Marking Period	Unit Title	Recommended Instructional Days
2	**Expressions, Equations, and Inequalities**	**24 - 28**

Domain

Strand:

7.EE.A.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

7.EE.A.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*

7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*

7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers.Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make and describe the solutions.*

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 6:

How can you use algebraic expressions and equations to solve real-world problems?
What process can you use to simplify an expression?
Why do we differentiate between simplifying and evaluating an expression?
How do you add, subtract, factor, and multiply algebraic expressions?
How do you use one-step equations with rational coefficients to solve problems?
How do you write a two-step equation?
How do you solve a two-step equation?
Why do properties of operations exist?
How can a real-world situation be expressed mathematically?

Module 7:

How can you use inequalities to solve real-world problems?
How do you write and solve one-step inequalities?
How does a graph on a number line best describe the solution to an inequality?
What patterns do you notice about solving inequalities with negative numbers?
How do you write a two-step inequality?
How do you solve a two-step inequality?

Essential Understandings:

Module 6:

Mathematical and real-world situations can be modeled and solved with equations.

Expressions are mathematical statements.
An expression can include letters that represent a number.
Expressions are used in real life to represent a process.

Module 7:
An inequality represents two mathematical statements, which are not equal.
An inequality has infinitely many solutions.

Vocabulary:
- factor

**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:
- Write several different types of terms on the board. Ask two students to come up to the board with a fly swatter. When you call out a term, the first student to "swat" a like term wins the point for the team. Continue with other students.
- Help students to see that they are already familiar with the distributive property by connecting it to 4(5+2). Then, show students how the same process applies even with a variable.
- Students tend to struggle when distributing a negative number, especially a negative one. It might help struggling students to highlight the value that is being distributed before they begin solving the problem.
- Start one-step equations by displaying a very long and complex equation on the board. Explain that today you are setting the foundation for these types of equations. Then, require students to show their steps as they solve.
- For two-step equations, give students individual white boards and have them work in teams of three. With one equation written on the board, the first person will solve step one. The second person will complete the second step in solving and the third will check the equation. Have groups hold up their boards when they are finished.
- GoMATH Activity 6.4 Equality Property Sort (GoMATH TB page 196C-196D)
- GoMATH Activity 7.1 A Shared Solution (GoMATH TB page 210A-210B)
- GoMATH Activity 7.3 Inequalitrio (GoMATH TB page 222A-222B)
- GoMATH Unit 3 Review Project: The Rhind Papyrus

◊Suggested Sample Tasks:
Interdisciplinary Connections: Personal and Financial Literacy
Content: Planning and Budgeting

TASK 1:
The taxi fare in Gotham City is $2.40 for the first ½ mile and additional mileage charged at the rate $0.20 for each additional 0.1 mile. You plan to give the driver a $2 tip. How many miles can you ride for $10?

KEY:

With $10, we can travel 3.3 miles in the taxi.

TASK 2:
At the beginning of the month, Evan had $24 in his account at the school bookstore. Use a variable to represent the unknown quantity in each transaction below and write an equation to represent it. What is the unknown quantity in each case?

a.) First he bought some notebooks and pens that cost $16.
b.) Then he deposited some more money and his account balance was $28.
c.) Then he bought a book for English class that cost $34.
d.) Then he deposited exactly enough money so that he paid off his debt to the bookstore.

Explain why it makes sense to use a negative number to represent Evan's account balance when he owes money.

KEY:

a.) $24 - 16 = a$; his new account balance is $8.
b.) He has $8 in his account and then he deposited b dollars. His account balance is now $28. Then $8 + b = 28$. He deposited $20 in his account.
c.) He has $28 and spent $34. Let c represent his account balance after he bought the book. Then $28 - 34 = c$. His new account balance is -$6.
d.) He started with an account balance of -$6 and paid the debt off so his account balance is 0. If d is the amount of money he deposited to pay off his debt, then $-6 + d = 0$. He deposited $6.

It makes sense to use a negative number to represent Evan's account balance when he owes money.

Interdisciplinary Connections:
Science:
1. Careers in Math (GoMATH page 167)
2. A scuba diver is exploring at an elevation of −12.2 meters. As the diver rises to the surface, she plans to stop and rest briefly at a reef that has an elevation of −4.55 meters. Find the vertical distance that the diver will travel. (GoMATH page 180)

3. Between the hours of 10 p.m. and 6 a.m., the temperature decreases an average of ¾ of a degree per hour. How many minutes will it take for the temperature to decrease by 5 °F? (GoMATH page 181)

Social Studies:
1. The value of a share of stock decreases in value at a rate of $1.20 per hour during the first 3.5 hours of trading. Write and solve an equation to find the decrease in the value of the share of stock during that time. (GoMATH page 181)
2. GoMATH Unit 3 Project: The Rhind Papyrus

Language Arts:
1. Vocabulary Preview Activity on GoMATH page 168.
2. Reading Startup Activities on GoMATH pages 170 and 200.

Spot Light On: John Urschel

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, Math Olympiad
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	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	Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose interest-based extension activities,

	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.	and/or rubric.	and connect student 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)									
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*