

Fold and Match

Sort figures by whether a fold can make matching halves.

NY-4.G.3 "Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry."

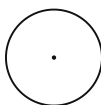
NAME _____

DATE _____

HAS A LINE OF SYMMETRY

A line of symmetry is a line where you can fold a figure so both parts match exactly.

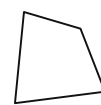
A circle has many lines of symmetry.



DOES NOT HAVE A LINE OF SYMMETRY

No fold line can make both parts of this figure match exactly.

This irregular quadrilateral has no line of symmetry.



1 SORT

8 items

For each figure, circle MATCHES or NO MATCH, then pick two figures and explain how folding each one helped you decide.

1.



Figure 1

MATCHES

NO MATCH

2.



Figure 2

MATCHES

NO MATCH

3.

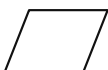


Figure 3

MATCHES

NO MATCH

4.



Figure 4

MATCHES

NO MATCH

5.

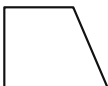


Figure 5

MATCHES

NO MATCH

6.



Figure 6

MATCHES

NO MATCH

7.

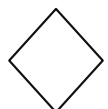


Figure 7

MATCHES

NO MATCH

8.

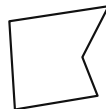


Figure 8

MATCHES

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 figure example that MATCHES and one new figure example that is NO MATCH.

MATCHES

NO MATCH

CHALLENGE

Draw a figure with exactly 2 lines of symmetry, and draw both lines.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (rectangle)	MATCHES	A rectangle has two lines of symmetry, one vertical and one horizontal through its center.
2	Figure 2 (isosceles)	MATCHES	An isosceles triangle has one line of symmetry from the top vertex to the midpoint of the base.
3	Figure 3 (parallelogram)	NO MATCH	A slanted parallelogram cannot be folded into matching halves.
4	Figure 4 (semicircle)	MATCHES	A semicircle has one line of symmetry perpendicular to its straight side.
5	Figure 5 (right trapezoid)	NO MATCH	A right trapezoid does not fold into two matching halves.
6	Figure 6 (polygon)	NO MATCH	This scalene triangle has no line that makes matching halves.
7	Figure 7 (rhombus)	MATCHES	A rhombus has two lines of symmetry, its diagonals.
8	Figure 8 (polygon)	NO MATCH	This irregular pentagon has no fold line that makes matching halves.

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)

- **MATCHES:** A regular octagon has lines of symmetry.
- **NO MATCH:** A scalene triangle has no line of symmetry.

Challenge: Draw a rectangle that is not a square. Draw one vertical line and one horizontal line through its center.

For Part 2, accept explanations that describe a possible fold line and tell whether the halves would match. Students may give different correct figures in Part 3.