

Tile Count Detectives

Check each area count by counting square tiles.

3.GSR.7.2 "Determine the area of rectangles (or shapes composed of rectangles) presented in relevant problems by tiling and counting."

NAME _____

DATE _____

RIGHT AREA COUNT

A right area count includes every equal square tile once. The area is written in square units.

A bulletin board has 4 rows of 5 square papers. Its area is 20 square units.

WRONG AREA COUNT

A wrong area count does not match the number of square tiles. It may miss tiles, count tiles twice, or use the wrong number.

A rug has 9 equal square patches. Saying its area is 12 square units is wrong.

1 SORT _____ 8 items

Circle RIGHT or WRONG for each statement, then choose two item numbers and explain how you counted the square tiles.

1. A 3-by-4 rectangle has 12 tiles. Area = 12 square units.

RIGHT

WRONG

2. An L-shape has 4 tiles across the top and 3 tiles under the left 3 tiles. Area = 7 square units.

RIGHT

WRONG

3. Two joined rectangles have 6 tiles and 5 tiles, with no shared tiles. Area = 11 square units.

RIGHT

WRONG

4. A 2-by-3 rectangle has 6 tiles. Area = 5 square units.

RIGHT

WRONG

5. A 1-by-7 rectangle has 7 tiles. Area = 7 square units.

RIGHT

WRONG

6. A 3-by-3 rectangle has 9 tiles. Area = 6 square units.

RIGHT

WRONG

7. A shape has 10 square tiles. Area = 20 square units.

RIGHT

WRONG

8. A rectangle has 4 rows of 2 square tiles. Area = 8 square units.

RIGHT

WRONG

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 area statement for RIGHT and one new area statement for WRONG.

RIGHT _____

WRONG _____

CHALLENGE

Draw a 2-by-4 rectangle. Attach a 2-by-2 rectangle below its left side. Tile the shape with equal squares, then write its area in square units.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	A 3-by-4 rectangle has 12 tiles. Area = 12 square units.	RIGHT	Three rows of four tiles make 12 tiles.
2	An L-shape has 4 tiles across the top and 3 tiles under the left 3 tiles. Area = 7 square units.	RIGHT	The shape has 4 tiles plus 3 more tiles, for 7 total.
3	Two joined rectangles have 6 tiles and 5 tiles, with no shared tiles. Area = 11 square units.	RIGHT	There are 6 plus 5 tiles, for 11 total.
4	A 2-by-3 rectangle has 6 tiles. Area = 5 square units.	WRONG	Six tiles cover the rectangle, not five.
5	A 1-by-7 rectangle has 7 tiles. Area = 7 square units.	RIGHT	One row of seven tiles has an area of 7 square units.
6	A 3-by-3 rectangle has 9 tiles. Area = 6 square units.	WRONG	Nine tiles cover the rectangle, not six.
7	A shape has 10 square tiles. Area = 20 square units.	WRONG	Ten square tiles make 10 square units.
8	A rectangle has 4 rows of 2 square tiles. Area = 8 square units.	RIGHT	Four rows of two tiles make 8 tiles.

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)

- **RIGHT:** A rectangle has 3 rows of 5 square tiles. Area = 15 square units.
- **WRONG:** A shape has 11 square tiles. Area = 8 square units.

Challenge: The 2-by-4 rectangle has 8 tiles. The 2-by-2 rectangle has 4 tiles, so the area is 12 square units.

Accept different student-created statements when the tile count and area claim match the chosen category. In the challenge, the two rectangles touch but do not overlap, so students count 8 tiles plus 4 tiles.