

## Mathematics: Geometry Level 2 - Unit D - Polygons

### Targeted Goals from Stage 1: Desired Results

**Content Knowledge:** the sum of the measures of the angles of a triangle is 180, the measure of an exterior angle of a triangle is equal to the sum of the remote interior angles, the Midline Theorem for triangles, the No Choice Theorem for triangles, the sum of the interior angles of a polygon with  $n$  sides =  $(n - 2)180$ , the sum of the exterior angles of a polygon with  $n$  sides = 360 (regardless of  $n$ ), the number of diagonals in a polygon with  $n$  sides =  $\frac{n(n-3)}{2}$ , regular polygons with interior and exterior angles

**Vocabulary:** exterior angle, interior angle, pentagon, hexagon, heptagon, octagon, nonagon, decagon, dodecagon, pentadecagon,  $n$ -gon, regular polygon, concave, convex, exterior angle, interior angle, diagonal, similar, dilation, reduction

**Skills:** using interior and exterior angles measures of a polygon to solve problems, solving regular polygon problems involving angles, applying the Midline Theorem, using AAS to find triangles congruent, solving problems involving the number of diagonals in a polygon, identifying whether a pair of polygons is similar, using proportional reasoning and congruent corresponding angles to find missing dimensions of similar polygons, applying theorems involving proportionality

#### Expectation:

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
Monday: Introduction Video	Video on Google Classroom - Personalized	Google Form - Personalized
Tuesday: 7.1	<u>Triangle Applications Theorems - 7.1</u>	Bookwork: Pages 298-299, #s 1-5, 7
Wednesday: 7.3 (int and ext angle formulas)	<u>Sum of interior and exterior angles Khan - 7.3</u>	<u>Khan Assignment</u>
Thursday: 7.3 (diagonals)	<u>Video on Google Classroom</u>	Bookwork: Pages 309-310, #s 1,2, 4-7, 10abc
Friday: 7.4 Regular Polygons	<u>Video on Google Classroom</u>	Bookwork: Pages 316-317, #s 1-4

**Week criteria for success** (attach student checklists or rubrics):

By the end of this module, students will be able to:

- Apply theorems about interior angles, exterior angles and midlines of triangles.
- Apply the No-Choice Theorem and AAS theorem (Honors only).
- Use some important formulas that apply to polygons.
- Recognize regular polygons, use formula to find the measure of an exterior angle of an equiangular polygon.

**Supportive resources and tutorials for the week** (plans for re-teaching): Khan Academy, Kuta Software worksheets, Office Hours