text{ H} = 17 \text{ H}$

$17 \text{ H} = 1 \text{ Th} + 7 \text{ H}$

Step 4 $1 \text{ Th} \times 4 = 4 \text{ Th}$; $4 \text{ Th} + 1 \text{ Th} = 5 \text{ Th}$

ANS. 5704

$$\begin{array}{r} 326 \\ \times 3 \\ \hline 978 \end{array}$$



$$\begin{array}{r} 1426 \\ \times 4 \\ \hline 5704 \end{array}$$



Exercise 3.1

A. Find the product. ANS.

1. $\begin{array}{r} 236 \\ \times 4 \\ \hline \end{array}$

2. $\begin{array}{r} 283 \\ \times 5 \\ \hline \end{array}$

3. $\begin{array}{r} 167 \\ \times 8 \\ \hline \end{array}$

4. $\begin{array}{r} 308 \\ \times 7 \\ \hline \end{array}$

5. $\begin{array}{r} 1234 \\ \times 8 \\ \hline \end{array}$

6. $\begin{array}{r} 1308 \\ \times 6 \\ \hline \end{array}$

7. $\begin{array}{r} 2365 \\ \times 3 \\ \hline \end{array}$

8. $\begin{array}{r} 4653 \\ \times 4 \\ \hline \end{array}$

B. Multiply horizontally to find the product. ANS.

1. $421 \times 3 =$

2. $234 \times 4 =$

3. $507 \times 8 =$

4. $610 \times 9 =$

5. $1955 \times 7 =$

6. $6051 \times 6 =$

7. $3790 \times 8 =$

8. $1836 \times 9 =$

9. $2039 \times 5 =$



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Multiplication by expanding the bigger number

EXAMPLE 5 Multiply 235 by 4.

Step 1 Expand 235. $235 = 200 + 30 + 5$

Step 2 Multiply the hundreds, tens and ones.

$$\begin{array}{r} 200 \quad 30 \quad 5 \\ 4 \times \begin{array}{l} 200 \times 4 = 800 \\ 30 \times 4 = 120 \\ 5 \times 4 = 20 \end{array} \end{array}$$

Step 3 Add the products. $800 + 120 + 20 = 940$

Another method

$$\begin{array}{r} 235 \\ \times 4 \\ \hline 200 \leftarrow 5 \times 4 \\ 1200 \leftarrow 30 \times 4 \\ + 800 \leftarrow 200 \times 4 \\ \hline 940 \end{array}$$

ANS. 940

EXAMPLE 6 1237×8

$$\begin{array}{r} 1000 \quad 200 \quad 30 \quad 7 \\ 8 \times \begin{array}{l} 1000 \times 8 = 8000 \\ 200 \times 8 = 1600 \\ 30 \times 8 = 240 \\ 7 \times 8 = 56 \end{array} \end{array}$$

$$= 8000 + 1600 + 240 + 56 = 9896$$

ANS. 9896

Another method

$$\begin{array}{r} 1237 \\ \times 8 \\ \hline 56 \leftarrow 7 \times 8 \\ 240 \leftarrow 30 \times 8 \\ 1600 \leftarrow 200 \times 8 \\ + 8000 \leftarrow 1000 \times 8 \\ \hline 9896 \end{array}$$



Exercise 3.2

1 Multiply by expanding the bigger number. **ANS**

- $152 \times 3 = \underline{\quad}$
- $416 \times 4 = \underline{\quad}$
- $1234 \times 5 = \underline{\quad}$
- $2617 \times 6 = \underline{\quad}$
- $6135 \times 8 = \underline{\quad}$
- $8579 \times 2 = \underline{\quad}$
- $3678 \times 6 = \underline{\quad}$
- $312 \times 7 = \underline{\quad}$
- $5028 \times 9 = \underline{\quad}$

MULTIPLICATION BY A 2-DIGIT NUMBER

Multiplying by a 2-digit number ending with one 0

To multiply a number by a 2-digit number ending with 0, follow these steps.

Step 1 Write a 0 in the ones place.

Step 2 Multiply the number by the digit in the tens place.



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- $\triangleright 215 \times 10 = 2150$
- $\triangleright 1475 \times 10 = 14750$
- $\triangleright 42 \times 20 = 42 \times 2 \times 10 = 840$
- $\triangleright 201 \times 30 = 201 \times 3 \times 10 = 6030$
- $\triangleright 2451 \times 40 = 2451 \times 4 \times 10 = 98040$

Maths Online

For more multiplication problems, visit rsgr.in/im4-2



I Can Do It!

Type the product. **ANS**

- $27 \times 30 = \underline{\quad}$
- $35 \times 40 = \underline{\quad}$
- $114 \times 70 = \underline{\quad}$
- $215 \times 20 = \underline{\quad}$
- $1145 \times 10 = \underline{\quad}$
- $1379 \times 50 = \underline{\quad}$

Multiplying by a 2-digit number not ending with 0

EXAMPLE 7 Multiply 32 by 27.

