

Lesson Notes

9.1

NAME _____

Module 9 Characteristics of Geometric Shapes
Lesson 1 Polygons

Lesson Objectives

- Identify and model regular and irregular polygons including decagon.
- Identify and model convex and concave polygons.
- Identify, draw, classify, and compare geometric figures using models and real-world examples.

Subtopic 1 Convex and Concave Polygons

Polygon

- A **closed** plane figure
- Made of line **segments** called sides
- Sides intersect at **vertices**

A plane figure is flat or **two-dimensional** and lies entirely in one plane.

A polygon is **convex** if a line segment joining any two interior points lies **entirely** inside the polygon.

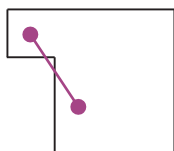
A polygon is concave if a **line segment** joining any two interior points lies partially **outside** the polygon.

- 1** Is the outline of the sign a polygon? Explain your answer.



No: Parts of the outline of the sign are curved.

- 2** Is the polygon convex or concave?



Concave

Subtopic 2**Classifying Polygons According to Sides**

Polygons are classified according to their number of sides.

Polygon	Sides
triangle	3
<u>quadrilateral</u>	4
pentagon	5
<u>hexagon</u>	6
heptagon	7
<u>octagon</u>	8
nonagon	9
<u>decagon</u>	10

3

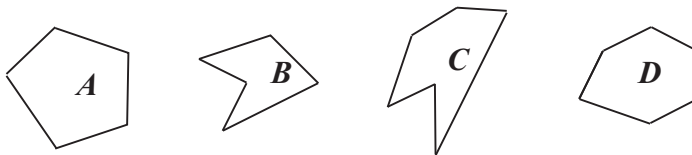
An Earth picture shows the view of a building in Washington, DC. The building is named for the number of sides it has. What is the name of the building?



Pentagon

4

Identify the concave hexagon.



C

NAME _____

Module 9 **Characteristics of Geometric Shapes**
Lesson 1 **Polygons**

Subtopic 3 **Regular and Irregular Polygons**

Regular Polygon

A polygon that is both equiangular and equilateral

Irregular Polygon

A polygon that is not a regular polygon

5 Is a square a regular polygon? Explain.

Yes: A square has four equal sides and four right angles.

