CLASSIFYING POLYGONS

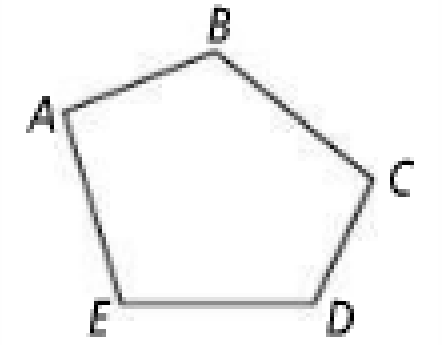
Unit 1 Lesson 6

Classifying Polygons

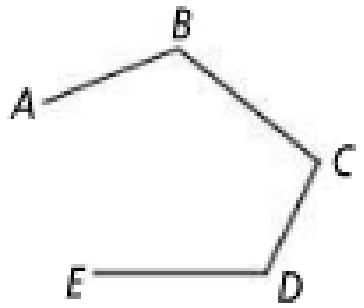
In geometry, a figure that lies in a plane is called a **plane figure**.

A **polygon** is a closed plane figure formed by three or more segments. Each segment intersects exactly two other segments at their endpoints. No two segments with a a common endpoint or collinear. Each segment is called a side. Each endpoint is called a vertex.

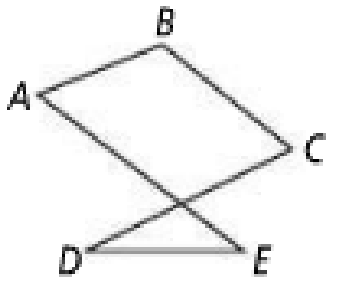
Classifying Polygons



A polygon



Not a polygon;
not a closed figure

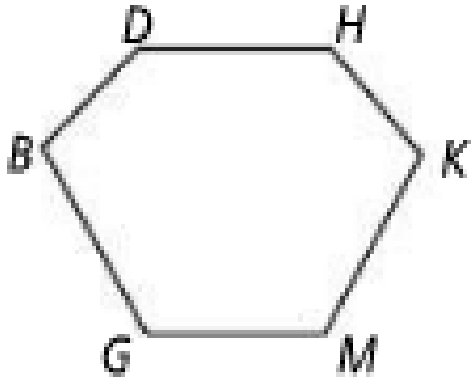


Not a polygon;
two sides intersect
between endpoints.

Classifying Polygons

To name a polygon, start at any vertex and list the vertices consecutively in a clockwise or counterclockwise direction.

Two names for this polygon are DHKMGB and MKHDBG.



Classifying Polygons

You can classify a polygon by its number of sides. The tables below show the names of some common polygons.

Names of Common Polygons

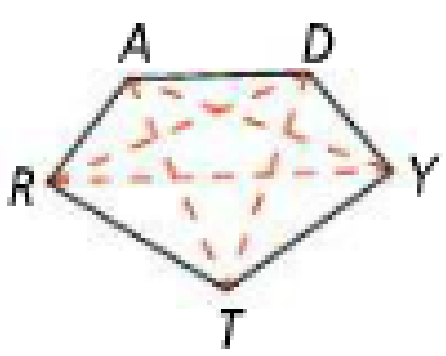
Sides	Name
3	Triangle, or trigon
4	Quadrilateral, or tetragon
5	Pentagon
6	Hexagon
7	Heptagon
8	Octagon

Sides	Name
9	Nonagon, or enneagon
10	Decagon
11	Hendecagon
12	Dodecagon
⋮	⋮
n	*n*-gon

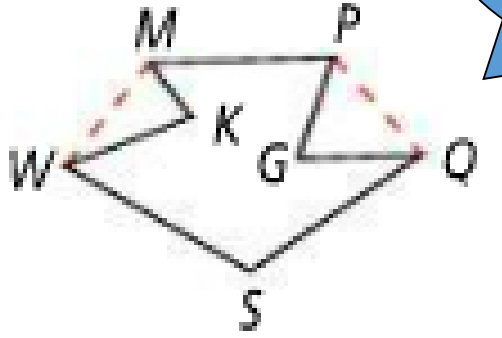
Classifying Polygons

You can also classify a polygon as concave or convex, using the diagonals of the polygon.

A **diagonal** is a segment that connects two NONconsecutive vertices.



A **Convex** polygon has no diagonal with points outside of the polygon



A **Concave** polygon has at least one diagonal with points outside of the polygon