

HPISD Curriculum: Geometry Pre-AP TAG								
Title		Estimated Duration	6 Weeks					
Unit 1: Tools of Geometry		2 weeks	1	2	3	4	5	6
Unit Overview								
Understand the structure of, and relationships within, an axiomatic system. Analyze geometric relationships in order to make and verify conjectures.								
Enduring Understandings								
<b>The student will understand that:</b>		<ul style="list-style-type: none"> <li>• Points, lines, and planes are the foundations of geometry.</li> <li>• The formula for the length of any line segment is derived from the Pythagorean Theorem.</li> <li>• The midpoint coordinates of a segment are derived by averaging the coordinates of the segment endpoints.</li> <li>• The differences and similarities among congruence, length, points, lines, planes, segments, midpoints, segment bisectors, and the notation used to denote them.</li> <li>• Using algebraic properties, definitions, and postulates can lead to conclusions about angles and angle pairs.</li> <li>• A compass and straightedge can be used to measure congruent distances, and combinations of those measurements can/will be used to construct more advanced representations of geometric concepts.</li> </ul>						
Concepts	Guiding/Essential Questions							
<ul style="list-style-type: none"> <li>• foundations</li> <li>• relationships</li> </ul>	<ul style="list-style-type: none"> <li>• Why are <i>point</i>, <i>line</i>, and <i>plane</i> the undefined terms of geometry?</li> <li>• How does geometry help describe the physical world?</li> <li>• How is the distance formula related to the Pythagorean Theorem?</li> <li>• What are the possible relationships between two intersecting planes and a line that is not contained in either of the planes?</li> <li>• What would be the reasoning to justify whether all angles have complements and supplements?</li> </ul>							
Learning Targets								
Formative Assessments			Summative Assessments					
homework, quizzes			test					

TEKS: Readiness Standards	TEKS: Supporting Standards	
<p><b>G.2B</b> Make conjectures about angles, lines, polygons, circles, and three-dimensional figures and determine the validity of the conjectures, choosing from a variety of approaches such as coordinate, transformational, or axiomatic.</p> <p><b>G.7C</b> Derive and use formulas involving length, slope, and midpoint.</p> <p><b>G.8C</b> Derive, extend, and use the Pythagorean Theorem.</p>	<p><b>G.1A</b> Develop an awareness of the structure of a mathematical system, connecting definitions, postulates, logical reasoning, and theorems.</p> <p><b>G.2A</b> Use constructions to explore attributes of geometric figures and to make conjectures about geometric relationships.</p> <p><b>G.3B</b> Construct and justify statements about geometric figures and their properties.</p> <p><b>G.7A</b> Use one- and two-dimensional coordinate systems to represent points, lines, rays, line segments, and figures.</p>	
Processes and Skills: What students should be able to DO	Facts: What students should KNOW	
<ul style="list-style-type: none"> <li>• Apply coordinate formulas.</li> <li>• Use points, lines, and planes.</li> <li>• Extend the concept of points, lines, and planes to define segments and their bisectors.</li> <li>• Define all types of angles and angle pairs.</li> <li>• Apply formulas to coordinate geometry.</li> <li>• Construct geometric figures.</li> </ul>	<ul style="list-style-type: none"> <li>• Formula's for Distance and Midpoint</li> <li>• Pythagorean Theorem &amp; Converse</li> <li>• Undefined terms in Geometry</li> </ul>	
Topics		
Distance and Midpoint Points, Lines, Planes, and Segments	Angle Measure Angle Relationships	Coordinate Geometry Pythagorean Theorem & Converse
Language of Instruction		
Acute Angle Adjacent Angles Angle Angle Bisector Between Collinear Complementary Angles	Intersection Length Line Linear Pair Locus Measure Midpoint	Plane Point Pythagorean Theorem Ray Right Angle Segment Segment Bisector

Congruent	Midpoint Formula	Space
Construction	Obtuse Angle	Straight Angle
Coordinate Formulas	Opposite Rays	Supplementary Angles
Coplanar	Parallel	Undefined Terms
Distance	Perimeter	Vertical Angles
Distance Formula	Perpendicular	
Endpoint	Perpendicular Bisector	
Equidistant	Perpendicular Lines	
<b>State Assessment Connections</b>		<b>National Assessment Connections</b>
<b>Resources</b>		
<p><u>Glencoe: Geometry</u>                      1.1, 1.2, 1.3, 1.4, 1.5, Laying the Foundation</p>		
<b>Possible TAG Extensions</b>		
<p>Distance and Midpoint Formula's for points in space (x,y,z)                      Possible Laying the Foundation activity involving Pythagorean theorem                      Class discussion</p>		