**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_**

**Core Math Idea:** How can you use the pattern between the **number of sides** and the **angle sum** to calculate the measure of an **angle** in a **regular polygon**?

**Warm – Up:**

 Tell whether each figure is a polygon. **Explain** how you know.





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 **Good to know!**

 A **regular polygon** is a polygon in which all of the sides are the same length and all of the angles have the same measure.

 Draw an example of a regular polygon (with less than 6 sides) and estimate the measure of one of the angles. **Be ready to share!**

How could you find the total **angle sum** of the shape you drew above?

1. Use an angle ruler to measure the angles in the equilateral triangle, the square, the regular pentagon, and the regular hexagon from the Shapes Set.



1. Describe a pattern that your table group noticed about the triangle, square, pentagon, and hexagon.

**1.**

**2.**

**3.**

**4.**

1. Describe a pattern that your table group noticed about the triangle, square, pentagon, and hexagon.
2. Use the pattern you noticed to fill in the table for regular polygons with seven, eight, nine, and ten sides. Check to see if your pattern works for the heptagon (E) and the octagon (F) by measuring the angles.



**7**

**8**

**9**

**10**

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**Homework:**

Predict the **angle sum** for a 12-sided regular polygon. Explain how you got your answer.

What would the **measure of each angle** be for a 12-sided regular polygon?