

Polygon Name Detectives

Name polygons by their sides, whatever the direction.

GRADE 3 • 3.MG.4.c

3.MG.4.c "Identify and describe triangles, quadrilaterals, pentagons, hexagons, and octagons in various orientations, with and without contexts."

NAME _____

DATE _____

For each supplied outline, write its polygon name and number of sides and vertices. Trace around once to explain your count aloud. A vertex is a corner where two sides meet.

Count, name and describe

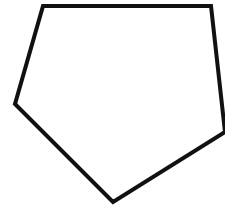
A polygon has a closed boundary of straight sides. Three sides: triangle; four: quadrilateral; five: pentagon; six: hexagon; eight: octagon. Turning a shape changes its direction, not its side or vertex count.

Try it together

Example

Name this outline and describe its sides and vertices.

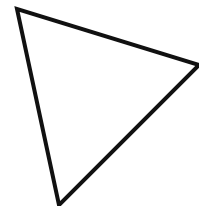
Count five straight sides around the closed boundary. Count five vertices where neighboring sides meet. Pentagon: 5 sides and 5 vertices.



1. Outline A

Outline A

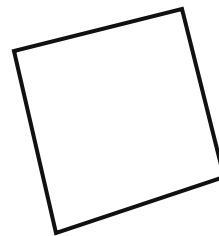
Name outline A. Write its number of sides and vertices.



2. Outline B

Outline B

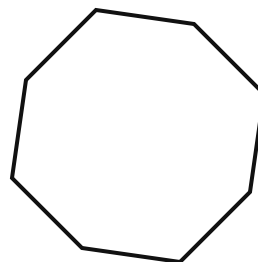
Name outline B. Write its number of sides and vertices.



3. Outline C

Outline C

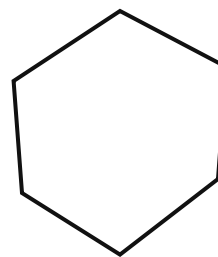
Name outline C. Write its number of sides and vertices.



4. Outline D

Outline D

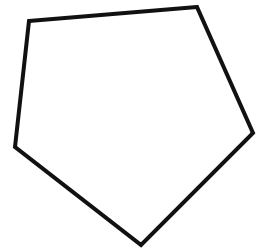
Name outline D. Write its number of sides and vertices.



5. Window outline

A builder sketches this window outline. Name its polygon and give its number of sides and vertices. Explain aloud how you counted each side once.

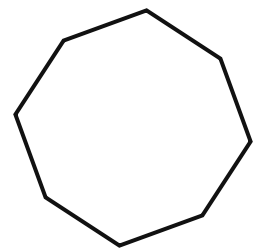
Window outline



6. Turned sign

This is the outline of a sign viewed at a tilt. Name its polygon and give its side and vertex counts. Would turning it upright change its name? Explain aloud.

Sign outline



7. Turn and draw

Draw a hexagon in the blank box in a different orientation from outline D. Number its sides 1-6. On the line, write its name and number of vertices. Explain aloud why its name stayed the same.

Teacher notes

Judge polygon names by side count, regardless of orientation or unequal side lengths. Drawings must be closed with straight sides meeting at endpoints. For the hexagon, require six sides in an orientation different from D.

Task 1

Triangle: 3 sides and 3 vertices.

Task 2

Quadrilateral: 4 sides and 4 vertices.

Task 3

Octagon: 8 sides and 8 vertices.

Task 4

Hexagon: 6 sides and 6 vertices.

Task 5

Pentagon: 5 sides and 5 vertices.

Trace the five straight edges once; each neighboring pair meets at one of five vertices.

Task 6

Octagon: 8 sides and 8 vertices. Turning does not change its name.

Rotation preserves all eight edges and vertices.

Task 7

A closed hexagon turned relative to D, with six numbered sides and 6 vertices. Turning preserves its name.