Four Side Detectives

Sort figures by the number of straight sides they have.

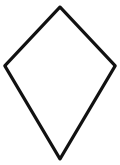
NY-5.G.3 "Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category."

NAME _____ DATE _____

HAS FOUR SIDES

A quadrilateral is a closed figure with exactly four straight sides. Rectangles, squares, rhombuses, parallelograms, trapezoids, and kites are subcategories of quadrilaterals, so each has four sides.

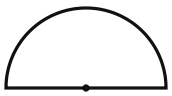
Example: This kite has four straight sides.



DOES NOT HAVE FOUR SIDES

A figure belongs here if it does not have exactly four straight sides. It may have fewer sides, more sides, or a curved edge.

Example: This semicircle has a curved edge, so it is not a quadrilateral.



1 SORT

8 items

For Part 1, circle the category for each figure, then for Part 2, choose one figure from each category and explain how the sides you can see, and any marks, prove each choice.

1.

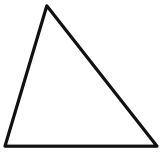


Figure 1

FOUR SIDES **NOT FOUR**

2.

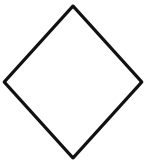


Figure 2

FOUR SIDES **NOT FOUR**

3.

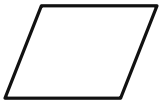


Figure 3

FOUR SIDES **NOT FOUR**

4.

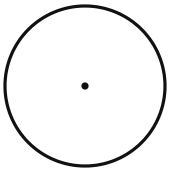


Figure 4

FOUR SIDES **NOT FOUR**

5.

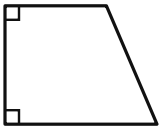


Figure 5

FOUR SIDES **NOT FOUR**

6.

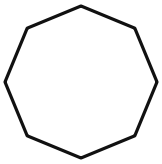


Figure 6

FOUR SIDES **NOT FOUR**

7.

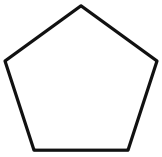


Figure 7

FOUR SIDES **NOT FOUR**

8.

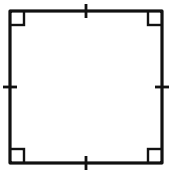


Figure 8

FOUR SIDES **NOT FOUR**

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

Draw and name one new figure with four sides and one new figure that does not have four sides.

FOUR SIDES

NOT FOUR

CHALLENGE

A square is a kind of rectangle, and a rectangle is a kind of quadrilateral. What property must every square have? Explain using the category chain.

ANSWER KEY

Four Side Detectives

GRADE 5 · NY-5.G.3

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (triangle)	**NOT FOUR**	A triangle has three straight sides.
2	Figure 2 (rhombus)	**FOUR SIDES**	A rhombus is a quadrilateral with four straight sides.
3	Figure 3 (parallelogram)	**FOUR SIDES**	A parallelogram is a quadrilateral with four straight sides.
4	Figure 4 (circle)	**NOT FOUR**	A circle has a curved edge and no straight sides.
5	Figure 5 (right_trapezoid)	**FOUR SIDES**	A right trapezoid has four straight sides.
6	Figure 6 (octagon)	**NOT FOUR**	An octagon has eight straight sides.
7	Figure 7 (pentagon)	**NOT FOUR**	A pentagon has five straight sides.
8	Figure 8 (square)	**FOUR SIDES**	A square is a quadrilateral with four straight sides.

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)

- **FOUR SIDES**: Has four sides: A student draws and names a parallelogram.
- **NOT FOUR**: Does not have four sides: A student draws and names a heptagon.

Challenge: Every square has four straight sides. A square is a rectangle, every rectangle is a quadrilateral, and all quadrilaterals have four straight sides.

Accept explanations that correctly count the visible straight sides or identify a curved edge. Emphasize that a property of the larger category, quadrilateral, also belongs to its subcategories, including rectangles and squares.