

Updated:
November 2021

Marking Period	Unit Title	Recommended Instructional Days
1	Modeling with Linear Equations and Inequalities	8-18
Domain: NJSLS Strand: Standards (Taught and Assessed): A.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. N.Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; Choose and interpret units consistently in formulas; Choose and interpret the scale and the origin in graphs and data displays A.REI.D.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often		Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-CLKS within Unit Essential Question/s: 1. What is the difference between simplifying and solving? 2. How do you write a compound inequality as two simple inequalities? 3. What is the difference between intersection and union? 4. How do you know whether a graph represents a compound inequality that involves And or Or? Activity Description: • Graphing and writing inequalities. • Solving inequalities by adding or subtracting. • Solving inequalities by multiplying or dividing. • Solving two-step and mutli-step inequalities • Solving inequalities with variables of both sides. • Solving compound inequalities. • Solving absolute-value inequalities. • Example tasks below. Task 1: 1 Sam earned \$450 during winter vacation. He needs to save \$1 . camping trip over spring break. He can spend the remainder o on music. Write an inequality to show how much he can spend Then, graph the inequality.
Progress Indicator: Tests • Quizzes • Practice problems for homework • Workbook pages • Worksheets • Focus Packet • Leveled assessments		

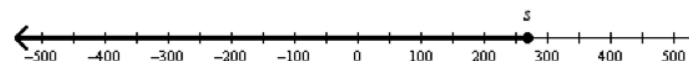
forming a curve (which could be a line).

A.CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.

A.REI.D.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

Answer:

ANS:
 $180 + s \leq 450; s \leq 270$



Task 2:

Solve the compound inequality and graph the solutions.

$$-a + 8 < -2 \text{ OR } -3a > -9$$

Answer:

ANS:
 $a < 3 \text{ OR } a > 10$



Task 3:

Solve the compound inequality.

$$6 \leq x - 2 < 14$$

Answers:

ANS:
 $8 \leq x < 16$

Task 4:

Solve the inequality.

$$-3(x-1) > -3x-2$$

Answer:

All Real Numbers

**Interdisciplinary Connections: Social Studies Domain;
Geography, People, and the Environment**

Content:

Planning a trip on a budget - \$200

- Students choose a place they would realistically like to visit.
- Students research the location to complete a spread sheet including
 - o travel expenses (plane, train, rental car, gas)
 - o lodging expenses
 - o food expenses (breakfast, lunch, dinner, snack)
 - o include at least 1 activity

- Complete the inequality: travel + lodging + food + activity(s) > or = \$200
- Based on research and the inequality, students assign an amount of money for each event category.
- Students will write a word equations under each event category showing how the money will be dispersed (miles / miles per gallon = # of gallons x cost per gallon less than or equal to _____ dollars.
- Add numeric values to word inequalities in order to solve to make sure you come in under budget.
- Discussion questions
 - What were some problems you came across when doing this activity?
 - How did you solve them?
 - What was helpful throughout this activity.
 - What would have been more helpful?
- Extension questions
 - What would you do differently if you had \$400? or What would your ideal budget be?
 - How was this activity helpful? Can you think of other times you might need to create a budget?

Spotlight on:

Use random response strategies.

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) <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>		Assessments (Summative) <i>To show evidence of meeting the standard/s, students will successfully complete:</i>	
Formative Assessments: ● Entry and Exit Slips ● Quizzes ● Self Assessments		Benchmarks: ● Chapter Tests ● Projects Summative Assessments: ● District Assessments ● Midterms ● Standardized Tests	
Differentiated Student Access to Content: Teaching and Learning Resources/Materials			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources
● Textbooks websites ● Achieve the core ● Khan Academy ● Desmos	● 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, Google Classroom, Interactive Textbooks			
Differentiated Student Access to Content: Recommended Strategies & Techniques			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	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
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NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	Disciplinary Concept: Critical Thinking and Problem-solving	
	Core Ideas:	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.
	Performance Expectation/s:	• 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). • 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12prof.CR3.a). • 9.4.12.CT.3: Enlist input from a variety of stakeholders (e.g., community members, experts in the field) to design a service learning activity that addresses a local or global issue (e.g., environmental justice). • 9.4.12.CT.4: Participate in online strategy and planning sessions for course-based, school-based, or other projects and determine the strategies that contribute to effective outcomes.

	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: <i>N.J.S.A. 18A 52:16A-88</i>		Holocaust Law: <i>N.J.S.A. 18A:35-28</i>		LGBT and Disabilities Law: <i>N.J.S.A. 18A:35-4.35</i>	X	Diversity & Inclusion: <i>N.J.S.A. 18A:35-4.36a</i>		Standards in Action: <i>Climate Change</i>