HPISD CURRICULUM
(MATH, GRADE 8)

EST. NUMBER OF DAYS: 10

UNIT NAME	**UNIT 10: PERIMETER, AREA, AND ANGLE RELATIONSHIPS**	
Unit Overview	**Unit 10 addresses perimeter, circumference, and area, including the proportional changes with scale factor as well as angle relationships in parallel lines and triangles.**	
Generalizations/Enduring Understandings	**Geometry is used to model and describe the physical world.** **Facts about the angle sum and exterior angles of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.** **Right triangle and similar figure relationships can be used to find unknown measurements without the use of tools.** **Changes in dimensions affect linear, area, and volume measures of 2- and 3-dimensional figures.**	
Concepts	**Relationships in Geometry : Connect properties of angles, parallel lines, and triangles** **Measurement: Some attributes of objects are measureable and can be quantified using unit amounts.** **Shapes and Solids: Two- and three-dimensional objects with or without curved surfaces can be described, classified, and analyzed by their attributes.**	
Guiding/Essential Questions	**How can proportional reductions and enlargements of geometric figures be described mathematically?** **How can geometric relationships be used perform indirect measurements?** **How are perimeter, circumference, and area affected by proportional changes in a figure's dimensions?** **What conclusions can be made about the angles formed by parallel lines that are cut by a transversal?** **How is similarity of triangles determined?**	
	Performance Levels	***Learning Progression* (*** Decision Point)**
Learning Targets	LEVEL 4: ***LEVEL 3:*** LEVEL 2:	Students will use geometric characteristics and properties to solve problems
	LEVEL 4: ***LEVEL 3:*** LEVEL 2:	
Formative Assessments	*Title*	
Summative Assessments	*Title*	

<table>
<tr><td></td><td colspan="2">TEKS</td></tr>
<tr><td rowspan="3">TEKS</td><td>TEKS: Readiness Standards</td><td>TEKS: Supporting Standards</td></tr>
<tr><td></td><td>8.8(D) Use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-criterion for similarity of triangles
8.10(D) Model the effect on linear and area measurement of dilated two-dimensional shapes.</td></tr>
<tr><td colspan="2">TEKS Process Standards
8.1(A) apply mathematics to problems arising in everyday life, society, and the workplace
8.1(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
8.1(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems
8.1(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
8.1(E) create and use representations to organize, record, and communicate mathematical ideas
8.1(F) analyze mathematical relationships to connect and communicate mathematical ideas
8.1(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication</td></tr>
<tr><td>Processes and Skills</td><td>Use knowledge about perimeter, circumference, and area to find a missing dimension.

Find the perimeter/circumference/area of 2-dimensional figures, including complex/composite figures.

Use scale factor to find the proportional changes between 2dimensional figures.

Dilate a figure using a given scale factor.

Determine the scale factor used for a given dilation.

Identify congruent angles based on their position on parallel lines that are cut by a transversal</td><td>Perimeter, circumference, and area formulas for fundamental figures.

The area of a composite figure is equal to the sum of the areas of the shapes of which it is composed.

Scale factor is the ratio of any two corresponding lengths in two similar figures.

Sum of the measures of the interior angles of a triangle is always 180º.

Measure of an exterior angle is equal to the sum of its remote interior angles.

Two triangles are similar if it can be shown that two angles of one triangle are congruent to two angles of the other triangle.</td></tr>
</table>

Topics	Alternate exterior Alternate interior Area Circumference Composite figures Corresponding angles Dilations Measure of exterior angles equaling the sum of its remote interior angles Parallel lines cut by a transversal Perimeter Proportional change Same-side interior angles Scale factor Sum of the measure of the interior angles in a triangle Triangle similarity
Language of Instruction	alternate exterior alternate interior, area base circumference corresponding angles dilation dimensions height length parallel lines perimeter proportional changes ratio remote interior angles same-side interior scale factor square units transversal width
State Assessment Connections	
National Assessment Connections	
Resources	