Step 1

Multiply by ones.

$$\begin{array}{r} 32 \\ \times 27 \rightarrow 20 + 7 \\ \hline 224 \leftarrow 32 \times 7 \end{array}$$

ANS. 864

Step 2

Multiply by tens.

$$\begin{array}{r} 32 \\ \times 27 \\ \hline 224 \\ 640 \leftarrow 32 \times 20 \end{array}$$

Step 3

Add the products.

$$\begin{array}{r} 32 \\ \times 27 \\ \hline 224 \\ + 640 \\ \hline 864 \end{array}$$

EXAMPLE 8 Find 1208×39 .

Step 1

Multiply by ones.

$$\begin{array}{r} 1208 \\ \times 39 \rightarrow 30 + 9 \\ \hline 10872 \leftarrow 1208 \times 9 \end{array}$$

Step 2

Multiply by tens.

$$\begin{array}{r} 1208 \\ \times 39 \\ \hline 10872 \\ 36240 \leftarrow 1208 \times 30 \end{array}$$

Step 3

Add the products.

$$\begin{array}{r} 1208 \\ \times 39 \\ \hline 10872 \\ + 36240 \\ \hline 47112 \end{array}$$

ANS. 47112



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Exercise 3.3

Find the product. **ANS**

- 59×70
- 68×80
- 29×47
- 136×49
- 378×32
- 843×18
- 539×26
- 395×64
- 407×35
- 1234×48
- 2056×22
- 3087×37

MULTIPLYING BY A 3-DIGIT NUMBER

Multiplying by a 3-digit number ending with two 0s

To multiply a number by a 3-digit number ending with two 0s, follow these steps.

Step 1 Write 0 in both the ones and tens places.

Step 2 Then, multiply the number by the digit in the hundreds place.

- $23 \times 100 = 2300$
- $342 \times 100 = 34200$
- $45 \times 200 = 45 \times 2 \times 100 = 9000$
- $201 \times 400 = 201 \times 4 \times 100 = 80400$
- $916 \times 300 = 916 \times 3 \times 100 = 274800$



I Can Do It!

Find the product. **ANS**

- 25×500
- 37×300
- 415×200
- 627×100

Multiplying by a 3-digit number not ending with 0

EXAMPLE 9 Multiply 327 by 213.

$$\begin{array}{r} 327 \\ \times 213 \\ \hline 981 \\ 3270 \\ +6540 \\ \hline 69651 \end{array}$$

- Step 1 Multiply by ones.
- Step 2 Multiply by tens.
- Step 3 Multiply by hundreds.
- Step 4 Add the products.



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EXAMPLE 10 Find 405×190 .

$$\begin{array}{r} 405 \\ \times 190 \\ \hline 36450 \\ +40500 \\ \hline 76950 \end{array}$$

In 190, there is 0 in the ones place, so you can skip the 405×0 step.



ANS. 76950



Exercise 3.4

Find the product. **ANS**

- 223×200
- 216×400
- 364×215
- 429×246
- 809×312
- 6516×170
- 386×302
- 473×208

ESTIMATING THE PRODUCT

Round off the factors to estimate their product. Estimating the product gives a rough idea of the product.

EXAMPLE 11 Find the estimated product and the exact product of 46 and 23.

$$\begin{array}{r} 46 \\ \times 23 \\ \hline 138 \\ +92 \\ \hline 1058 \end{array}$$

EXAMPLE 12 Estimate the product of 408 and 131 by rounding off each number to the nearest hundred.

$$\begin{array}{r} 408 \\ \times 131 \\ \hline 40000 \end{array}$$



Exercise 3.5

A. Estimate the product by rounding off each factor to the nearest 10. **ANS**

- 42×78
- 82×33
- 67×26
- 43×31

B. Estimate the product by rounding off each factor to the nearest 100. **ANS**

- 417×126
- 563×724
- 327×168
- 4231×627



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STORY SUMS

EXAMPLE 13 A notebook has 256 pages. How many pages are there in 5 such notebooks?

Number of pages in 1 notebook = 256

Number of notebooks = 5

Number of pages in 5 notebooks = 256×5

ANS. There are 1280 pages in 5 notebooks.

$$\begin{array}{r} 256 \\ \times 5 \\ \hline 1280 \end{array}$$



EXAMPLE 14 A box contains 580 balls. How many balls do 71 such boxes contain?

