

Do Ends Meet?

Sort figures by whether they join all the way around.

MA.2.GR.1.2 "Categorize two-dimensional figures based on the number and length of sides, number of vertices, whether they are closed or not and whether the edges are curved or straight."

NAME _____

DATE _____

CLOSED FIGURE

A closed figure has no loose ends. Its lines or edges join all the way around.

A coin outline is closed.

OPEN FIGURE

An open figure has loose ends. Its lines or edges do not join all the way around.

The letter C is open.

1 SORT 8 items

For Part 1, circle CLOSED or OPEN for each figure, then for Part 2, choose two item numbers and tell how the ends of each figure helped you decide.

1. 1. A circle

CLOSED

OPEN

2. 2. A rectangle

CLOSED

OPEN

3. 3. A line segment

CLOSED

OPEN

4. 4. An oval

CLOSED

OPEN

5. 5. A curved path with two ends

CLOSED

OPEN

6. 6. A zigzag path with two ends

CLOSED

OPEN

7. 7. A pentagon

CLOSED

OPEN

8. 8. Three straight segments that touch in a row

CLOSED

OPEN

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

For Part 3, write one new example of a CLOSED figure and one new example of an OPEN figure.

CLOSED _____

OPEN _____

CHALLENGE

Draw a closed figure with only curved edges and an open figure with only straight edges. Write one sentence telling how their ends are different.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	1. A circle	CLOSED	A circle joins all the way around and has no ends.
2	2. A rectangle	CLOSED	All four sides meet to make a closed figure.
3	3. A line segment	OPEN	A line segment has two ends.
4	4. An oval	CLOSED	An oval joins all the way around and has no ends.
5	5. A curved path with two ends	OPEN	The two ends do not meet.
6	6. A zigzag path with two ends	OPEN	The path has two loose ends.
7	7. A pentagon	CLOSED	Its five sides meet all the way around.
8	8. Three straight segments that touch in a row	OPEN	The segments make a path with two ends.

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)

- **CLOSED:** A hexagon.
- **OPEN:** A spiral.

Challenge: I drew a closed curved loop and an open path made of two straight segments. The loop has no ends, but the path has two ends.

Part 1 answers are CLOSED, CLOSED, OPEN, CLOSED, OPEN, OPEN, CLOSED, OPEN. For Part 2, accept explanations that correctly state whether the figure's ends meet or do not meet.