Updated August 2024

Marking Period	Unit Title	Recommended Instructional Days
1	Reasoning and Proofs	14-16 Days

Domain: Geometry

NJSLS Strand:

Key:

Major Cluster

Supporting Cluster

Additional Cluster

G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

G.CO.C.9: Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

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. **What is a double negative? What is an example of a double negative?**
2. **What are equivalent equations?**
3. **What does it mean to "deduce" something? "Induce"? Is it possible to identify a pattern from two figures? explain?**
4. **What is the definition of a congruent segment?**
5. **Is the converse of the vertical angles congruence theorem true? explain?**

Activity Description:

- **Conditional Statements**
- **Inductive and deductive reasoning**
- **Postulates and diagrams**
- **Algebraic Reasoning**
- **Proving statements about segments and angles**
- **Proving geometric relationships**

Interdisciplinary Connections:

TOPIC 1 PROJECT

Career Readiness, life Literacies and Key Skills **Content: Technology; Design a tablet**

The tablet market is growing quickly. Each quarter, more than 38 million tablets are shipped around the world. By 2019, yearly shipping is expected to surpass 189 million. In this project, you'll design a new tablet using the golden ratio.

NJSLS#:G.CO.A.1, G.CO.D.8, G.CO.D.12, A.RE.B.4

(Next Generation Science Standards: HS-ETS1-1, HS-ETS1-2)

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G.CO.C.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180 degrees; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

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.CO.D.12: Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

Spot Light On:
LBGT and Disabilities Law: N.J.S.A 18A:34-4.35

- Sally Ride: First American woman in space.

Example Tasks:

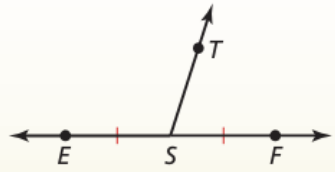
Task 1:

Decide whether the statement about the diagram is true. Explain your answer using the definitions you have learned.

S is the midpoint of $\overline{EF}$.

$\overline{ES} \cong \overline{ST}$

$\overrightarrow{ST}$ is a segment bisector of $\overline{EF}$.



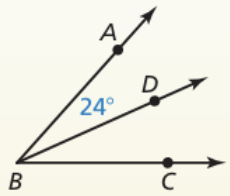
Task 2:
The dew point is the warmest temperature at which the relative humidity reaches 100 percent. On a given night, the relative humidity reaches 100 percent at the moment the temperature drops to 72°. So, the dew point is 72°.

Task 3:

Write a paragraph proof.

Given $m\angle ABC = 48°, m\angle ABD = 24°$

Prove $\overrightarrow{BD}$ bisects $\angle ABC$.



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G.GPE.B.6 (+): Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

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.

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	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:*
Formative Assessments: ● Entry and Exit Slips ● Quizzes ● Self Assessments	**Benchmarks:** ● Chapter Tests ● Projects ● LinkIT **Summative Assessments:** ● 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
● Big Ideas ● 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

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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

	Disciplinary Concept: Creativity and Innovation

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	***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*