Unit 10 Reveal Grade 5

Content Area: **Math**
Course(s): **Math**
Time Period: **April**
Length: **4 weeks**
Status: **Published**

Unit overview

UNIT 10 PLANNER
Multiply Fractions

PACING: 13 days

LESSON		MATH OBJECTIVE	LANGUAGE OBJECTIVE	SOCIAL AND EMOTIONAL LEARNING OBJECTIVE	LESSON	KEY VOCABULARY
Unit Opener	IGNITE! Folding Fractions on a Strip	Students explore how much is represented when folding a strip.				
						Math Terms
10-1	Represent Multiplication of a Whole Number by a Fraction	Students use a representation to multiply a whole number by a fraction.	Students discuss using representations to multiply a whole number by a fraction using *other ways* and *different ways*.	Students identify personal traits that make them good students, peers, and math learners.	10-1	fraction model multiplication partition
10-2	Multiply a Whole Number by a Fraction	Students multiply a whole number by a fraction.	Students explain multiplying a whole number by a fraction using the verbs *notice* and *apply*, and the phrase *make a shortcut*.	Students demonstrate thoughtful reflection through identifying the causes of challenges and successes while completing a mathematical task.	10-2	denominator numerator
Math Probe	Which is Greater?	Students identify the quantity that is greater.				
10-3	Represent Multiplication of a Fraction by a Fraction	Students use a representation to multiply a fraction by a fraction.	Students explain how to represent multiplication of a fraction by a fraction using the verbs *partition* and *show* and the nouns *patterns* and *shortcuts*.	Students offer constructive feedback to the mathematical ideas posed by others.	10-3	fraction model multiplication
10-4	Multiply a Fraction by a Fraction	Students multiply a fraction by a fraction by multiplying the numerators and multiplying the denominators.	Students talk about multiplying a fraction by a fraction by multiplying the numerators and denominators using *relate*.	Students analyze the components of a problem to make informed decisions when engaging in mathematical practices.	10-4	denominator numerator
10-5	Determine the Area of Rectangles with Fractional Side Lengths	Students find the area of a rectangle with fractional side lengths by tiling. Students find the area of a rectangle with fractional side lengths by multiplying the side lengths.	Students explain how to find the area of a rectangle with fractional side lengths using the verb *tile*.	Students discuss how a mathematical rule or routine can help develop mathematical skills and knowledge.	10-5	area square unit
10-6	Represent Multiplication of Mixed Numbers	Students use an area model to represent multiplication of mixed numbers. Students find partial products using an area model.	Students talk about using an area model to represent multiplication of mixed numbers using the terms *similar to* and *different from*.	Students engage in respectful discourse with peers about various perspectives for approaching a mathematical challenge.	10-6	area model decompose mixed number partial products
10-7	Multiply Mixed Numbers	Students use partial products to multiply mixed numbers. Students write mixed numbers as fractions to find the product.	Students discuss multiplying mixed numbers using the verb *find*.	Students exchange ideas for completing a mathematical task with a peer and reflect on the value of their similarities and differences.	10-7	decompose partial products
10-8	Multiplication as Scaling	Students explain how the size of the factors impacts the size of the product without performing the multiplication.	Students explain why the product of a given number and a fraction greater than 1 results in a product greater than the given number.	Students discover and discuss personal interests related to mathematics and share these interests with peers.	10-8	scaling
10-9	Solve Word Problems Involving Fractions	Students solve word problems involving fractions.	Students talk about solving word problems involving fractions using the verb *determine*.	Students develop and execute a plan for mathematical problem solving.	10-9	equation unknown variable
Unit Review						
Fluency Practice						
Performance Task						
Unit Assessment						

