

Shape Check

Sort figures by the polygon rule.

3.MG.4.a "Describe a polygon as a closed plane figure composed of at least three line segments that do not cross."

NAME _____

DATE _____

POLYGONS

A polygon is a closed plane figure composed of at least three line segments that do not cross.

A rhombus is a polygon.

NOT POLYGONS

A figure that is open, uses a curve, has fewer than three line segments, or has crossing line segments is not a polygon.

A crescent is not a polygon because it has curved edges.

1 SORT

8 items

Circle POLYGONS or OTHERS for each figure, then for PROVE IT, choose two item numbers and write how each figure does or does not fit the polygon rule.

1. A triangle

POLYGONS

OTHERS

2. A circle

POLYGONS

OTHERS

3. A rectangle

POLYGONS

OTHERS

4. An open zigzag made of four line segments

POLYGONS

OTHERS

5. A pentagon

POLYGONS

OTHERS

6. A closed figure made of four line segments that cross in the middle

POLYGONS

OTHERS

7. An octagon

POLYGONS

OTHERS

8. A closed figure made of six line segments that do not cross

POLYGONS

OTHERS

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 example of a polygon and one new example that is not a polygon.

POLYGONS _____

OTHERS _____

CHALLENGE

Draw a closed figure made of at least three line segments that is not a polygon. Then write why it is not a polygon.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	A triangle	POLYGONS	A triangle is closed and has three line segments that do not cross.
2	A circle	OTHERS	A circle is made of a curve, not line segments.
3	A rectangle	POLYGONS	A rectangle is closed and has four line segments that do not cross.
4	An open zigzag made of four line segments	OTHERS	The figure is open.
5	A pentagon	POLYGONS	A pentagon is closed and has five line segments that do not cross.
6	A closed figure made of four line segments that cross in the middle	OTHERS	Its line segments cross.
7	An octagon	POLYGONS	An octagon is closed and has eight line segments that do not cross.
8	A closed figure made of six line segments that do not cross	POLYGONS	It is closed, has at least three line segments, and the segments do not cross.

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)

- **POLYGONS:** A closed figure made of nine line segments that do not cross.
- **OTHERS:** An open figure made of five line segments.

Challenge: Sample drawing: a closed four-segment figure whose sides cross in the middle. Its line segments cross, so it is not a polygon.

Items 1, 3, 5, 7, and 8 are POLYGONS. Items 2, 4, and 6 are OTHERS. In PROVE IT, students should name a rule detail such as closed, line segments, at least three segments, or no crossing segments.