

# Fold and Match

*Find lines that make matching halves.*

**GRADE 2 • 2.MG.3.a**

**2.MG.3.a** "Explore a figure using a variety of tools (e.g., paper folding, geoboards, drawings) to show and justify a line of symmetry, if one exists."

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## SYMMETRY CHECK

A line of symmetry splits a figure into two matching halves. Imagine folding on the line. If the halves cover exactly, the line works.

## WORKED EXAMPLE

A library card is a 6-by-4 rectangle. How many lines of symmetry does it have?

1. Draw a vertical line through the middle.
2. Fold in your mind. The left and right halves match.
3. Draw a horizontal line through the middle.
4. The top and bottom halves match.

**Answer: 2 lines of symmetry, one vertical and one horizontal.**

## PRACTICE 4 problems

- 1** A toy robot has matching left and right sides, but its top and bottom do not match. Draw its line of symmetry.

**ANSWER** \_\_\_\_\_

- 2** A cheese slice is a triangle with two equal slanted sides and a flat bottom. Draw its line of symmetry.

**ANSWER** \_\_\_\_\_

- 3** A snack label is a 3-by-1 rectangle. How many lines of symmetry does it have?

**ANSWER** \_\_\_\_\_

- 4** A kite picture has a longer left side than right side. Does it have a line of symmetry?

**ANSWER** \_\_\_\_\_

## APPLY IT Show your work

- 1** Noah makes a butterfly bookmark. The left wing is blue and has 2 dots. What should he put on the right wing to make a vertical line of symmetry?

WORK SPACE

ANSWER \_\_\_\_\_

- 2** Lina folds her rectangular movie ticket from top to bottom. The top and bottom halves cover exactly. Is the fold line a line of symmetry?

WORK SPACE

ANSWER \_\_\_\_\_

## CHALLENGE One step up

### CHALLENGE

A 7-by-3 robot sticker is a rectangle. Draw all its lines of symmetry. Explain in one sentence.

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## PART 1 • PRACTICE

| # | PROBLEM                                                                                                        | ANSWER                                                                 |
|---|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| 1 | A toy robot has matching left and right sides, but its top and bottom do not match. Draw its line of symmetry. | <b>A vertical line down the middle.</b>                                |
| 2 | A cheese slice is a triangle with two equal slanted sides and a flat bottom. Draw its line of symmetry.        | <b>A vertical line from the top point to the middle of the bottom.</b> |
| 3 | A snack label is a 3-by-1 rectangle. How many lines of symmetry does it have?                                  | <b>2 lines of symmetry, one vertical and one horizontal.</b>           |
| 4 | A kite picture has a longer left side than right side. Does it have a line of symmetry?                        | <b>No, it has no line of symmetry.</b>                                 |

## PART 2 • APPLY IT

1. **A blue right wing with 2 dots in matching places.** The right wing must be a mirror match of the left wing across the vertical middle line.
2. **Yes, the horizontal fold line is a line of symmetry.** The two halves cover exactly when folded, so the fold line is a line of symmetry.

## CHALLENGE

**It has 2 lines of symmetry, a vertical middle line and a horizontal middle line, because each fold makes matching halves.**

Accept centered vertical or horizontal lines. For figures with no symmetry, accept answers that say the halves would not match when folded.