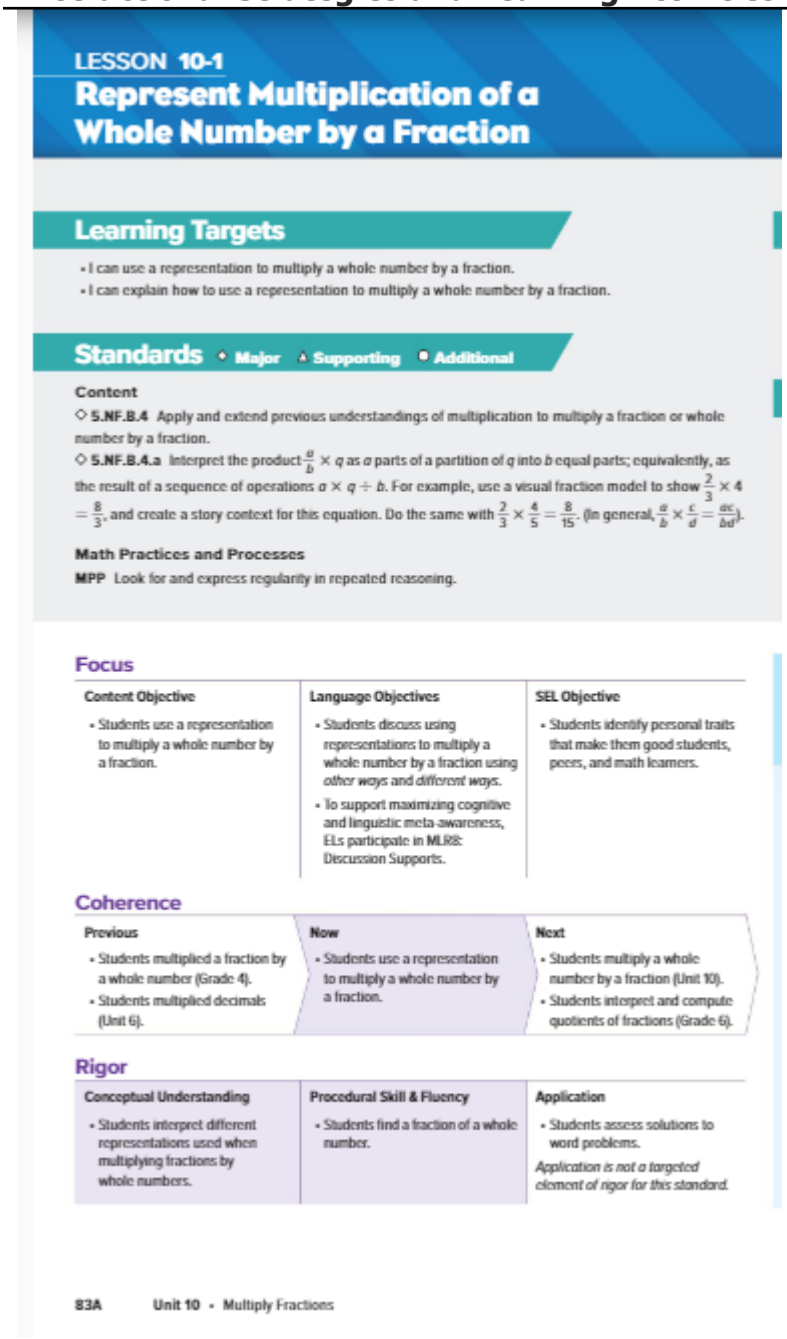
Enduring Understandings

See Above.

Essential Questions

See Above.

Instructional Strategies and Learning Activities



LESSON 10-1

Represent Multiplication of a Whole Number by a Fraction

Learning Targets

- I can use a representation to multiply a whole number by a fraction.
- I can explain how to use a representation to multiply a whole number by a fraction.

Standards ◆ Major △ Supporting ○ Additional

Content

◇ **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

◇ **5.NF.B.4.a** Interpret the product $\frac{a}{b} \times q$ 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 $\frac{2}{3} \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$. (In general, $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.)

Math Practices and Processes

MPP Look for and express regularity in repeated reasoning.

