Marking Period	Unit Title	Recommended Instructional Days
3	**Multiply Fractions**	15 - 20 days

Domain

Strand:

5.NF.B.4.a Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)

5.NF.B.4.b Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

5.NF.B.5.a Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

5.NF.B.5.b Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

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:

Lesson 7.1 How can you find the fractional part of a group?
Lesson 7.2 How can you use a model to show the product of a fraction and a whole number?
Lesson 7.3 How can you find the product of a fraction and a whole number without using a model?
Lesson 7.4 How can you use an area model to show the product of two fractions?
Lesson 7.5 How does the size of the product compare to the size of one factor when multiplying fractions?
Lesson 7.6 How do you multiply fractions?
Lesson 7.7 How can you use a unit tile to find the area of a rectangle with fractional side lengths?
Lesson 7.8 How does the size of the product compare to the size of one factor when multiplying fractions greater than one?
Lesson 7.9 How do you multiply mixed numbers?
Lesson 7.10 How can you use the strategy guess, check, and revise to solve problems with fractions?

Essential Understandings:

Lesson 7.1 Model to find the fractional part of a group.
Lesson 7.2 Model the product of a fraction and a whole number.

Lesson 7.3 Multiply fractions and a whole numbers.
Lesson 7.4 Multiply fractions using models.
Lesson 7.5 Relate the size of the product compared to the size of one factor when multiplying fractions.
Lesson 7.6 Multiply fractions.
Lesson 7.7 Use a model to multiply two mixed numbers and find the area of a rectangle.
Lesson 7.8 Relate the size of the product to the factors when multiplying fractions greater than one.
Lesson 7.9 Multiply mixed numbers.
Lesson 7.10 Solve problems using the strategy *guess, check, and revise*.

Vocabulary:

- Denominator
- Equivalent
- Fractions
- Mixed Number
- Numerator
- Product
- Simplest Form

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: Problem Solving
Interdisciplinary Connections: Math and Science
Content: Energy and Matter in Ecosystems,
Performance Task: How Do Energy and Matter Move Through Ecosystems? (Unit 4 Lesson 1; Pages 232-234)

Science
Objective: Show how matter moves among organisms and their environment.
Skills Assessed:
● Identify all components of a food web
● Makes a claim well supported by evidence and reasoning.

Math
Objective: After creating food web research the energy passed through the web by converting it into an energy pyramid. Multiply fractions to figure out how much energy is lost as the food web continues.
Skills Assessed:
● multiply fractions

Interdisciplinary Connections:

STEM Activity: In Chapter 7, students develop their understanding of multiplying fractions by finding the fraction that represents part of a group. These same topics are used often in the development of various science concepts and process skills. Help students make the connection between math and science through the S.T.E.M. activities and activity worksheets found at www.thinkcentral.com.

In Chapter 7, students connect math and science with the S.T.E.M. Activity How Do We Know? and the accompanying worksheets (pages 145 and 146). Through this S.T.E.M. Activity, students will connect to the GO Math! Chapter 7 concepts and skills with various aspects of genetic inheritance, including adding fractions to analyze the probabilities of traits arising in offspring from different parental genetics. It is recommended that this S.T.E.M. Activity will be used after Lesson 7.1.

Science:
1. The Earth rotates on its axis once every 24 hours. One rotation takes one day. This rotation causes different parts of Earth to have light and dark every day. The sun provides the Earth's light, so when a part of the Earth is not facing the sun, it is in the dark. When it is dark on Earth for $\frac{1}{4}$ of the day, for how many hours is it dark?

2. The water cycle is the process in which water circulates through the atmosphere. Heat from the sun causes water to evaporate as vapor into the air. Rising air currents carry the water vapor up into the atmosphere, where cooler temperatures cause it to condense into clouds. Tiny droplets in the clouds collide, grow, and fall to Earth as precipitation, such as rain or snow. Tina has a rain gauge outside to measure the amount of rain. On Monday, she measured $\frac{7}{8}$ inch of rain. By Tuesday, $\frac{1}{3}$ of the rain had evaporated. How many inches of rain remained in the gauge?

Social Studies:
1. Display the map and discuss that there are 50 states in the United States. The mainland is surrounded by the Pacific Ocean to the west, the Atlantic Ocean to the east, and the Gulf of Mexico to the south. Explain that $\frac{1}{10}$ of the states border the Gulf of Mexico. Have students find how many states border the Gulf of Mexico. Have students look at the map to identify which states border the Gulf of Mexico.

2. The federal government owns land in every state. Some of the land is used for national parks. The federal government owns about $\frac{3}{5}$ of the land in Alaska. If the federal government owns about $\frac{1}{2}$ as much of the land in Pennsylvania as it does in Alaska, about what fraction of the land in Pennsylvania is government-owned?

Language Arts:
1. Vocabulary Builder Activity, Go Math pg. 420
2. Vocabulary Game, Go Math pg. 420 A
3. The Write Way, Go Math pg. 420 B
4. Grab and Go Reader - Cranking Out the Numbers

Spot Light On: *Acknowledge every student's comment or response, even if it's incorrect.*

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, 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 *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	Utilize a multi-sensory (VAKT) approach during instruction, provide alternate presentations of skills by varying the method	Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when	Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic

individual instruction as needed, modify assessments and/or rubrics.	(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.	necessary, supplemental materials including use of an online bilingual dictionary, and modified assessment and/or rubric.	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.** **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*		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*