5 Math Unit 10: Multiply Fractions

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 3**
Length: **15 Days**
Status: **Published**

Unit Overview

Multiply Fractions

In this unit, students will build on their understanding of multiplying fractions by whole numbers using models to multiply fractions by whole numbers, fractions and mixed numbers.Throughout the unit, students utilize estimation to check the reasonableness of their answers. Using area models, fraction tiles, and cuisenare rods, students make sense of fraction multiplication and develop efficient strategies.Later in the unit, students use the concept of scaling to reason about the size of products. Students grapple with the concept that multiplying by a positive fraction less than one results in the product being smaller than the factors.

What Students Are Learning

- Students amultiply a fraction by a whole number or another fraction
- Students find the area of a rectangle with fractional side lengths
- Students compare the size of the product to the size of a factor based on the size of the other factor

Number Routines

- Would you rather?
- Which benchmark is it closest to?
- What's another way to write it?
- Decompose It
- Notice & Wonder
- Find a Pattern, Make a Pattern
- Numberless Word Problem

Standards

MATH.5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
MATH.5.NF.B.5	Interpret multiplication as scaling (resizing), by:
MATH.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.

Materials

Core Materials:

Reveal Math

10.1 Represent Multiplication of a Whole Number by a Fraction

10.2 Multiply a Whole Number by a Fraction

10.3 Represent Multiplication a Fraction by a Fraction

10.4 Multiply a Fraction by a Fraction

10.5 Determine the Area of Rectangles with Fractional Side Lengths

10.6 Represent Multiplication of Mixed Numbers

10.7 Multiply Mixed Numbers

10.8 Multiplication as Scaling

10.9 Solve Word Problems Involving Fractions

Supplemental Materials:

- ST Math
- Happy Numbers
- 3 Act Lessons
- Building Fact Fluency Kit
- Brainingcamp Manipulatives
- Nearpod Lessons
- Brainpop Resources
- Online Resources

Technology

CS.3-5.8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
CS.3-5.8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
CS.3-5.8.1.5.DA.4	Organize and present climate change data visually to highlight relationships or support a claim.
CS.3-5.8.2.5.ED.2	Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
CS.3-5.8.2.5.ED.3	Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
CS.3-5.DA	Data & Analysis Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Data can be organized, displayed, and presented to highlight relationships.

Assessment

Formative Assessment

- Unit Readiness Diagnostics
- Lesson Checks
- Exit Tickets
- Teacher Observation

Summative Assessment

- Unit Assessment Performance Task
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

Differentiated Instruction			
Accommodate Based on Students Individual Needs: Strategies			
Time/General • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline	**Processing** • Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners	**Comprehension** • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning	**Recall** • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic organizers

Assistive Technology	Tests/Quizzes/Grading	Behavior/Attention	Organization
• Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books	• Extended time • Study guides • Focused/chunked tests • Read directions aloud	• Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback	• Individual daily planner • Display a written agenda • Note-taking assistance • Color code materials

504

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

At-risk of Failure

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts

- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Interdisciplinary Connections

SCI.3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
ELA.RI.MF.5.6	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears.
ELA.SL.PE.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

Career Readiness, Life Literacies & Key Skills

	People can choose to save money in many places such as home in a piggy bank, bank, or credit union.
PFL.9.1.5.FI.1	Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies.
PFL.9.1.5.PB.1	Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.
WRK.9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
WRK.9.2.5.CAP.4	Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
TECH.9.4.5.CT	Critical Thinking and Problem-solving
TECH.9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).

TECH.9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).

Career Ready Practices

STEM CAREER: Welder Student discusses her aspirations to be a welder. Student makes go-carts. Student uses multiplication of fractions to find out how much work she can get done in a day.

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.