Focus

Content Objective	Language Objectives	SEL Objective
• Students use a representation to multiply a whole number by a fraction.	• Students discuss using representations to multiply a whole number by a fraction using *other ways* and *different ways*. • To support maximizing cognitive and linguistic meta-awareness, ELs participate in MLR8: Discussion Supports.	• Students identify personal traits that make them good students, peers, and math learners.

Coherence

Previous	Now	Next
• Students multiplied a fraction by a whole number (Grade 4). • Students multiplied decimals (Unit 6).	• Students use a representation to multiply a whole number by a fraction.	• Students multiply a whole number by a fraction (Unit 10). • Students interpret and compute quotients of fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students interpret different representations used when multiplying fractions by whole numbers.	• Students find a fraction of a whole number.	• Students assess solutions to word problems. *Application is not a targeted element of rigor for this standard.*

LESSON 10-2

Multiply a Whole Number by a Fraction

Learning Target

- I can multiply a whole number by a fraction.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

◇ **5.NF.B.4.a** Interpret the product $\frac{a}{b} \times q$ 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 $\frac{2}{3} \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$. (In general, $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.)

Math Practices and Processes

MPP Look for and and make use of structure.

Focus

Content Objective	Language Objectives	SEL Objective
• Students multiply a whole number by a fraction by multiplying the numerator times the whole number, and using that as the numerator in the product and the denominator of the fraction as the denominator.	• Students explain multiplying a whole number by a fraction using the verbs *notice* and *apply*, and the phrase *make a shortcut*. • To support optimizing output, ELs participate in MLR1: Stronger and Clearer Each Time.	• Students demonstrate thoughtful reflection through identifying the causes of challenges and successes while completing a mathematical task.

Coherence

Previous	Now	Next
• Students multiplied a fraction by a whole number (Grade 4). • Students used a representation to multiply a whole number by a fraction (Unit 10).	• Students multiply a whole number by a fraction using properties of operations.	• Students represent multiplication of a fraction by a fraction (Unit 10). • Students interpret and compute quotients of fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students expand their understanding of multiplying fractions by discovering how to multiply the numerator by the whole number to find the product.	• Students apply strategies to gain proficiency with multiplying fractions by whole numbers.	• Students solve word problems with real-world contexts. *Application is not a targeted element of rigor for this standard.*

LESSON 10-3

Represent Multiplication of a Fraction by a Fraction

Learning Targets

- I can use a representation to multiply a fraction by a fraction.
- I can explain how to use a representation to multiply a fraction by a fraction.

Standards ◇ Major △ Supporting ○ Additional

Content

◇ **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

◇ **5.NF.B.4.a** Interpret the product $\frac{a}{b} \times q$ 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 $\frac{2}{3} \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$. (In general, $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.)

Math Practices and Processes

MPP Reason abstractly and quantitatively.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students use a representation to multiply a fraction by a fraction. • Students explain how to use a representation to multiply a fraction by a fraction.	• Students explain how to represent multiplication of a fraction by a fraction using the verbs *partition* and *show* and the nouns *patterns* and *shortcuts*. • To support sense-making, ELs participate in MLR3: Three Reads.	• Students offer constructive feedback to the mathematical ideas posed by others.

Coherence

Previous	Now	Next
• Students multiplied a fraction by a whole number (Grade 4). • Students multiplied a whole number by a fraction (Unit 10).	• Students represent multiplication of a fraction by a fraction.	• Students multiply a fraction by a fraction (Unit 10). • Students interpret and compute quotients of fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of multiplication as they use a representation to multiply two fractions.	• Students build proficiency with fractions and strategies for multiplying fractions.	• Students multiply fractions to solve word problems. *Application is not a targeted element of rigor for this standard.*

LESSON 10-4

Multiply a Fraction by a Fraction

Learning Target

- I can multiply a fraction by a fraction.

Standards ◇ Major △ Supporting ○ Additional

Content

◇ **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

◇ **5.NF.B.4.a** Interpret the product $\frac{a}{b} \times q$ 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 $\frac{2}{3} \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$. (In general, $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.)

