

Square Cover Sort

Decide which figures whole unit squares can cover exactly.

NY-3.MD.5.b "Recognize a plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units."

NAME _____

DATE _____

FULLY COVERED

Whole unit squares cover this figure with no gaps or overlaps. Count the squares to find its area.

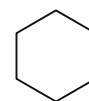
A rectangle covered by 16 whole unit squares.



NOT FULLY COVERED

Whole unit squares cannot cover this figure exactly. Squares would leave gaps or go past an edge.

A regular hexagon.



1 SORT

8 items

Circle COVERED or UNCOVERED for each figure.

1.

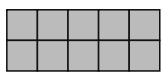


Figure 1

COVERED

UNCOVERED

2.



Figure 2

COVERED

UNCOVERED

3.

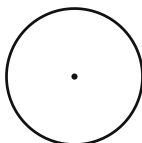


Figure 3

COVERED

UNCOVERED

4.



Figure 4

COVERED

UNCOVERED

5.

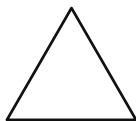


Figure 5

COVERED

UNCOVERED

6.



Figure 6

COVERED

UNCOVERED

7.



Figure 7

COVERED

UNCOVERED

8.



Figure 8

COVERED

UNCOVERED

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 figures and explain how you knew each category. Part 3: Write one new COVERED example and one new UNCOVERED example.

COVERED _____

UNCOVERED _____

CHALLENGE

Draw a new figure covered by 12 whole unit squares with no gaps or overlaps, then write its area in square units.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (array)	COVERED	Ten whole unit squares completely fill the rectangle.
2	Figure 2 (array)	COVERED	Nine whole unit squares completely fill the rectangle.
3	Figure 3 (circle)	UNCOVERED	The curved edge cannot be covered exactly by whole unit squares.
4	Figure 4 (array)	COVERED	Eight whole unit squares completely fill the rectangle.
5	Figure 5 (equilateral)	UNCOVERED	The slanted edges would leave gaps when covered with whole unit squares.
6	Figure 6 (semicircle)	UNCOVERED	The curved edge cannot be covered exactly by whole unit squares.
7	Figure 7 (array)	COVERED	Six whole unit squares completely fill the rectangle.
8	Figure 8 (obtuse_triangle)	UNCOVERED	The slanted edges would leave gaps when covered with whole unit squares.

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)

- **COVERED:** A 1-by-7 strip of whole unit squares.
- **UNCOVERED:** A regular octagon.

Challenge: A 3-by-4 rectangle of unit squares has an area of 12 square units.

Accept different Part 2 explanations that correctly mention whole unit squares, gaps, overlaps, curved edges, or slanted edges. Accept any challenge drawing made of exactly 12 connected unit squares with no gaps or overlaps.