LESSON MAKER PRO

Multiply Your Way

Switch, group, or break apart factors.

GRADE 3 · MT.3.OA.5

MT.3.OA.5 "Apply the commutative property of multiplication, associative property of multiplication, and distributive property of multiplication over addition on whole numbers as strategies to multiply."

NAME _____ DATE _____

THREE WAYS TO MULTIPLY

You can switch the order of factors or group them differently without changing the product. When you multiply a number by a sum, you can multiply by each addend and then add the products.

WORKED EXAMPLE

Find 9 x (4 + 5) by breaking apart the sum.

1. Multiply 9 by each addend: (9 x 4) + (9 x 5).
2. Find each product: 36 + 45.
3. Add: 36 + 45 = 81.

Answer: 81

PRACTICE 6 problems

1 Switch the factors to find the product: 7 x 2 = 2 x 7 = ___

ANSWER _____

2 Switch the factors to find the product: 3 x 6 = 6 x 3 = ___

ANSWER _____

3 Group the factors differently to find the product: (2 x 3) x 7 = 2 x (3 x 7) = ___

ANSWER _____

4 Group the factors differently to find the product: (6 x 2) x 3 = 6 x (2 x 3) = ___

ANSWER _____

5 Break apart the sum to find the product: 7 x (6 + 2) = (7 x 6) + (7 x 2) = ___

ANSWER _____

6 Break apart the sum to find the product: 3 x (7 + 3) = (3 x 7) + (3 x 3) = ___

ANSWER _____

APPLY IT Show your work

1 At a game booth, 6 teams each win 7 blue tickets and 3 gold tickets. How many tickets do the teams win in all? Write a multiplication sentence that breaks apart the sum.

WORK SPACE

ANSWER _____

2 A craft club fills 2 boxes. Each box holds 3 packs of 7 beads. How many beads are in all? Write a multiplication sentence that groups the factors in a helpful way.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A player says 8 x (3 + 7) = (8 x 3) + 7. Is the player correct? Write a correct equation and explain the mistake.

WORK SPACE AND ANSWER

ANSWER KEY

Multiply Your Way

GRADE 3 · MT.3.OA.5

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Switch the factors to find the product: 7 x 2 = 2 x 7 = ___	**14**
2	Switch the factors to find the product: 3 x 6 = 6 x 3 = ___	**18**
3	Group the factors differently to find the product: (2 x 3) x 7 = 2 x (3 x 7) = ___	**42**
4	Group the factors differently to find the product: (6 x 2) x 3 = 6 x (2 x 3) = ___	**36**
5	Break apart the sum to find the product: 7 x (6 + 2) = (7 x 6) + (7 x 2) = ___	**56**
6	Break apart the sum to find the product: 3 x (7 + 3) = (3 x 7) + (3 x 3) = ___	**30**

PART 2 · APPLY IT

1. **60 tickets; 6 x (7 + 3) = (6 x 7) + (6 x 3) = 60** Each team wins 7 + 3 tickets. Multiply 6 by each part, then add 42 + 18.
2. **42 beads; (2 x 3) x 7 = 6 x 7 = 42** There are 2 x 3 = 6 packs in all. Multiply 6 packs by 7 beads per pack.

CHALLENGE

No. 8 x (3 + 7) = (8 x 3) + (8 x 7) = 24 + 56 = 80. The player forgot to multiply 7 by 8.

Accept any correct grouping or order of factors in the word problems. For the challenge, accept an explanation that both addends inside the parentheses must be multiplied by 8.