Math Practices and Processes

MPP Look for and express regularity in repeated reasoning.

MPP Look for and make use of structure.

Focus

Content Objective	Language Objectives	SEL Objective
• Students multiply a fraction by a fraction by multiplying the numerators and multiplying the denominators.	• Students talk about multiplying a fraction by a fraction by multiplying the numerators and denominators using *relate*. • To support cultivating conversation, ELs participate in MLR3: Critique, Correct, and Clarify.	• Students analyze the components of a problem to make informed decisions when engaging in mathematical practices.

Coherence

Previous	Now	Next
• Students multiplied a fraction by a whole number (Grade 4). • Students represented multiplication of a fraction by a fraction (Unit 10).	• Students multiply a fraction by a fraction.	• Students determine the area of a rectangle with fractional side lengths (Unit 10). • Students interpret and compute quotients of fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students notice and generalize a pattern that connects the area model to an equation.	• Students build proficiency with representations and multiplication involving fractions.	• Students solve word problems. *Application is not a targeted element of rigor for this standard.*

LESSON 10-5

Determine the Area of Rectangles with Fractional Side Lengths

Learning Targets

- I can find the area of a rectangle with fractional side lengths by tiling it with unit squares with unit fraction side lengths.
- I can find the area of a rectangle with fractional side lengths by multiplying the side lengths.

Standards ◇ Major △ Supporting ○ Additional

Content

◇ **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

◇ **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.

Math Practices and Processes

MPP Look for and express regularity in repeated reasoning.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students find the area of a rectangle with fractional side lengths by tiling it with unit squares. • Students find the area of a rectangle with fractional side lengths by multiplying the side lengths.	• Students explain how to find the area of a rectangle with fractional side lengths using the verb *tile*. • To support sense-making, ELs participate in MLR2: Collect and Display.	• Students discuss how a mathematical rule or routine can help develop mathematical skills and knowledge.

Coherence

Previous	Now	Next
• Students multiplied a fraction by a whole number (Grade 4). • Students multiplied a fraction by a fraction (Unit 10).	• Students determine the area of a rectangle with fractional side lengths.	• Students multiply mixed numbers using area models and partial products (Unit 10). • Students interpret and compute quotients of fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build understanding about multiplying fractions using the concept of area.	• Students build proficiency multiplying fractions.	• Students solve word problems. *Application is not a targeted element of rigor for this standard.*

LESSON 10-6

Represent Multiplication of Mixed Numbers

Learning Targets

- I can use an area model to represent multiplication of mixed numbers.
- I can use an area model to find partial products when multiplying mixed numbers.

Standards ◇ Major △ Supporting ○ Additional

Content

◇ **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

◇ **5.NF.B.4.a** Interpret the product $\frac{a}{b} \times q$ 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 $\frac{2}{3} \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$. (In general, $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.)

Math Practices and Processes

MPP Model with mathematics.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students use an area model to represent multiplication of mixed numbers. • Students find partial products using an area model.	• Students talk about using an area model to represent multiplication of mixed numbers using the terms *similar to* and *different from*. • To support optimizing output, students participate in MLR3 Info Gap.	• Students engage in respectful discourse with peers about various perspectives for approaching a mathematical challenge.

Coherence

Previous	Now	Next
• Students multiplied a fraction by a whole number (Grade 4). • Students determined the area of a rectangle with fractional side lengths (Unit 10).	• Students multiply mixed numbers using area models and partial products.	• Students multiply mixed numbers using equations and partial products (Unit 10). • Students interpret and compute quotients of fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build understanding of multiplying mixed numbers using representations.	• Students build proficiency for adding fractions by using multiple strategies.	• Students solve problems with real-world contexts. *Application is not a targeted element of rigor for this standard.*

LESSON 10-7

Multiply Mixed Numbers

Learning Targets

- I can use partial products to multiply mixed numbers.
- I can multiply mixed numbers by writing the mixed numbers as fractions and then multiplying fractions.

