







Marking Period	Unit Title	Recommended Instructional Days
3	Multiply Fractions by Whole Numbers	7 - 9 Days
Domain		
<p><i>Strand:</i></p> <p> 4.NF.B.4a Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. Understand a fraction a/b as a multiple of $1/b$.</p> <p> 4.NF.B.4b Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number.</p> <p> 4.NF.B.4c Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.</p> <p>Key:</p> <p>  Major Cluster  Supporting Cluster  Additional Cluster </p>		
<p>Progress Indicator: ◊ Tests ◊ Homework / Classwork ◊ Projects ◊ Formative assessments ◊ Summative assessments</p>		
Mathematical Practices:		
<ol style="list-style-type: none"> 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:

Lesson 8.1 How can you write a fraction as a product of a whole number and a unit fraction?

Lesson 8.2 How can you write a product of a whole number and a fraction as a product of a whole number and a unit fraction?

Lesson 8.3 How can you use a model to multiply a fraction by a whole number?

Lesson 8.4 How can you multiply a fraction by a whole number to solve a problem?

Lesson 8.5 How can you use the strategy, *draw a diagram*, to solve comparison problems with fractions?

Essential Understandings:

Lesson 8.1 Write a fraction as a product of a whole number and a unit fraction.

Lesson 8.2 Write a product of a whole number and a fraction as a product of a whole number and a unit fraction.

Lesson 8.3 Use a model to multiply a fraction by a whole number.

Lesson 8.4 Multiply a fraction by a whole number to solve a problem.

Lesson 8.5 Use the strategy, *draw a diagram*, to solve comparison problems with fractions.

Vocabulary:

- Equation
- Fraction
- Identity Property of Multiplication
- Mixed Number
- Multiple
- Pattern
- Product
- Unit Fraction

Suggested Activity Description(s):

Show what you know, Problem of the Day, Fluency Builders, Personal Math Trainer, Math on the Spot Videos, Real World Videos, Vocabulary Preview Activity, Reteach and Enrichment Activities, Interactive Student Edition Textbook, RtI Activities, Grab and Go Differentiated Centers, Journal Writing, Advanced Learners Activities, Assessments, Standards Focus Packets for the related NJSLs, Success for English Learners Activities, Performance Task

◇ Suggested Sample Tasks:

Activity Description: Pumping Parts

Interdisciplinary Connections: Math and Science

Content: Supporting Yearly Data Learning Activity, Hands on Activity: Pump It Up!
Performance Task (Unit 5 Lesson 2; Pages 311-313)

Science

Objective: Students investigate to gather evidence about the relationship between exercise, heart rate, and breathing rate.

Skills Assessed:

- Analyze results
- Draw conclusions
- Cause and Effect
- Planning and Carrying Out Investigations
- Citing Evidence

Math

Objective: Collect and organize data accurately

Skills Assessed:

- Data in a table
- Solve multistep word problems using whole numbers
- Accurate Measurements
- Measurement

Interdisciplinary Connections:

STEM Activity: In Chapter 8, students develop their understanding of multiplying fractions by whole numbers, such as finding a part of a whole represented by a fraction using multiplication. These same topics are used often in the development of various science concepts and process skills. Help students make the connection between math, science and technology through the S.T.E.M. activities and activity worksheets found at Think Central.

In Chapter 8, students connect math, science and technology with the S.T.E.M. Activity Generating Electricity and the accompanying worksheets (pages 117 and 118). Through this S.T.E.M. Activity, students will connect to the GO Math! Chapter 8 concepts and skills with various concepts of electricity conservation, including finding the cost to power appliances from their fraction of a total electricity bill. It is recommended that this S.T.E.M. Activity will be used after Lesson 8.4.

Science:

1. Weather and climate mean different things. Weather is the condition of the atmosphere at a certain place and time. If you look outside and see that it is raining, that describes the weather. Climate is the average weather conditions in an area over a long period of time. If you are planning a trip to Chicago and look up the average temperature for that month, that describes the climate of Chicago. Scientists collect weather data, such as precipitation, and use it to understand a region’s climate. Suppose it rains $\frac{3}{8}$ inch on each of 5 days. What is the total rainfall using multiples?

Social Studies:

1. During Colonial times, people preserved food, so they could have different foods to eat all year, especially during the winter months. There were different techniques used to preserve food. Some of the methods were drying, salting, pickling, and jellying. Jellying is the process of preserving fruit with sugar. Some of the preserved fruits during Colonial times were apples, peaches, pears, and cherries. Suppose it takes $\frac{3}{4}$ cup sugar for each batch of apple jelly. If you have only a $\frac{1}{4}$ measuring cup, how many scoops does it take to make 3 batches of apple jelly?

Language Arts:

1. Vocabulary Preview Activity, Go Math pg. 454
2. Vocabulary Game, Go Math pg.454 A
3. The Write Way, Go Math pg. 454 B

Spot Light On: *Show students the why behind how things are done when possible.*

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.

Grade 4 Mathematics
Unit 8: Multiply Fractions by Whole Numbers

September
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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 • 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 <i>Resources/Materials</i>			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	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, Go Math Leveled Strategies for English Learners, Go Math Linguistic Support	ST Math Challenge Objectives, G&T tasks, Enrichment worksheets, Art of Problem Solving, Leveled assessments, Go Math Teaching for Depth
Supplemental Resources			
Technology: • Chromebooks • 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 LITERACIES & KEY SKILLS	Disciplinary Concept(s): Responsible and Contributing Community Member		
	Core Ideas:	Curiosity and willingness to try new ideas (intellectual risk taking) contributes to the development of creativity and innovation.	
	Performance Expectation/s:	9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity.	
	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.		

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	<p>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>
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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>	x	Standards in Action: <i>Climate Change</i>