LESSON MAKER PRO

Multiply Your Way

Switch, group, or break apart factors to multiply.

GRADE 3 · 3.NOS.C.4

3.NOS.C.4 "Identify and apply the Commutative Property of Multiplication, Associative Property of Multiplication, and Distributive Property of Multiplication as strategies to multiply."

NAME _____ DATE _____

THREE HELPFUL MOVES

You can switch the order of two factors or regroup three factors without changing the product. You can also break one factor into two parts, multiply each part, and add the products. Choose a move that helps you use facts you know.

WORKED EXAMPLE

Find 5 x (8 + 2) by breaking apart a factor.

1. 5 x (8 + 2) = (5 x 8) + (5 x 2)
2. 5 x 8 = 40 and 5 x 2 = 10
3. 40 + 10 = 50

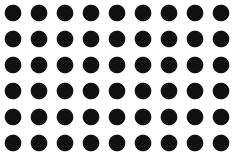
Answer: 50

PRACTICE 6 problems

1 Use a turn-around fact to fill in the blank: 7 x 3 = 3 x ___.

ANSWER _____

2 Write two multiplication facts that find the number of dots in the array. Switch the order of the factors in your second fact.



ANSWER _____

3 Regroup the factors, then find the product: 3 x (4 x 7) = (3 x ___) x 7 = ___.

ANSWER _____

4 Regroup (9 x 3) x 3 to make a fact you know. Write the new expression and its product.

ANSWER _____

5 Break apart 7 x 9 as 7 x (6 + 3). Write the two smaller products and find the total.

ANSWER _____

6 Fill in both blanks: 6 x (7 + 3) = (6 x 7) + (6 x ___) = ___.

ANSWER _____

APPLY IT Show your work

1 One sticker sheet has 4 rows of 7 stickers. Another sheet has 7 rows of 4 stickers. How many stickers are on both sheets in all? Use a turn-around fact to explain.

WORK SPACE

ANSWER _____

2 At a school fair, 6 teams make 9 badges each. Each team makes 4 blue badges, and the rest are red. How many red badges do the teams make in all? Show how you multiplied.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Find 9 x (3 + 4) in two ways. First add inside the parentheses. Then break it into two products. Explain why both ways give the same answer.

WORK SPACE AND ANSWER

ANSWER KEY

Multiply Your Way

GRADE 3 · 3.NOS.C.4

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use a turn-around fact to fill in the blank: 7 x 3 = 3 x ___.	**7**
2	Write two multiplication facts that find the number of dots in the array. Switch the order of the factors in your second fact.	**6 x 9 = 54 and 9 x 6 = 54**
3	Regroup the factors, then find the product: 3 x (4 x 7) = (3 x ___) x 7 = ___.	**4; 84**
4	Regroup (9 x 3) x 3 to make a fact you know. Write the new expression and its product.	**9 x (3 x 3) = 81**
5	Break apart 7 x 9 as 7 x (6 + 3). Write the two smaller products and find the total.	**(7 x 6) + (7 x 3) = 42 + 21 = 63**
6	Fill in both blanks: 6 x (7 + 3) = (6 x 7) + (6 x ___) = ___.	**3; 60**

PART 2 · APPLY IT

1. **56 stickers. Each sheet has 28 stickers because 4 x 7 = 7 x 4.** Use the Commutative Property to see that each sheet has 28 stickers. Add 28 + 28 to get 56.
2. **30 red badges; (6 x 9) - (6 x 4) = 54 - 24 = 30.** Subtract the total number of blue badges from the total number of badges: 6 x 9 - 6 x 4 = 30.

CHALLENGE

9 x 7 = 63. Also, (9 x 3) + (9 x 4) = 27 + 36 = 63. Breaking 7 into 3 and 4 does not change how many groups of 9 there are.

Accept equivalent equations that show the requested property. For the challenge, the explanation should connect both methods to the same total.