Updated August 2024

Marking Period	Unit Title	Recommended Instructional Days
1	Solving Linear Equations	8 - 18 days

Domain: Number and Quantity, Algebra,

NJSLS Strand:
Standards (Taught and Assessed):

Key:

Major Cluster
Supporting Cluster
Additional Cluster

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.

N.Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

Progress Indicator:
Tests ● Quizzes ● Practice problems for homework ● Workbook pages ● Worksheets ● Focus Packet ● Leveled assessments

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

Essential Question/s:

1. **What is the difference between a variable and a constant?**
2. **How are the addition and subtraction properties of equality used to solve equations?**
3. **What steps need to be taken to isolate the variable? Why?**
4. **What is the difference between solving an equation that has all real numbers as solutions and solving an equation that has no solution?**

Activity Description:

- **Solving simple equations**
- **Solving multi-step equations**
- **Modeling equations**
- **Accuracy with measurements**
- **Solving equations with variables on both sides**
- **Rewriting equations and formulas**

Interdisciplinary Connections: Career Readiness, life Literacies and Key Skills **Content:** Money Management **;NJSLS#: 9.4.12.PB.2**

Arabica coffee cost $28 per pound and Robusta coffee cost $8.75 per pound. How many pounds of Arabica coffee must you mix with 3 pounds of Robusta coffee to make a blend that costs $15.50 per pound?

Answer:

N.Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. **A.CED.A.1** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. **A.REI.B.3** Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. **A.REI.A.1** Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.		Write an equation to represent the situation $28a + 26.25 = 15.5(a + 3)$ $a = 1.62$ You must mix 1.62 pounds of Arabica coffee with 3 pounds of Robusta coffee to make a blend that cost $15.50 **Spot Light on:** LGBT and Disabilities Law: N.J.S.A 18A:34-4.35 • Sally Ride: First American woman in space. Climate Change Examples: • Students may define appropriate quantities for a descriptive model of how variations in the flow of energy into and out of Earth's systems result in climate change. Note: changes in climate are limited to changes in surface temperatures, precipitation patterns, glacial ice volumes, sea levels, and biosphere distribution. • Students may create equations and/or inequalities to represent the economic impact of climate change. • Students may use units to guide the solution of multi-step problems about how variations in the flow of energy into and out of the Earth's systems result in climate change. Note: Changes in climate are limited to changes in surface temperatures, precipitation patterns, glacial ice volumes, sea levels, and biosphere distribution.

A.CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law V = IR to highlight resistance R.*		• Students may rearrange formulas related to the economic impact of climate change to highlight a quantity of interest, using the same reasoning as in solving equations. • Students may use units to guide the solution of multi-step problems about how variations in the flow of energy into and out of the Earth's systems result in climate change. Note: Changes in climate are limited to changes in surface temperatures, precipitation patterns, glacial ice volumes, sea levels, and biosphere distribution. • Students may, when reporting quantities related to how variations in the flow of energy into and out of the Earth's systems result in climate change, choose a level of accuracy appropriate to limitations on how quantities were measured. **Example tasks below** **Task 1:** You have $175.29 in a savings account. You deposit an additional $48.75. How much more do you need to save to buy the cell phone?  **Task 2:** An airplane leaves Los Angeles and travels 5 hours to New York City. The return trip travels along the same route and takes 6 hours and 15 minutes

		because the plane travels 99 miles per hour slower due to a headwind. Find the distance that the plane flies between the two cities. **Task 3** . The formula $F = \frac{9}{5}(K - 273.15) + 32$ converts a temperature from kelvin K to degrees Fahrenheit F. **a.** Solve the formula for K. **b.** Convert 180°F to kelvin. Round your answer to the nearest hundredth.
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:***
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**	**ELL Core Resources**	**Gifted & Talented Core Resources**

	IEP/504/At-Risk/ESL		
• Big Ideas • 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, Schoology, Interactive Textbooks**

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*	X	Standards in Action: *Climate Change*