

Symmetry Design Lab

Make matching halves with fold lines.

GRADE 2 • 2.MG.3.b

2.MG.3.b "Create figures with at least one line of symmetry using various concrete and pictorial representations."

NAME _____

DATE _____

MATCH BOTH SIDES

A line of symmetry splits a figure into matching halves. If you folded on the line, both halves would line up.

WORKED EXAMPLE

On a square grid, make a rectangle 4 squares wide and 2 squares tall. Add a vertical line of symmetry.

1. Draw the 4-by-2 rectangle.
2. Find the middle between the two center columns.
3. Draw a vertical line through the middle.
4. Check that each side is 2 squares wide.

Answer: A vertical line through the center of the rectangle.

PRACTICE 4 problems

- 1** Make a toy flag that is 5 squares wide and 1 square tall. Draw a vertical line of symmetry.

ANSWER _____

- 2** Make a snack card that is 1 square wide and 3 squares tall. Draw a horizontal line of symmetry.

ANSWER _____

- 3** A toy robot has a vertical fold line. Draw a circle button on the left, 1 square from the line. Finish the design.

ANSWER _____

- 4** A kite has a horizontal fold line. Draw a diamond above the line, 3 squares away. Finish the design.

ANSWER _____

APPLY IT Show your work

- 1** Ravi is making a sticker for his water bottle. He draws a vertical fold line and a circle on the left, 3 grid squares from it. What should he draw to finish a symmetric sticker?

WORK SPACE

ANSWER _____

- 2** Zoe's game badge has a horizontal fold line. A square is above the line, 1 grid square away. What should Zoe add?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

On a square grid, make a rectangle 7 squares wide and 3 squares tall. Draw every line of symmetry it has.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Make a toy flag that is 5 squares wide and 1 square tall. Draw a vertical line of symmetry.	A vertical line through the center square.
2	Make a snack card that is 1 square wide and 3 squares tall. Draw a horizontal line of symmetry.	A horizontal line through the center square.
3	A toy robot has a vertical fold line. Draw a circle button on the left, 1 square from the line. Finish the design.	Draw a same-size circle button on the right, 1 square from the line on the same row.
4	A kite has a horizontal fold line. Draw a diamond above the line, 3 squares away. Finish the design.	Draw a same-size diamond below the line, 3 squares away in the matching position.

PART 2 • APPLY IT

1. **Draw a same-size circle on the right, 3 grid squares from the fold line on the same row.** The matching circle goes on the opposite side of the vertical line. It must be the same distance from the line.
2. **Add a same-size square below the fold line, 1 grid square away in the matching position.** A horizontal symmetry line matches shapes above and below it. The square must be the same distance from the line.

CHALLENGE

Draw 2 lines of symmetry: one vertical line through the center and one horizontal line through the center.

Accept correctly drawn matching halves that are the same size and the same distance from the stated line. For the challenge, accept only the vertical and horizontal center lines.