Teacher Name: Danielle Love

Subject/Grade Level: Geometry

PART I: LESSON PREVIEW
Unit: Quadrilaterals

Lesson duration: One ninety-minute block

Summary/description of lesson: Trapezoids, Isosceles Trapezoids, and Kites

PART II: LESSON BACKGROUND
Primary Objectives:

- Virginia Geometry SOL G.9 The student will verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems.

Secondary Objectives:

- To verify and use properties of trapezoids, isosceles trapezoids, and kites.

Pre-Assessment(s): Students will fill in a Thinking Map of their prior knowledge of each quadrilateral's characteristics. Pre-Assessment will be given on the first day of the unit.

Formative assessments:

- Double-Bubble Thinking Map- Students will fill in a Double-Bubble Thinking Map to compare and contrast the Trapezoid and the Isosceles Trapezoid. Characteristics for each will be displayed, demonstrating the students' knowledge.

Summative assessment:

- Homework: Textbook questions used to apply the characteristics of trapezoids, isosceles trapezoids, and kites to figures and real-world situations.

PART II: LEARNING TARGETS (ALL STUDENTS)

Know	Understand	Be Able to Do
• **Properties of quadrilaterals (parallelogram, rectangle, rhombus, square, isosceles trapezoid, trapezoid, kite).**	• **Quadrilaterals have a hierarchical nature based on relationships between sides, angles, and diagonals.** • **Properties of quadrilaterals can be used to identify the quadrilateral and find the measures of sides and angles.**	• **Solve problems using properties specific to parallelograms, rectangles, rhombi, squares, isosceles trapezoids, and trapezoids.** • **Prove quadrilaterals have specific properties using deductive reasoning, algebraic, and coordinate methods (distance, midpoint and slope formulas).**

PART III: LEARNING TIERS

Identification of tiers based on pre-assessment data (describe what you will do to help students master content objectives for each tier)		
Tier 1 (Enhanced)	**Tier 2 (Target)**	**Tier 3 (Prerequisite)**

PART IV: INSTRUCTIONAL AND ENGAGEMENT STRATEGIES

Instructional Strategies (Check All That Apply)	Qualities of Engaging Work (Check All That Apply)
☐ **Identify similarities and differences** **Describe Activity:** ***At the end of the lesson, students will fill in a Double Bubble Thinking Map to compare/contrast the trapezoid and isosceles trapezoid.*** ☐ **Summarizing and note-taking** **Describe Activity:** ***The Smartboard lesson with a completed list of properties is presented for filling in missing notes and review thinking maps.*** ☐ **Reinforcing effort and providing recognition** **Describe Activity:** ***Students will fill in the Double-Bubble Thinking Map using the characteristics learned in the Smartboard lesson in a way of comparing/contrasting quadrilaterals. Nonetheless, this will be reinforcement of the properties.*** ☐ **Homework and practice** **Describe Activity:** ***Students will be assigned problems from the textbook that will allow them to practice applying properties to various figures, as well as to real-world experiences.*** ☐ **Nonlinguistic representations** **Describe Activity:** ***Students will be illustrating the properties of each quadrilateral in their respective pictures.*** ☐ **Cooperative learning** **Describe Activity:** ***After using their notes to fill in the Double-Bubble Thinking Map, students will turn to their shoulder partner and discuss their maps, correcting***	☐ **Personal response** **Describe Activity:** ***The free-response questions/authentic learning activities throughout the unit will provide students an opportunity to incorporate their background knowledge to responses.*** ☐ **Clear/modeled expectations** **Describe Activity:** ***Throughout the lesson, examples of the problems will used to model the process for applying properties to figures and solving for missing variables.*** ☐ **Emotional/intellectual safety** **Describe Activity:** ***Students will have the opportunity to ask questions and work with their shoulder partner, building their confidence in their answers.*** ☐ **Learning with others** **Describe Activity:** ***Students will have the opportunity to ask questions and work with their shoulder partner.*** ☐ **Sense of audience** **Describe Activity:** ☐ **Choice** **Describe Activity:** ☐ **Novelty and variety** **Describe Activity:** ☐ **Authenticity** **Describe Activity:** ***The free-response questions due at***

mistakes while discussing. ☐ **Setting objectives and providing feedback** **Describe Activity:** ☐ **Generating and testing hypotheses** **Describe Activity:** ☐ **Cues, questions, and advance organizers** **Describe Activity:** ***Students will use a foldable to compile properties of all quadrilaterals. Each fold will have a Bubble Thinking Map to describe the properties. Also, students will fill in Double-Bubble Thinking Map to compare trapezoids and isosceles trapezoids.***	***the end of the unit provide students with a real-world and authentic learning experience.***