Number of balls in 1 box = 580

Number of boxes = 71

Total number of balls = 580×71

ANS. 71 boxes contain 41180 balls.

$$\begin{array}{r} 580 \\ \times 71 \\ \hline 580 \\ + 40600 \\ \hline 41180 \end{array}$$



Exercise 3.6

Solve these story sums. ANS

- Preeti collected ₹150 from each member of the Book Club for purchasing books. If there are 9 members, how much money did Preeti collect?
- John pays ₹997 towards his school fee every month. Find the amount paid as fee for a year.
- 215 books are placed in a rack. There are 43 such racks in the library. How many books does the library have?
- Meena has 732 fifty-rupee notes. How much money does Meena have?
- A bicycle costs ₹1279. What will be the cost of 26 such bicycles?
- 537 buttons are produced by a factory every day. If the factory works every day of the month, how many buttons will it produce in the month of March?



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- A dozen pencils are packed in a box. 20 such boxes are packed in a carton. How many pencils are there in 10 cartons?
- Normally, our heart beats 72 times in a minute. How many times will it beat in a day?



HOTS Questions

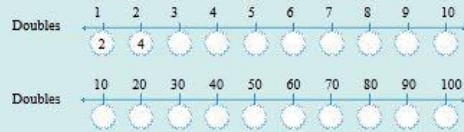


Maths Lab Activity

Aim: To practise doubles

You will need: A ball

Preparation: Students complete the number line of doubles.



Steps

- Students stand in a circle with the teacher in the centre.
- The teacher calls out a number from 1 to 10, for example, 3, and throws the ball to a student.
- The student catches the ball and says the double of the number called by the teacher. In this case, it is 6. Continue till all the 10 numbers are called.
- Next the teacher calls out multiples of 10. The game continues till the students are sure of the doubles.

ACTIVITY

Multiply two correct numbers in each row to find the product in the same row. Circle all 3 numbers.

A	B	C	D
651	321	11	3531
217	3	651	16
420	173	8	1384
18	1224	68	18



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Mental Maths

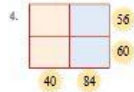
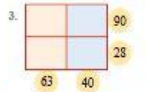
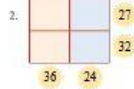
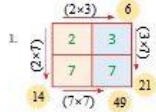
A. Fill in the missing numbers. **ANS**

- $700 \times \underline{\quad} = 49000$
- $\underline{\quad} \times 600 = 1200$
- $90 \times \underline{\quad} = 360$
- $50 \times \underline{\quad} = 400$
- $\underline{\quad} \times 90 = 720$
- $\underline{\quad} \times 300 = 2700$

B. Fill in the blanks. **ANS**

- $15 \times 1 = \underline{\quad}$
- $4 \times \underline{\quad} \times 5 = 0$
- $27 \times \underline{\quad} = 27$
- $\underline{\quad} \times 1 = 16$
- $14 \times 0 = \underline{\quad}$
- $(3 \times 4) \times 2 = (2 \times 3) \times \underline{\quad}$

C. Fill in numbers so that the products of the numbers in each row and each column are correct. **ANS**



D. Fill in the **ANS**

- $\begin{array}{r} 14 \\ \times 20 \\ \hline 28 \end{array}$
- $\begin{array}{r} 10 \\ \times 60 \\ \hline 00 \end{array}$
- $\begin{array}{r} 15 \\ \times 40 \\ \hline 60 \end{array}$
- $\begin{array}{r} 30 \\ \times 30 \\ \hline 00 \end{array}$
- $\begin{array}{r} 123 \\ \times 3 \\ \hline 6 \end{array}$
- $\begin{array}{r} 101 \\ \times 9 \\ \hline 0 \end{array}$
- $\begin{array}{r} 234 \\ \times 2 \\ \hline 4 \end{array}$
- $\begin{array}{r} 384 \\ \times 2 \\ \hline 68 \end{array}$



Worksheet

A. Tick (✓) the correct option. **ANS**

- The product of 16 and 40 is
a. 64. b. 56. c. 640. d. 1640.
- $37 + 37 + 37 + \dots$ (100 times) is equal to
a. 3700. b. 111. c. 370. d. 37.
- The estimated product of 48 and 31 by rounding off each number to the nearest ten is
a. 1200. b. 1500. c. 1600. d. 1750.

B. Multiply. **ANS**

- 564×7
- 8251×4
- 600×12
- 1251×18
- 1300×22
- 111×99
- 606×440
- 257×181
- 629×214
- 318×207
- 795×244
- 615×701

C. Fill in the boxes. **ANS**

1. 346×3

300	40	6
3		

2. 5892×7

5000	800	90	2
7			

D. Solve these story sums. **ANS**

- 36 students of Class 4 donated money for the Flood Relief Fund. If each student gave ₹125, how much money was collected?
- Amandeep collected ₹250 from each student of Class 4 for a school picnic. If there are 44 students in the class, how much money did Amandeep collect?
- Anu studies 2 hours every day. How many minutes does she study in a week? (Hint: 1 hour = 60 minutes; 1 week = 7 days)
- A plane covers a distance of 1980 km to travel from place A to place B. How much distance will it cover in two round trips? (Hint: 1 round trip between A and B means going from A to B and then going back to A.)

