











Trimester:	Unit Title:	Recommended Instructional Days:
1	Multiplying & Dividing Rational Numbers	16 - 20 days
Domain: The Number System		
<p>Strand:</p> <p> 7.NS.A.2 Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.</p> <p>a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p> 7.NS.A.2 Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.</p> <p>b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real world contexts.</p> <p> 7.NS.A.2 Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.</p> <p>c. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p> 7.NS.A.2 Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.</p> <p>d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> <p> 7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers. (Clarification: Computations with rational numbers extend the rules for manipulating fractions to complex fractions.) </p> <p>Key:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="display: flex; align-items: center;">  Major Cluster </div> <div style="display: flex; align-items: center;">  Supporting Cluster </div> <div style="display: flex; align-items: center;">  Additional Cluster </div> <div style="display: flex; align-items: center;">  Climate Change Opportunity </div> </div>		

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 NJSL-CLKS within Unit

Essential Questions:

- Lesson 1:** How do the signs of factors affect their product?
Lesson 2: How does dividing integers relate to multiplying integers?
Lesson 3: How are rational numbers written as decimals?
Lesson 4: How can you multiply rational numbers?
Lesson 5: How can you divide rational numbers?

Essential Understandings:

Rational numbers can be used to solve real-life problems.
Rational numbers expressed as fractions can be written in decimal form.
The sign of a product is determined by the signs of the factors in a multiplication expression.
The same properties used to multiply integers also apply when multiplying rational numbers.
Dividing rational numbers is similar to dividing integers.
The sign of the quotient depends on the signs of the dividend and divisor.
All rational numbers either terminate or repeat.
Rational numbers can be written in three forms.

Vocabulary:

- terminating decimal
- repeating decimal
- complex fraction

**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 problems on TB page 48.
- Exploration Activities at the beginning of each section.
- Use a deck of cards with each card representing an integer (assign red cards as negative numbers and black cards as positive numbers). Students draw two cards at a time, multiply or divide the integers, and the player with the highest product or quotient wins the round. This helps reinforce integer multiplication and division through a fun and competitive game.
- Use a large number line on the classroom floor or an interactive digital number line. Students can physically move along the number line to visualize and solve multiplication and division problems involving integers. This kinesthetic approach helps students understand the concepts more concretely.
- Amazing Decimals from the Big Ideas Game Library.
- Fun with Fractions from the Big Ideas Game Library.
- Pick Your Fractions from the Big Ideas Game Library.

Interdisciplinary Connections:

Science:

1. Big Ideas STEAM Video and corresponding questions on TB page 47.
2. Big Ideas STEAM Performance Task. QR Code on TB page 79.
3. Example #3 on TB page 64: The table shows the elevations of four sea creatures relative to sea level. Which of the sea creatures are deeper than the whale? Explain.
4. Question #12 on TB page 76: Soil is composed of several layers. A geologist measures the depths of the subsoil and the bedrock, as shown. Find and interpret two quotients involving the depths of the subsoil and the bedrock.

Physical Education:

1. Question #45 on TB page 60: The table shows a golfer's scores relative to par for three out of four rounds of a tournament. What was the golfer's mean score per round for the first 3 rounds? The golfer's goal for the tournament is to have a mean score no greater than -3 . Describe how the golfer can achieve this goal.
2. Question #40 on TB page 66: In softball, a batting average is the number of hits divided by the number of times at bat. Does Player 1 or Player 2 have the greater batting average?

Language Arts:

1. Writing Question #10 on TB page 51: What can you conclude about two integers whose product is (a) positive and (b) negative?
2. Writing Question #10 on TB page 57: What can you conclude about two integers whose quotient is (a) positive, (b) negative, or (c) zero?
3. Writing Question #9 on TB page 63: Compare and contrast terminating decimals and repeating decimals.
4. Writing Question #7 on TB page 69: Explain how to determine whether a product of two rational numbers is positive or negative.
5. Writing Question #8 on TB page 75: Explain how to determine whether a quotient of two rational numbers is positive or negative.

Grade 7 Mathematics
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Spot Light On: Rachel Carson			
Social and Emotional Learning: <i>Competencies</i>		Social and Emotional Learning: <i>Sub-Competencies</i>	
SEL Competencies: <ul style="list-style-type: none"> • Self-Awareness • Social Awareness • Self-Management • Relationship Skills • Responsible Decision-Making 		<ul style="list-style-type: none"> • 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) <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: • 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 <u>Resources/Materials</u>			
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,	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

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Edulastic, Achieve the Core, 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 <i>Strategies & Techniques</i>			
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.	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	Disciplinary Concept(s): Critical Thinking and Problem Solving		
	Core Ideas:	An essential aspect of problem solving is being able to self reflect on why possible solutions for solving problems were or were not successful.	

LITERACIES & KEY SKILLS	<i>Performance Expectation/s:</i>	9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.
	Career Readiness, Life Literacies, & Key Skills Practices	
	<p>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.</p>	

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>	X	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>	X	Standards in Action: <i>Climate Change</i>
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