Standards ● Major ▲ Supporting ○ Additional

Content

◇ **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

◇ **5.NF.B.4.a** Interpret the product $\frac{a}{b} \times q$ 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 $\frac{2}{3} \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$. (In general, $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.)

Math Practices and Processes

MPP Look for and make use of structure.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students use partial products to multiply mixed numbers by decomposing the mixed number into a whole number part and a fractional part. • Students write mixed numbers as fractions, then multiply two fractions to find the product.	• Students discuss multiplying mixed numbers using the verb *find*. • To support optimizing output, ELs participate in MLR7: Compare and Connect.	• Students exchange ideas for completing a mathematical task with a peer and reflect on the value of their similarities and differences.

Coherence

Previous	Now	Next
• Students multiplied a fraction by a whole number (Grade 4). • Students multiplied mixed numbers using area models and partial products (Unit 10).	• Students multiply mixed numbers using equations and partial products.	• Students interpret multiplication as scaling (Unit 10). • Students interpret and compute quotients of fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build understanding of multiplying mixed numbers as they relate visual representations to equations.	• Students build proficiency for multiplying mixed numbers by using multiple strategies.	• Students solve word problems. *Application is not a targeted element of rigor for this standard.*

LESSON 10-8

Multiplication as Scaling

Learning Targets

- I can explain how the size of the factors impacts the size of the product without performing the multiplication.
- I can explain why the product of a given number and a fraction greater than 1 is greater than the given number and why the product of a given number and a fraction less than 1 is less than the given number.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **5.NF.B.5** Interpret multiplication as scaling (resizing), by:

◇ **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; 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 $\frac{a}{b} = \frac{a \times a}{a \times b}$ to the effect of multiplying $\frac{a}{b}$ by 1.

Math Practices and Processes

MPP Model with mathematics.

Focus

Content Objectives
- Students explain how the size of the factors impacts the size of the product without performing the multiplication.
- Students explain how the product of a given number and a fraction is related to the size of the fraction.

Language Objectives
- Students explain why the product of a given number and a fraction is related to the size of the fraction.
- To support optimizing output, ELs participate in MLR1: Stronger and Clearer Each Time.

SEL Objective
- Students discover and discuss personal interests related to mathematics and share these interests with peers.

Coherence

Previous
- Students interpreted multiplication as a comparison (Grade 4).
- Students multiplied mixed numbers using equations and partial products (Unit 10).

Now
- Students interpret multiplication as scaling.

Next
- Students solve problems involving fractions (Unit 10).
- Students understand ratio concepts and language (Grade 6).

