

## Multiplication Word Problems

Multiplication shows up in three common story shapes: equal groups, arrays/rows, and “times as many” comparisons. Spotting the shape tells you what to do.

Story Shape	Example
Equal groups	“5 bags with 9 marbles each” $\rightarrow 5 \times 9$
Array / rows	“4 rows of 6 chairs” $\rightarrow 4 \times 6$
“Times as many”	“Anna has 3; Ben has 4 times as many” $\rightarrow 4 \times 3$

### Key Concepts

1. “**Equal groups**” problems say things like “5 bags with 6 apples each.” Multiply the number of groups by the size of each group.
2. “**Array / rows**” problems describe rectangles: “4 rows of 9 chairs.” Multiply rows by columns.
3. “**Times as many**” is a comparison. “Max has 3 times as many as Lily.” If Lily has 7, Max has  $3 \times 7 = 21$ .
4. For **two-step problems**, do one calculation at a time. Write down each intermediate result before moving on.

### Worked Examples

① A parking lot has 5 rows of cars with 9 cars in each row. How many cars?

 This is an array story. Five rows, nine cars per row:  $5 \times 9 = 45$  cars. The phrase “rows with (number) in each row” is the giveaway — multiply rows by row-size.

 **Answer:** 45 cars

② Lily has 7 stickers. Max has 3 times as many. How many stickers does Max have?

 “Times as many” is a comparison. To find Max’s count, multiply Lily’s count by 3:  $3 \times 7 = 21$ . Max has 21 stickers. (Sanity check: “3 times as many” should give a bigger number, and  $21 > 7$  — looks right.)

 **Answer:** 21 stickers

③ A baker puts 6 muffins on each tray. She fills 8 trays. Then she sells 10 muffins. How many muffins are left?

 Two-step problem. *Step 1:* how many total? Equal groups:  $8 \times 6 = 48$  muffins. *Step 2:* subtract the sold ones:  $48 - 10 = 38$  muffins left. Always do the multiplication first when an equal-groups story is followed by an addition or subtraction.

 **Answer:** 38 muffins

### Practice Problems

Write a multiplication equation and solve.

1. 4 bags, 8 oranges each. Total? \_\_\_\_\_
2. 7 shelves, 6 books each. Total? \_\_\_\_\_
3. Mia: 5; Dan: 4 times as many. \_\_\_\_\_
4. 9 rows of 3 chairs. Total chairs? \_\_\_\_\_
5. Each box has 10 pencils. 6 boxes. \_\_\_\_\_
6. Leo ran 8 laps. Kim ran 2 times \_\_\_\_\_ as many. How many laps?
7. 3 packs of 7 erasers. Total? \_\_\_\_\_
8. A garden has 4 rows of 9 plants. \_\_\_\_\_
9. Anna: 6 cards. Eli: 5 times \_\_\_\_\_ as many. How many?
10. 5 teams of 8 players. Total? \_\_\_\_\_
11. 2 boxes of 12 crayons. Total? \_\_\_\_\_
12. Each page has 6 stickers. 7 pages. \_\_\_\_\_

### Study Tips

-  Identify the story shape first. Equal groups, array, or comparison? Once you know the shape, the operation is obvious.
-  Write a number sentence before computing. " $5 \times 9 = ?$ " takes a few seconds and prevents you from losing track of what to multiply.
-  For two-step problems, label each step. Step 1: find the total. Step 2: take away or compare.

### Word Problems

1. A toy store has 4 shelves. Each shelf holds 9 toy cars. A customer buys 5 cars. How many toy cars are left in the store?

Answer: \_\_\_\_\_

2. Sophie has 8 seashells. Her brother has 3 times as many. How many seashells does her brother have?

Answer: \_\_\_\_\_

**Answer Key — with Friendly Explanations****Practice Problems**

1. Equal groups:  $4 \times 8$ .

 **Answer:** 32 oranges

2. Equal groups (or array):  $7 \times 6$ .

 **Answer:** 42 books

3. “Times as many”:  $4 \times 5$ .

 **Answer:** 20 items for Dan

4. Array:  $9 \times 3$ .

 **Answer:** 27 chairs

5. Equal groups:  $6 \times 10$ .

 **Answer:** 60 pencils

6. “Times as many”:  $2 \times 8$ .

 **Answer:** 16 laps for Kim

7. Equal groups:  $3 \times 7$ .

 **Answer:** 21 erasers

8. Array:  $4 \times 9$ .

 **Answer:** 36 plants

9. “Times as many”:  $5 \times 6$ .

 **Answer:** 30 cards for Eli

10. Equal groups:  $5 \times 8$ .

 **Answer:** 40 players

11. Equal groups:  $2 \times 12$ .

 **Answer:** 24 crayons

12. Equal groups:  $7 \times 6$ .

 **Answer:** 42 stickers

**Word Problems**

1. Two-step.  $4 \times 9 = 36$  cars total;  $36 - 5 = 31$  left.

 **Answer:** 31 toy cars

2. Comparison.  $3 \times 8 = 24$  seashells.

 **Answer:** 24 seashells

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