

Multiply Smart Moves

Switch, group, or split factors to make multiplication easier.

GRADE 3 • 3.OA.B.5

CCSS.Math.Content.3.OA.B.5 "Apply properties of operations as strategies to multiply and divide. 2 Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by 3×10 ..."

NAME _____

DATE _____

USE NUMBER MOVES

You can switch factors, group factors in a new way, or split one factor into an addition fact. These moves do not change the product. Choose a move that makes the multiplication easier to solve.

WORKED EXAMPLE

Solve: $12 \times (3 + 4)$

1. $12 \times (3 + 4) = (12 \times 3) + (12 \times 4)$

2. $12 \times 3 = 36$

3. $12 \times 4 = 48$

4. $36 + 48 = 84$

Answer: 84

PRACTICE 6 problems

1 $8 \times 6 = 6 \times \underline{\hspace{1cm}}$

ANSWER _____

2 Use grouping to solve: $2 \times 5 \times 9 = \underline{\hspace{1cm}}$

ANSWER _____

3 Use splitting to solve: $9 \times (6 + 2) = \underline{\hspace{1cm}}$

ANSWER _____

4 $8 \times 6 = 8 \times (5 + \underline{\hspace{1cm}})$

ANSWER _____

5 Choose the expression equal to $5 \times (8 \times 6)$.
A. $(5 \times 8) \times 6$ B. $(5 \times 6) + 8$ C. $5 + (8 \times 6)$

ANSWER _____

6 Use splitting to solve: $5 \times (6 + 2) = \underline{\hspace{1cm}}$

ANSWER _____

APPLY IT Show your work

- 1** A game designer makes 9 prize bags. Each bag has 8 star stickers and 2 robot stickers. How many stickers does the designer use altogether?

WORK SPACE

ANSWER _____

- 2** At a school art fair, 5 tables each show 8 paintings and 6 clay animals. How many artworks are on the tables altogether?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Find $8 \times (9 + 5)$. Show two different ways to solve it.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	$8 \times 6 = 6 \times \underline{\quad}$	8
2	Use grouping to solve: $2 \times 5 \times 9 = \underline{\quad}$	90
3	Use splitting to solve: $9 \times (6 + 2) = \underline{\quad}$	72
4	$8 \times 6 = 8 \times (5 + \underline{\quad})$	1
5	Choose the expression equal to $5 \times (8 \times 6)$. A. $(5 \times 8) \times 6$ B. $(5 \times 6) + 8$ C. $5 + (8 \times 6)$	A. $(5 \times 8) \times 6$
6	Use splitting to solve: $5 \times (6 + 2) = \underline{\quad}$	40

PART 2 • APPLY IT

1. **90 stickers** Split each bag into 8 stickers and 2 stickers. $9 \times 8 + 9 \times 2 = 72 + 18 = 90$.
2. **70 artworks** Each table has 8 + 6 artworks. $5 \times (8 + 6) = 5 \times 8 + 5 \times 6 = 40 + 30 = 70$.

CHALLENGE

112; $8 \times 14 = 112$, and $(8 \times 9) + (8 \times 5) = 72 + 40 = 112$.

Accept equivalent equations that correctly switch, regroup, or split factors. For the challenge, accept any two correct methods that both equal 112.