Marking Period	Unit Title	Recommended Instructional Days
4	Relationships in Geometry	26 - 30

Domain

Strand:

6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

6.NS.C.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.A.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

6.G.A.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

6.G.A.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Key:

■ **Major Cluster**   □ **Supporting Cluster**   ◎ **Additional Cluster**

Progress Indicator: ◊ Tests ◊ Homework / Classwork ◊ Projects ◊ Formative assessments ◊ Summative assessments

Mathematical 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.

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

Essential Questions:
Module 13:
Why do different shapes have different formulas to describe the area?
How can you find the areas of parallelograms, rhombuses, and trapezoids?
How do you find the area of a triangle?
How do you use equations to solve problems about areas of rectangles, parallelograms, trapezoids, and triangles?
How can you find the area of a polygon by breaking it into simpler shapes?

Module 14:
How can you use absolute value to find the distance between two points with the same x- or y-coordinates?
How can you solve problems by drawing polygons in the coordinate plane?

Module 15:
How are a net and a 3D figure related?
How can you use nets to find surface areas?

How can the surface area of an object be useful in real life?
How do you find the volume of a rectangular prism?
How do you write equations to solve problems involving volume of right rectangular prisms?

Essential Understandings:
Module 13:
A figure can be decomposed into other polygons.
The area of a 2D figure describes the covering of the shape.

Module 14:
The coordinate plane is used to measure distance and location of points.

Module 15:
The volume of a rectangular prism is the amount of space the object occupies.

Vocabulary:
- rhombus
- polygon
- vertex
- net
- prism
- pyramid
- surface area
- bases

Encourage students to practice using the unit vocabulary as they talk and write about mathematics. Understanding vocabulary will aid their understanding of the concepts.

Suggested Activity Descriptions:
- Consider giving students a specific number of Cheez-Its®, and then ask them the various dimensions that can be created with that area.
- To introduce nets and surface area, collect various boxes with different size bases. Cut the edges and any excess that would not be a part of the net. Help students to see the various parts of the 3D object and how the net comes together. As an exploratory option, ask students to use their ruler to measure the different dimensions and find the surface area.
- Search the PBS Learning website for Volume of Prisms to find a few short videos to share.
- Project a map on top of a coordinate plane and have students find the distance between two places.
- Let students work with partners to plot given coordinates on a coordinate graph. Once a polygon is formed, students answer question prompts on area and other measurements of the figures.
- GoMATH Activity 13.3 What is the Area? on GoMATH page 388A.

- GoMATH Game 14.2 You Found My Polygon! on GoMATH page 412A.
- GoMATH Unit 6 Review Project: Which State Is It?

◇Suggested Sample Tasks:

1. The area of a parallelogram is 132 inches^2. What is the height of the parallelogram if the base measures 11 inches ?

2. Turn and talk with a partner. Discuss how to decompose a parallelogram to help understand the formula for the area of a triangle.

3. If you cut a rectangle in half to make two identical triangles, discuss the types of triangles that are made.

4. Turn and talk with a partner about why absolute value is needed to find the distance on a coordinate plane. Prove your thinking.

Interdisciplinary Connections:
Science:
1. Performance Task: Careers in Math: Theater Set Construction on GoMATH page 440.

Social Studies:
1. Performance Task: Careers in Math: Theater Set Construction on GoMATH page 440.

Language Arts:
1. Vocabulary Preview Activity on GoMATH page 366.
2. Reading Start-Up Activities on GoMATH pages 368, 398, and 416.

Spot Light On: Katherine Johnson

Social and Emotional Learning: *Competencies*	Social and Emotional Learning: *Sub-Competencies*
SEL 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. • Identify and apply ways to persevere through alternative methods to achieve 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: • Teacher Observations • Exit Tickets • Quizzes • Self Assessments • Math Journals • Homework/Classwork • Teacher created assessments	**Benchmarks & Summative Assessments:** • Chapter/Unit Assessments • Standardized Tests • District Assessments • Project-based Assessments

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**
Go Math Workbook, IXL, Personal Math Trainer, Math on the Spot Videos, My HRW, Khan Academy, Illustrative Mathematics, Learn360, TeacherTube, BrainPOP, Freckle, LearnZillion, MobyMax, 60 minutes of weekly ST Math, Edulastic, Achieve the Core, Desmos	Reteaching worksheets, Skill building workbook, Math manipulatives, Leveled practice worksheets	Dictionary for native language, Video tutorial in native language, Success for English Learners worksheets, GoMATH Leveled Strategies for English Learners, GoMATH Linguistic Support	ST Math Challenge Objectives, G&T tasks, Enrichment worksheets, Art of Problem Solving, Leveled assessments, GoMATH Teaching for Depth

Supplemental Resources
Technology: • Chromebooks • Scientific/Graphing Calculators (upper grades only) • Online math manipulatives **Other:** • Google Classroom, Google Meets, Schoology, Interactive Workbooks • Illustrative Mathematics • insidemathematics.org • National Library of Virtual Manipulatives

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.	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 content.

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	**Disciplinary Concept(s):** Creativity and Innovation	
	Core Ideas:	Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking
	Performance Expectation/s:	9.4.8.CI.4: Explore the role of creativity and innovation in career pathways and industries.
	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)									
X	Amistad Law: *N.J.S.A. 18A 52:16A-88*		Holocaust Law: *N.J.S.A. 18A:35-28*		LGBT and Disabilities Law: *N.J.S.A. 18A:35-4.35*	X	Diversity & Inclusion: *N.J.S.A. 18A:35-4.36a*		Standards in Action: *Climate Change*