

Multiply Many Ways

Show equal groups in more than one way.

GRADE 3 • TEKS 3.4.E

3.4.E "represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting;"

NAME _____

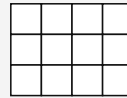
DATE _____

ONE TOTAL, MANY MODELS

Multiplication tells how many are in equal groups. You can show the same total with repeated addition, an array, equal jumps, or skip counting. Count the groups and count how many are in each group.

WORKED EXAMPLE

Use the array to write a repeated-addition equation and a multiplication equation.

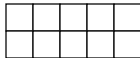


1. Count 3 equal rows.
2. Each row has 4 squares.
3. Add $4 + 4 + 4 = 12$.
4. Write $3 \times 4 = 12$.

Answer: $4 + 4 + 4 = 12$; $3 \times 4 = 12$

PRACTICE 6 problems

- 1** Use the array. Write a repeated-addition equation and a multiplication equation.



ANSWER _____

- 2** The marked points show equal jumps starting at 0. What multiplication fact do they show?



ANSWER _____

- 3** Skip-count by 8: 8, 16, 24, 32, 40. Write the multiplication fact.

ANSWER _____

- 4** There are 6 equal groups with 5 counters in each group. Write repeated addition and a multiplication equation.

ANSWER _____

- 5** A rectangle has 9 rows of 6 unit squares. Write a multiplication equation for its area.

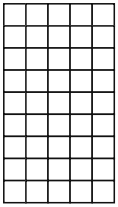
ANSWER _____

- 6** What multiplication fact is shown by $9 + 9 + 9 + 9 + 9$?

ANSWER _____

APPLY IT Show your work

- 1** A game club makes one sticker sheet for each row in the array. Each square stands for one sticker. How many stickers does the club make? Write a multiplication equation.



ANSWER _____

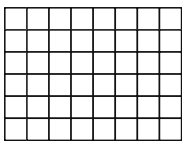
- 2** At a robotics club, 8 teams earn 7 points each in a quiz round. Use skip counting or repeated addition to find the total number of points.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Use the array. Write two repeated-addition equations that count the squares in different directions. Write the two multiplication facts. Explain why all four equations have the same total.



WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Use the array. Write a repeated-addition equation and a multiplication equation.	$5 + 5 = 10$; $2 \times 5 = 10$
2	The marked points show equal jumps starting at 0. What multiplication fact do they show?	$2 \times 7 = 14$
3	Skip-count by 8: 8, 16, 24, 32, 40. Write the multiplication fact.	$5 \times 8 = 40$
4	There are 6 equal groups with 5 counters in each group. Write repeated addition and a multiplication equation.	$5 + 5 + 5 + 5 + 5 + 5 = 30$; $6 \times 5 = 30$
5	A rectangle has 9 rows of 6 unit squares. Write a multiplication equation for its area.	$9 \times 6 = 54$
6	What multiplication fact is shown by $9 + 9 + 9 + 9 + 9 + 9 + 9$?	$7 \times 9 = 63$

PART 2 • APPLY IT

- $9 \times 5 = 45$ stickers** Count 9 equal rows with 5 stickers in each row. Multiply 9×5 to get 45.
- 56 points** There are 8 equal groups of 7 points. Multiply $8 \times 7 = 56$.

CHALLENGE

$8 + 8 + 8 + 8 + 8 + 8 = 48$; $6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 48$; $6 \times 8 = 48$; $8 \times 6 = 48$. All four equations count the same 48 squares.

Accept equivalent repeated-addition equations and multiplication facts with factors in either order. For the challenge, accept an explanation that both directions count the same squares in the array.