Updated August 2024

Marking Period	Unit Title	Recommended Instructional Days
3	Quadrilaterals and Other Polygons	15-20

Domain: Geometry

NJSLS Strand:

Key:

Major Cluster
Supporting Cluster
Additional Cluster

G.CO.C.11: Prove theorems about parallelograms. Theorems include: Opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other and conversely, rectangles are parallelograms with congruent diagonals.

G.C.A.3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.

G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

Progress Indicator:
Tests ● Quizzes ● Practice problems for homework ● Online textbook ● Worksheets ● Leveled assessments

Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-CLKS within Unit

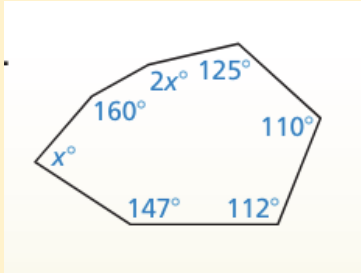
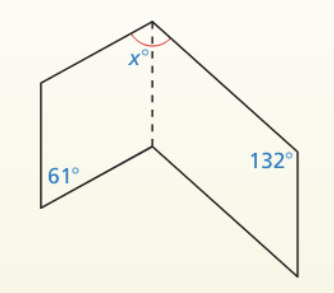
Essential Questions:

1. **How does the number of sides in convex polygons relate to the sums of the measures of the exterior and interior angles?**
2. **How are the diagonals and angle measures related in kites and trapezoids?**
3. **What are the relationships of the sides, the angles, and the diagonals of a parallelogram?**
4. **Which properties determine whether a quadrilateral is a parallelogram?**
5. **What properties of rhombuses, rectangles, and squares differentiate them from other parallelograms?**

Activity Description:

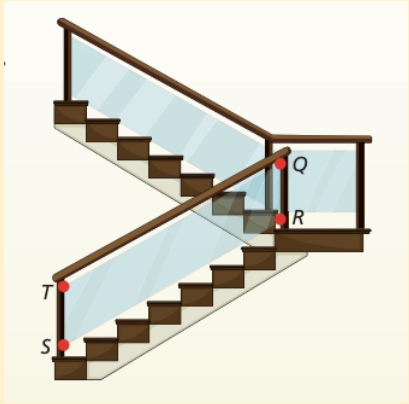
- **Angles of Polygons**
- **Properties of Parallelogram**
- **Proving that a Quadrilateral is a Parallelogram**
- **Properties of Special Parallelograms**
- **Properties of Trapezoids and Kites**

Interdisciplinary Connections:
Topic 6 Project
Design a Quadrilateral Lift
A 50,000-pound bus needs to be lifted 6 feet off the ground for engine repairs. You and your classmates will analyze quadrilaterals and design a hydraulic lift for a mechanic to use for those repairs.

		Career Readiness, Life Literacies and Key Skills **Content: Engineering; Design. NJSLS#: G.CO.A.2, G.MG.A.1, G.MG.A.3, G.SRT.B.5) (Next Generation Science Standards ETS1-2)** **Spot Light On:** **LBGT and Disabilities Law: N.J.S.A 18A:34-4.35** ● Jason Collins-First openly gay NBA player. **<u>Example Tasks:</u>** **Task 1:** Find the value of x.  **Task 2:** The figure shown is composed of two parallelograms. Find x. 

Task 3:
In the diagram of the staircase shown, QT — RS —, QT = RS = 9 feet, QR = 3 feet, and m∠QRS = 123°.

a. Which theorem can you use to show that QRST is a parallelogram?
b. Find ST, m∠QTS, m∠TQR, and m∠TSR. Explain your reasoning.



Mathematics Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reason of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Social and Emotional Learning: ***Competencies***	**Social and Emotional Learning:** ***Sub-Competencies***

Self- awareness Social Awareness Self- Management Relationship Skills Responsible Decision-Making	Recognizing the importance of self-confidence in handling daily tasks and challenges. Demonstrate an awareness of the expectations for social interactions in a variety of ways. Demonstrate an understanding of the need for mutual respect when viewpoints differ. Recognize the skills needed to establish and achieve personal and educational goals. Utilize positive communication and social skills to interact effectively with others. Develop, implement, and model effective problem solving and critical thinking skills.	

Assessments (Formative) ***To show evidence of meeting the standard/s, students will successfully engage within:***	**Assessments (Summative)** ***To show evidence of meeting the standard/s, students will successfully complete:***
<u>Formative Assessments:</u> ● Entry and Exit Slips ● Quizzes ● Self Assessments	**<u>Benchmarks:</u>** ● Chapter Tests ● Projects ● LinkIT **<u>Summative Assessments:</u>** ● District Assessments ● Midterms ● Standardized Tests

Differentiated Student Access to Content:
Teaching and Learning *Resources/Materials*

Core Resources	**Alternate Core Resources** ***IEP/504/At-Risk/ESL***	**ELL Core Resources**	**Gifted & Talented Core Resources**

• Textbooks websites • Achieve the core • Khan Academy • Desmos • GeoGebra	• Skill building worksheets • Math Manipulatives	• Dictionary for native languages • Videos in their native language.	• Leveled Assessments • Enrichment worksheets

Supplemental Resources

Technology:
- **Chromebooks, Graphing Calculators, Online math manipulatives**

Other:
- **Zoom and Google Meets, Schoology, Interactive Textbooks, Private Tutoring**

Differentiated Student Access to Content:
Recommended *Strategies & Techniques*

Core Resources	**Alternate Core Resources** ***IEP/504/At-Risk/ESL***	**ELL Core Resources**	**Gifted & Talented Core**
• **Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic, provide individual instruction as needed, modify assessments and/or rubrics, repeat**	• **Utilize a multi-sensory (VAKT) approach during instruction, provide alternate presentations of skills by varying the method (repetition, simple explanations, additional examples, modeling, etc.), modify test content and/or format, allow students to retake test for additional credit, provide additional times and preferential seating as needed, review, restate and repeat directions, provide study guides, and/or break assignments into segments of shorter tasks.**	• **Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental materials including use of an online bilingual dictionary, and modified assessment and/or rubric.**	• **Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose interest-based extension activities, and connect student to related**

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	**Disciplinary Concept: Creativity and Innovation**	
	Core Ideas:	**With a growth mindset, failure is an important part of success**
	Performance Expectation/s:	**9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).**
	Career Readiness, Life Literacies, & Key Skills Practices	
	Act as a responsible and contributing community member and employee. **Attend to financial well-being.** **Consider the environmental, social and economic impacts of decisions.** **Demonstrate creativity and innovation.** **Utilize critical thinking to make sense of problems and persevere in solving them.** **Model integrity, ethical leadership and effective management.** **Plan education and career paths aligned to personal goals.** **Use technology to enhance productivity, increase collaboration and communicate effectively.** **Work productively in teams while using cultural/global competence.**	

New Jersey Legislative Statutes and Administrative Code (place an "X" before each law/statute if/when present within the curriculum map)									
	Amistad Law: *N.J.S.A. 18A 52:16A-88*		Holocaust Law: *N.J.S.A. 18A:35-28*	**X**	LGBT and Disabilities Law: *N.J.S.A. 18A:35-4.35*		Diversity & Inclusion: *N.J.S.A. 18A:35-4.36a*		Standards in Action: *Climate Change*