

Fold Line Detectives

Sort figures by matching halves.

MA.2.GR.1 "Identify and analyze two-dimensional figures and identify lines of symmetry."

NAME _____

DATE _____

HAS A LINE OF SYMMETRY

A line can split the figure into two matching halves. If you fold on the line, the halves line up.

A regular pentagon.

HAS NO LINE OF SYMMETRY

No line can split the figure into matching halves. A fold would leave parts that do not line up.

An L-shaped figure.

1 SORT 8 items

Circle MATCHING or DIFFERENT for each figure, then pick two figures and explain whether a fold line would make matching halves.

- | | | |
|---|--------------------------------|---------------------------------|
| 1. A circle | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |
| 2. A triangle with 3 different side lengths | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |
| 3. A trapezoid with its top side shifted to the left | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |
| 4. A square | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |
| 5. A rectangle that is not a square | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |
| 6. A triangle with 2 equal sides | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |
| 7. A four-sided shape with all sides and angles different | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |
| 8. A regular hexagon | ☐ MATCHING | ☐ DIFFERENT |
| <hr/> | | |

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 or draw one new MATCHING figure and one new DIFFERENT figure.

MATCHING _____

DIFFERENT _____

CHALLENGE

Draw a figure with exactly 2 lines of symmetry. Draw both lines.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	A circle	MATCHING	Any line through the center makes two matching halves.
2	A triangle with 3 different side lengths	DIFFERENT	A scalene triangle has no line of symmetry.
3	A trapezoid with its top side shifted to the left	DIFFERENT	Its left and right sides do not match across a fold line.
4	A square	MATCHING	A square has 4 lines of symmetry.
5	A rectangle that is not a square	MATCHING	A non-square rectangle has 2 lines of symmetry.
6	A triangle with 2 equal sides	MATCHING	An isosceles triangle has 1 line of symmetry.
7	A four-sided shape with all sides and angles different	DIFFERENT	An irregular quadrilateral has no matching halves.
8	A regular hexagon	MATCHING	A regular hexagon has 6 lines of symmetry.

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)

- **MATCHING:** An oval.
- **DIFFERENT:** A triangle with side lengths 3 cm, 4 cm, and 5 cm.

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

Items 1, 4, 5, 6, and 8 are MATCHING. Items 2, 3, and 7 are DIFFERENT; accept explanations that correctly describe whether folding would make the halves line up.