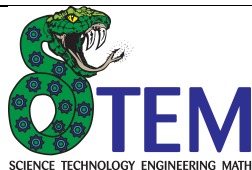


Leadership and Collaboration

Unit Length: 2 Weeks

		Mathematics Unit Plan			
Teacher: Williamson		Grade: 9		Course: Geometry	
Unit Title: Leadership and Collaboration					
LEARNING TARGETS					
LT1: I can use coordinates to prove simple geometric theorems. (CC.GPE.12).					
UNIT OVERVIEW		Overall summary of the unit, activities, tasks, and/or content.			
In this unit, students will develop an understanding of the importance of collaboration within a math class, and will practice applying the mathematical habits of interaction as they use coordinates to prove simple geometric theorems, and experiment with making formal geometric constructions using a variety of tools. Students will also continue to develop mathematical vocabulary as they interpret and articulate precise definitions of geometric terms.					
MOTIVATORS		Hooks for the unit and supplemental activities. (PBL scenarios, video clips, websites, literature)			
~Video clip from Who want to be a Millionaire- When not knowing math can cost you 15,000. <ul style="list-style-type: none">https://www.youtube.com/watch?v=BbX44YSsQ2I ~Video Clip “ Home Quick Planner” <ul style="list-style-type: none">https://www.youtube.com/watch?v=YevQFlltPY					
Week	Learning Targets	Materials & Resources	Instructional Procedures	Differentiated Instruction	Assessment
1	I can use precise definitions of angle, perpendicular line, parallel line and line segment based on the undefined notion of point, line and	TI NSPIRE scavenger hunt. <ul style="list-style-type: none">Education.ti.com/en/us/activity/detail?id Task Arc “Investigating Coordinate Geometry ”from TN Department of Education Graph paper Ruler (or straight edge)	<u>Essential Questions:</u> How can I use technology to enhance my learning in and out of the classroom? How do I calculate the distance between two points? How can I calculate the area and perimeter of a figure given only coordinates of vertices? <u>Set:</u> Using a bubble graphic organizers students and teacher will brainstorm with teacher ways we use geometry in the real world.	<u>Remediation</u> Stations will have folders with examples and formulas to find the area and perimeter of triangles, trapezoids and parallelograms, and leveled worksheets. <u>Enrichment</u> Using Google earth,	<u>Summative:</u> Assessment- Floor plan drawing of dream house including calculations of perimeters and areas along with cost. Rubric included in Unit 1 Lesson 4: Dream house Design. See : williamsongeometry9@blogspot.com unit