PART V: PROCEDURES

	Teacher Actions	Student Actions	Materials/Resources (including technology)	Time
Warm up/Activating Prior Knowledge/Emotional Hook	**Show the students real-world, hands-on examples of a trapezoid, isosceles trapezoid, or kite.**	**Students use the real-world, hands-on examples to devise and record properties of trapezoids, isosceles trapezoids, and kites.**	• **Real-world, hands-on examples (kite, cardboard packaging, etc)*** • **Foldable Notes*** ***See attachments in unit plan binder**	
Teacher Input	• **Smartboard presentation of complete list of properties for trapezoids, isosceles trapezoids, and kites.** • **Teacher guides students through completion of examples of applying properties to problems.**	• **Students fill missing properties into their foldable.** • **Students come to board to identify properties in the picture example.** • **Students copy and complete examples of applying properties to problems.**	• **Foldable notes*** • **Notebooks** ***see attachments in unit plan binder**	
Guided Student Practice	• **Assign "6-6 Practice" worksheet.** • **Walk around room to help students.**	• **Students work on "6-6 Practice" worksheet.** • **Students ask questions.**	**"6-6 Practice" worksheet*** ***see attachments in unit plan binder**	
Independent Student Practice	**Assign Homework: Textbook Pg 394 #8-24 even, 25-27 all, 28-44 even, 47-52 all, 57-62 all**	**Complete Homework: Textbook Pg 394 #8-24 even, 25-27 all, 28-44 even, 47-52 all, 57-62 all**	**Textbook**	
Lesson Synthesis	**Walk around the room to**	• **Students fill in a Double**	• **Double Bubble**	

through Review (with opportunity to Analyze, Evaluate, and Create)	guide students through filling in the Double Bubble Thinking Map to compare and contrast properties of a trapezoid and isosceles trapezoid.	Bubble Thinking Map to compare and contrast properties of a rectangle and a rhombus. • Free-response questions due at the end of the unit • Accelerated Math quadrilateral objectives	Thinking Map* • Free-response question packet* • Accelerated Math quadrilateral objective packet* *see attachments in unit plan binder	

PART VI: PRE-PLANNED GUIDING QUESTIONS

Bloom's Level	Question Exemplars (Specific to Unit)	Acceptable Student Responses (Must Match Level of Questioning)
Knowledge	Identify the properties of trapezoids, isosceles trapezoids, and kites.	Trapezoids: Only one pair of parallel sides, angles along a leg are supplementary, midsegment length is half of the sum of the bases Isosceles Trapezoids: legs are congruent, base angles along the same base are congruent, diagonals are congruent Kites: Two pairs of consecutive sides congruent, no opposite sides congruent, diagonals are perpendicular
Comprehension	Illustrate the properties of trapezoids, isosceles trapezoids, and kites in a picture.	The picture must be accurately represented with the properties listed above appropriately labeled.
Application	Find the measure of the missing angles of the isosceles trapezoid.	Students apply the properties to give correct values for missing angles.
Analysis	The beams of the bridge form a quadrilateral. Given specific information, classify the quadrilateral and explain.	Isosceles Trapezoid with explanation using given information (not acceptable- 'because it looks like one")
Synthesis	Use the Double Bubble Thinking Map to compare and contrast the properties of trapezoids and isosceles trapezoids.	Similarities: only one pair of parallel sides, consecutive angles along a leg are supplementary, midsegment length is half of the sum of the bases Differences: isosceles trapezoids have congruent legs, isosceles trapezoids have congruent base angles along each base
Evaluation	If KLMN is an isosceles trapezoid, is it possible for segment KM to bisect <LMN and <LKN? Explain	No with explanation using properties of an isosceles trapezoid.

PART VII: TEACHER SELF-EVALUATION AND REFLECTION ON LESSON PLANNING AND DELIVERY

Strengths of Lesson	Opportunities for Growth
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