Trimester:	Unit Title:	Recommended Instructional Days:
1	**Equations**	**13 - 18 days**

Domain

Strand:

8.EE.C.7 Solve linear equations in one variable.

(a) Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers)

(b) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Key:

Major Cluster **Supporting Cluster** **Additional Cluster** **Climate Change Opportunity**

Progress Indicators: ◊ 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:
How can we use equations to model and solve real-life problems?
How do you solve equations that contain like terms?
How do we use inverse operations to solve multi-step equations?
How can you use the distributive property to solve multi-step equations?
Will a one-variable equation always have only one solution?

Essential Understandings:
Two equations that have the same solution are equivalent equations.
Combining like terms that are on one side of an equation makes it easier to solve for the variable by using inverse operations.
Whatever you do on one side of the equations, you must do on the other side of the equation.
To solve a linear equation that has variable terms on both sides of the equation, first use inverse operations to move all variable terms to one side of the equation and constant terms to the other. Then, isolate the variable.
The distributive property is an important tool for simplifying expressions and combining like terms.
Equations with one variable can have zero, one, or infinitely many solutions.

Vocabulary:
- literal equation

**Encourage students to practice using the unit vocabulary as they talk and write about mathematics. Understanding vocabulary will aid their understanding of the concepts. When students encounter a new definition, encourage them to write in their Big Ideas Student Journals. They will revisit these definitions during the Chapter Review.*

Suggested Activity Descriptions:
- Chapter Exploration TB page 3 Using Properties of Equality
- Chapter ExplorationTB page 11 Finding Angle Measures
- Chapter Exploration TB page 17 Finding Missing Measures in Figures
- Chapter Exploration TB page 25 Rewriting Formulas
- Puzzle Time for each section (teacher resources)
- Enrichment and Extension Worksheets
- Big Ideas Math Game Closet Tic - Tac - Toe
- Chapter 1 Performance Task: Target Heart Rates
- ***Climate Change:*** Students may solve real-world problems involving creating and solving equations comparing ocean temperature changes over the decades.

Interdisciplinary Connections:
Science:

1. Example # 4 TB page 7: *Modeling Real Life*: The temperature in a crater on Mars is 0^oC at 1pm. The temperature decreases 8^oC every hour. When will the temperature be $-\ 50^oC$?
2. Question # 34 TB page 9: *Modeling Real Life:* A rocket is scheduled to launch from a command center in 3.75 hours. What time is it now?
3. Question # 36 TB page 9: *Modeling Real Life:* Algae cleanup
4. Example # 6 TB page 21: *Modeling Real Life:* A boat travels x miles per hour upstream on the Mississippi River…..
5. Example # 3 TB page 27 Rewriting the temperature formula
6. Example # 4 TB page 28 *Modeling Real Life:* Which has the greater temperature?
7. Question # 26 TB 30 *Modeling Real life:* The formula K = C + 273.15 converts temperatures from degrees Celsius to Kelvin K….

Physical Education:

1. STEAM video and corresponding questions TB page 1 (Training for a half marathon)
2. Question #20 TB page 7 *Dig Deeper*: Fitness tracker.
3. Question # 21 TB page 8 *Problem Solving*: A game of bowling.
4. Example # 4 TB page 14 *Modeling Real Life:* Find the number of x miles you need to run on Friday so that the mean number of miles run per day is 1.5.
5. Question # 30 TB page 16 *Dig Deeper*: Divers in a competition
6. Question # 19 TB page 20 *Dig Deeper:* You and your friend rave on a trail that is 10 miles long…

Language Arts:

1. Writing Questions # 10 and # 11 TB page 6. Are the equations equivalent? Explain.
2. Writing Question # 14 TB page 13. Write the sentence as an equation, then solve.
3. Open-ended Question # 10 TB page 20. Write an equation with variables on both sides that has a single solution of -1. Explain how to solve your equation.
4. Open-ended Question # 35 TB page 23. Write an equation with variables on both sides that has no solution. Explain why it has no solution.
5. Writing Question # 43 TB page 24. Would you solve the equation $0.25x\ +\ 7\ =\ 1/3x\ -\ 8$ using fractions or decimals? Explain.

Spot Light On: Alan Turing

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 • Big Ideas Student Journals • Homework/Classwork • Teacher Created Assessments • Progress Monitoring Items • Formative Assessment Tips in Big Ideas Teacher Edition	**Benchmarks & Summative Assessments:** • Chapter/Unit Assessments • Standardized Tests • Project-based Assessments • Benchmark 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 Student Journal, Dynamic Assessment System, iReady, Khan Academy, Illustrative Mathematics, Learn360, TeacherTube, BrainPOP, Freckle, LearnZillion, MobyMax, 60 minutes of weekly ST Math, Edulastic, Achieve the Core,	Reteach worksheets, Extra Practice worksheets, Math manipulatives, Scaffolding Instructions in each section of textbook, Tutorial Videos, Skills Review Handbook, Skills Trainer	Dictionary for native language, Video tutorial in native language, ELL Support in each section of Big Ideas Teacher's Edition	ST Math Challenge Objectives, G&T tasks, Enrichment and Extension worksheets, Art of Problem Solving, Leveled assessments

Desmos			
Supplemental Resources			
Technology: • Chromebooks • Scientific Calculators • 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 students to related content.

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	**Disciplinary Concept(s):** Planning and Budgeting	
	Core Ideas:	A budget aligned with an individual's financial goals can help prepare for life events.
	Performance Expectation/s:	9.1.8.PB.1: Predict future expenses or opportunities that should be included in the budget planning process.
	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*	**X**	Diversity & Inclusion: *N.J.S.A. 18A:35-4.36a*	**X**	Standards in Action: *Climate Change*