<p>distance along a line. (CC.CO.A1)</p> <p>I can use coordinates to prove simple geometric theorems algebraically. (CC.GPE.B.4)</p> <p>I can use coordinates to compute perimeter and areas of triangles and rectangles using the distance formula. (CC.GPE.B.7)</p>	<p>iPad</p> <p>Calculator</p>	<p>Students will watch video clip of “Home Quick Planner” and teacher and students will engage in a whole group discussion regarding use of formulas such as distance, midpoint, area and perimeter in real world applications.</p> <p>Students and teacher will engage in a whole group discussion about their dream home floor plan. How many bedrooms and bathrooms would they like? Teacher will explain that students will design their own one level dream home. All of this must be incorporated into a plan first, and perimeter and area must be calculated to estimate the total costs in order to estimate the amount of materials to buy and what they may cost.</p> <p><u>Teaching Strategies</u></p> <ul style="list-style-type: none"> Students will complete scavenger hunt of TI inspire using a partner. Partners will then compare answers with one other pair of students. Students will form groups, then break apart into a jigsaw group to read articles regarding the use of geometry in the real world. After each group reads, takes notes and summarizes an assigned article, they will rejoin their original group to share their article summaries with other group members. Teacher will then assign groups to debate the topic- which is more important- geometry or algebra? Students should use information from articles to defend their position. Articles can be found at williamsonggeometry9@blogspot.com unit 1. Lesson 1: Transformations Students will work tasks in groups from task arc. “Investigating Coordinate Geometry and Its Use in Solving Mathematical Problems” Individual, pair and whole group instructions are included. Students will design the floor plan of their dream home on a coordinate plane. Students should use each quadrant, making sure that all vertices are plotted on integer coordinates. Students may have to modify their design slightly in order to transfer the diagram successfully. Allow students access to graph paper, rulers, and protractors for this task. Students will devise a method to determine the length of each of their walls and the total perimeter of their floor plan. Students must specify their scale. Students will add a yard, with a pool around their floor plan. Using the coordinates and the scale they created, students will determine the perimeter of the yard, the perimeter of the pool, and the area of 	<p>students can find a monument or landmark and calculate the area and perimeter..</p> <p><u>Learning Styles</u> Visual. Auditory and kinesthetic Flexible Grouping</p>	
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			<p>their yard that would need to be covered with sod. Students may need to cut the yard into more manageable figures in order to determine the area.</p> <ul style="list-style-type: none"> Students will research the prices of fencing, stone and sod to calculate the cost of landscaping materials. All directions and necessary documents can be found in unit 1 Lesson 4: Dream House Design on teacher blog: Williamsongometry9.blogspot.com <p><u>Summarizing Strategy</u> Students will complete a reflective writing activity describing their strengths and weaknesses for finding perimeter and area for given polygons.</p> <p>Students will evaluate the designs of two other students, and will compare costs of wall and floor coverings in each house design. Students will then analyze what caused some floor plans to be more or less expensive than others., and will address this in reflective writing assignment.</p> <p><u>Homework</u></p> <ul style="list-style-type: none"> Students will watch teacher created videos regarding distance and midpoint formula, and will complete the guided summaries and questions that accompany each video. <p>See: https://williamsongometry9.blogspot.com Lesson 2: Midpoint Formula Lesson 3: Distance Formula</p>		
2	<p>I can find the point on a directed line segment between two given points that partitions the segment in given ratio. (CC. GPE.6)</p> <p>I can prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g.,</p>	<p>Graphic organizer partitioning formula</p> <p>Graphic organizer compare/contrast methods of calculating distance.</p> <p>Handout of NYC Task from GA DOE Math Frameworks Unit 6 ACC Analytic Geometry.</p> <p>Fuse App supporting lessons 1.1,1.2,1.5,1.6, 3.5 and 3.6.</p> <p>Teacher created videos</p> <p>Kuta software.com worksheets</p> <p>Graph paper</p>	<p><u>Essential Questions:</u> How can I partition a line? How can I write the equation of a line that goes through a given point and is parallel or perpendicular to another line?</p> <p><u>Set:</u> Teacher led discussion of street layout of different cities, focusing on grid pattern in NYC.</p> <p><u>Teaching Strategies</u></p> <ul style="list-style-type: none"> Working in pairs, students will complete NYC task from GA DOE Math Frameworks. https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_9-12_AccelCoorAlgebraAnalyticGeom_Unit6.pdf Students will complete lesson "Finding Equations of parallel and perpendicular lines." The lesson is 	<p><u>Remediation</u> Intervention activity embedded in task.</p> <p><u>Enrichment</u> Extension activity embedded in task.</p> <p><u>Learning Styles:</u> Auditory, visual and kinesthetic.</p>	<p><u>Formative:</u> MDC lesson assessment for finding equations of parallel and perpendicular lines.</p> <ul style="list-style-type: none"> http://map.mathshell.org/materials/lessons.php?taskid=226&subpage=concept, <p><u>Summative:</u> Euler's Village Cumulative Task from GA DOE Math Frameworks Unit 6 ACC Analytic Geometry.</p> <ul style="list-style-type: none"> https://www.georgiastandards.org/Common-Core/Common%20Core%20Frameworks/CCGPS_Math_9-12_AccelCoorAlgebraAnal

	<p>find the equation of a line parallel or perpendicular to a given line that passes through a given point).</p> <p>(CC.-GPE.5)</p>		<p>found at http://map.mathshell.org/materials/lessons.php?taskid=226&subpage=concept, and is designed to help students understand the relationship between the slopes of parallel and perpendicular lines. It also encourages best mathematical practices by encouraging discussion about equations of lines.</p> <p><u>Summarizing Strategy</u> Students will complete a frayer diagram for partitioned segments. They will include a definition in their own words, characteristics of partitioned segments, an example of one and a non-example.</p> <p><u>Homework</u></p> <ul style="list-style-type: none"> Students will watch the teacher created video regarding partitioning a line and will complete the guided summary and questions that accompany the video. See: https://Williamsongeometry9.blogspot.com Lesson 4: Partitioning a line 		<p>yticGeom_Unit6.pdf</p>
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