Square Cover Test

Which plans measure the area of a flat shape?

CCSS.Math.Content.3.MD.C.5 "Recognize area as an attribute of plane figures and understand concepts of area measurement."

NAME _____ DATE _____

MEASURES AREA

To measure area, count equal-size unit squares that cover the whole flat shape with no gaps or overlaps.

Six 1-foot squares cover a garden bed with no gaps or overlaps. Count the squares.

DOES NOT MEASURE AREA

A count does not give the area if squares leave gaps, overlap, or have different sizes.

A round plate has 1-inch squares placed only around its edge. Counting them does not measure the plate's area.

1 SORT

8 items

For each numbered plan, circle AREA if it measures area correctly or OTHER if it does not.

1.	1. Cover a card with 1-inch squares, leaving no gaps or overlaps. Count them.	AREA	OTHER
2.	2. Cover a mat with 1-centimeter squares, leaving no gaps or overlaps. Count them.	AREA	OTHER
3.	3. Cover a paper sign with 1-inch squares. Some squares overlap. Count them.	AREA	OTHER
4.	4. Cover a book cover with 1-inch squares, leaving no gaps or overlaps. Count them.	AREA	OTHER
5.	5. Place 1-inch squares on a rectangle, but leave some spaces bare. Count them.	AREA	OTHER
6.	6. Cover a board with both 1-inch and 2-inch squares, leaving no gaps or overlaps. Count them all.	AREA	OTHER
7.	7. Cover a rug with 1-foot squares, leaving no gaps or overlaps. Count them.	AREA	OTHER
8.	8. Cover a napkin with 1-centimeter squares, leaving no gaps or overlaps. Count them.	AREA	OTHER

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

Part 2: Pick two numbered plans and explain how you knew where each belongs. Part 3: Write one new AREA plan and one new OTHER plan.

AREA _____

OTHER _____

CHALLENGE

Change plan 5 so it measures area correctly. Write what you would do.

ANSWER KEY

Square Cover Test

GRADE 3 · 3.MD.C.5

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	1. Cover a card with 1-inch squares, leaving no gaps or overlaps. Count them.	**AREA**	Equal-size unit squares cover the whole card without gaps or overlaps.
2	2. Cover a mat with 1-centimeter squares, leaving no gaps or overlaps. Count them.	**AREA**	Equal-size unit squares cover the whole mat without gaps or overlaps.
3	3. Cover a paper sign with 1-inch squares. Some squares overlap. Count them.	**OTHER**	Overlapping squares make the count an incorrect area measure.
4	4. Cover a book cover with 1-inch squares, leaving no gaps or overlaps. Count them.	**AREA**	Equal-size unit squares cover the whole book cover without gaps or overlaps.
5	5. Place 1-inch squares on a rectangle, but leave some spaces bare. Count them.	**OTHER**	The squares do not cover the whole rectangle.
6	6. Cover a board with both 1-inch and 2-inch squares, leaving no gaps or overlaps. Count them all.	**OTHER**	The squares have different sizes, so their total count does not give the area in one unit.
7	7. Cover a rug with 1-foot squares, leaving no gaps or overlaps. Count them.	**AREA**	Equal-size unit squares cover the whole rug without gaps or overlaps.
8	8. Cover a napkin with 1-centimeter squares, leaving no gaps or overlaps. Count them.	**AREA**	Equal-size unit squares cover the whole napkin without gaps or overlaps.

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)

- **AREA**: Cover a lunch tray with 1-centimeter squares, leaving no gaps or overlaps. Count them.
- **OTHER**: Cover a paper crown with 1-inch squares, but let some overlap. Count them.

Challenge: Fill the bare spaces with more 1-inch squares. Make sure the squares do not overlap, then count them all.

For Part 2, accept explanations that identify complete coverage with equal-size unit squares for AREA or a specific problem with the square count for OTHER. For the challenge, the changed plan must cover the whole rectangle without gaps or overlaps.