Area Match Hunt

Use arrays to check area equations.

3.GSR.7.3 "Discover and explain how area can be found by multiplying the dimensions of a rectangle."

NAME _____ DATE _____

MATCH

The equation matches if it multiplies the array's rows by the number of squares in each row. The product is the area in square units.

3 × 7 = 21 square units



NO MATCH

The equation does not match if its factors or product do not show the array's area.

2 × 7 = 14 square units



1 SORT

8 items

Circle the category for each figure, then choose two items and explain how the array shows whether each equation matches.

1.

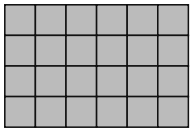


Figure 1: 4 × 6 = 24 square units

MATCH NO MATCH

2.

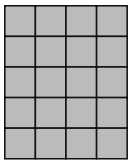


Figure 2: 5 × 5 = 25 square units

MATCH NO MATCH

3.

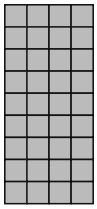


Figure 3: 4 × 8 = 32 square units

MATCH NO MATCH

4.

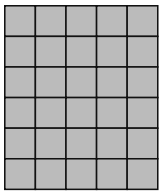


Figure 4: 6 × 5 = 30 square units

MATCH NO MATCH

5.

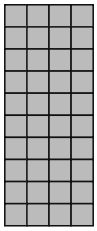


Figure 5: 10 × 4 = 40 square units

MATCH NO MATCH

6.

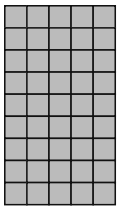


Figure 6: 9 × 5 = 45 square units

MATCH NO MATCH

7.

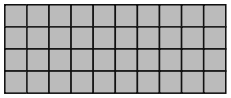


Figure 7: 4 × 9 = 36 square units

MATCH NO MATCH

8.

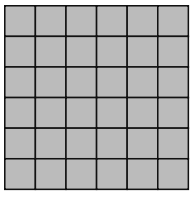


Figure 8: 6 × 6 = 36 square units

MATCH NO MATCH

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write one new MATCH example and one new NO MATCH example. Include an array size and an area equation for each one.

MATCH

NO MATCH

CHALLENGE

Draw two different rectangles that each have an area of 48 square units. Write a matching area equation for each rectangle.

ANSWER KEY # Area Match Hunt

GRADE 3 · 3.GSR.7.3

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1: 4 × 6 = 24 square units (array)	**MATCH**	The array has 4 rows of 6 squares, so its area is 4 × 6 = 24 square units.
2	Figure 2: 5 × 5 = 25 square units (array)	**NO MATCH**	The array has 5 rows of 4 squares, not 5 rows of 5 squares.
3	Figure 3: 4 × 8 = 32 square units (array)	**NO MATCH**	The array has 9 rows of 4 squares and an area of 36 square units.
4	Figure 4: 6 × 5 = 30 square units (array)	**MATCH**	The array has 6 rows of 5 squares, so its area is 30 square units.
5	Figure 5: 10 × 4 = 40 square units (array)	**MATCH**	The array has 10 rows of 4 squares, so its area is 40 square units.
6	Figure 6: 9 × 5 = 45 square units (array)	**MATCH**	The array has 9 rows of 5 squares, so its area is 45 square units.
7	Figure 7: 4 × 9 = 36 square units (array)	**NO MATCH**	The array has 4 rows of 10 squares and an area of 40 square units.
8	Figure 8: 6 × 6 = 36 square units (array)	**MATCH**	The array has 6 rows of 6 squares, so its area is 36 square units.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **MATCH**: A 5-by-9 array has 5 × 9 = 45 square units.
- **NO MATCH**: A 10-by-5 array has 5 × 9 = 45 square units.

Challenge: A 4-by-12 rectangle has 4 × 12 = 48 square units. A 6-by-8 rectangle has 6 × 8 = 48 square units.

Sort answers are 1 MATCH, 2 NO MATCH, 3 NO MATCH, 4 MATCH, 5 MATCH, 6 MATCH, 7 NO MATCH, 8 MATCH. For Part 2, accept explanations that identify the rows and squares in each row, then compare their product with the equation.