

Chapter 2 | Geometry Language: Points, Lines, Angles, Polygons, and Solids

Worksheet C | Mixed Practice & Application

Name: _____ Grade: _____ Date: _____

Warm-up: Worked Examples

Example 1: Point, Line, Segment, or Ray

Problem: Name each object: a beam that starts at P and continues forever one way; a road represented forever both ways; a side of a triangle; a labelled location A.

Starts at P	=>	ray
Forever both ways	=>	line
Two endpoints =>		line segment
One location	=>	point

Example 2: Identify the Vertex of an Angle

Problem: Rays RS and RT meet at R. Name the vertex of the angle.

Common endpoint	=>	R
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Example 3: Decide Whether a Figure Is 2-D or 3-D

Problem: Classify a circle, a rectangular box, a triangle, and a sphere.

Flat	=>	circle, triangle = 2-D
Takes up space	=>	rectangular box, sphere = 3-D

Example 4: Identify a Polygon

Problem: Decide whether a closed six-sided figure, a circle, a curved closed figure, and an open triangle are polygons.

Closed + straight	=>	six-sided figure = polygon
Curved	=>	circle and curved figure = not polygons
Not closed	=>	open triangle = not a polygon
Closed + 6 straight	=>	hexagon

Example 5: Name a Polygon by Its Sides

Problem: A closed 2-D shape has 6 straight sides. What is its name?

Count sides	=>	6 sides
Name	=>	hexagon

Example 6: Common-Trap Solid Vocabulary

Problem: A student calls the line segment where two faces of a cube meet a vertex. Explain the mistake.

Wrong	⇔	meeting line = vertex
Correct	⇔	meeting line = edge

Practice

1. A figure has two endpoints and can be measured. Name the figure.

2. A figure has arrows at both ends. Name the figure.

3. A shape is closed, flat, and has 6 straight sides. Is it a polygon? Explain how you know.

4. A cube has flat surfaces and straight edges only, with no curves anywhere. Is a cube a polygon? Explain.

5. A student calls a dice a square. Explain what the student noticed correctly and what the student missed.

6. A soup can has two circular bases and one curved surface. Is it a 2-D shape or a 3-D solid?

7. A rectangular prism has 6 flat surfaces, 12 places where flat faces meet, and 8 corners. Name these parts.

8. A student says a ray and a line segment are the same because both are straight. Explain the difference.

9. A soccer ball is covered in flat pentagon and hexagon panels. Is the soccer ball itself 2-D or 3-D? Explain.

10. A basketball is round. Is it a circle or a sphere? Explain.

11. A shape has several straight sides, but they do not all connect into one closed boundary. Can it be called a polygon, regardless of how many sides it has? Explain.

12. A shape is closed, made only of straight sides, and has 11 sides. Even without knowing its special name, is it a polygon? Explain.

13. A student points to the corner of a cube and says, "That is a face." Explain the mistake.

14. Non-Routine Item 1: A figure is flat, closed, and made from five sides. Four sides are straight, but one side is curved. Is it a polygon? Explain which part of the definition is not met.

15. Non-Routine Item 2: A rectangular prism is sitting on a desk. A student touches the top flat part, traces one line where the top meets a side, and points to a top corner. Name each part and explain why the names cannot be used interchangeably.