Rigor

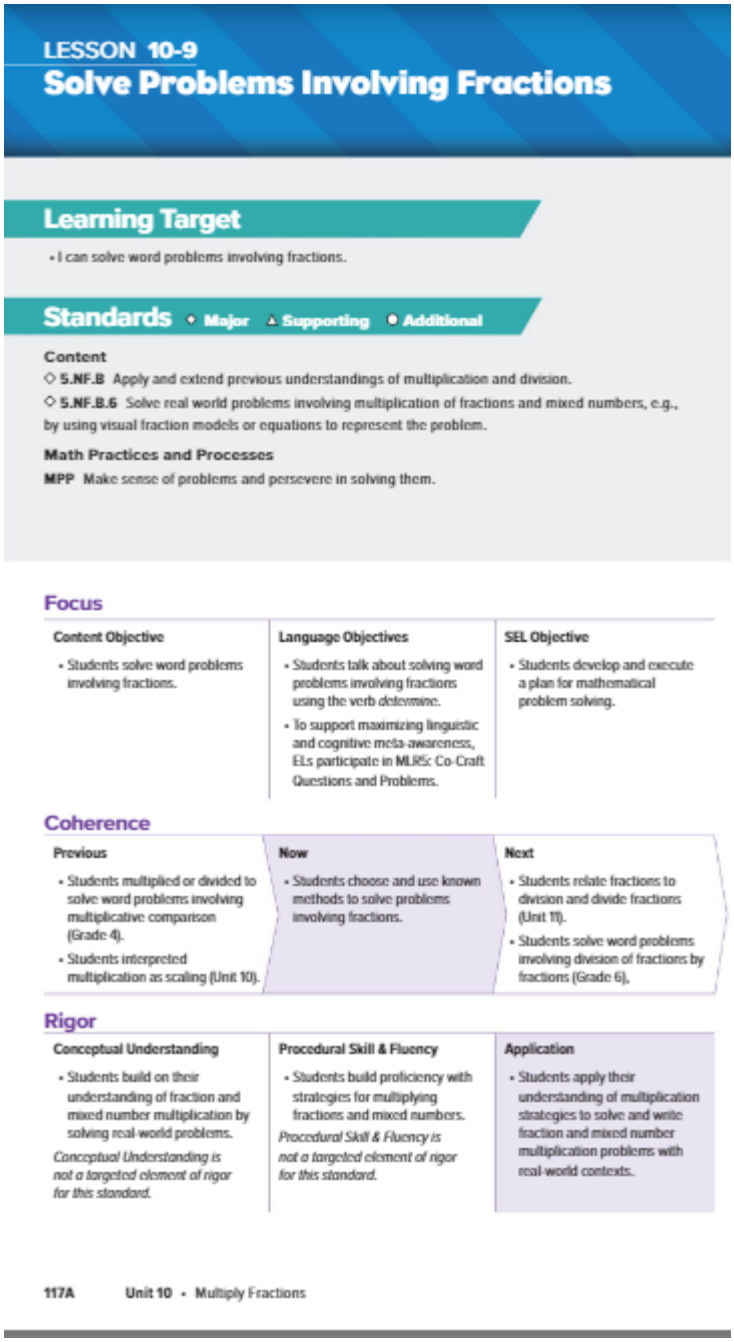
Conceptual Understanding
- Students build understanding of multiplication as they determine how the size of one factor impacts the size of the product relative to the other factor.

Procedural Skill & Fluency
- Students build proficiency interpreting multiplication.

Procedural Skill & Fluency is not a targeted element of rigor for this standard.

Application
- Students interpret multiplication with fractions and mixed numbers in real-world contexts.

Application is not a targeted element of rigor for this standard.



LESSON 10-9

Solve Problems Involving Fractions

Learning Target

- I can solve word problems involving fractions.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **5.NF.B** Apply and extend previous understandings of multiplication and division.

◇ **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.

Math Practices and Processes

MPP Make sense of problems and persevere in solving them.

Focus

Content Objective	Language Objectives	SEL Objective
• Students solve word problems involving fractions.	• Students talk about solving word problems involving fractions using the verb *determine*. • To support maximizing linguistic and cognitive meta-awareness, ELs participate in MLRS: Co-Craft Questions and Problems.	• Students develop and execute a plan for mathematical problem solving.

Coherence

Previous	Now	Next
• Students multiplied or divided to solve word problems involving multiplicative comparison (Grade 4). • Students interpreted multiplication as scaling (Unit 10).	• Students choose and use known methods to solve problems involving fractions.	• Students relate fractions to division and divide fractions (Unit 11). • Students solve word problems involving division of fractions by fractions (Grade 6).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of fraction and mixed number multiplication by solving real-world problems. *Conceptual Understanding is not a targeted element of rigor for this standard.*	• Students build proficiency with strategies for multiplying fractions and mixed numbers. *Procedural Skill & Fluency is not a targeted element of rigor for this standard.*	• Students apply their understanding of multiplication strategies to solve and write fraction and mixed number multiplication problems with real-world contexts.

Integration of Career Readiness, Life Literacies and Key Skills

9.4.8.CI.1	Assess data gathered on varying perspectives on causes of climate change (e.g., cross-cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).
9.2.5.CAP.1	Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
9.2.5.CAP.2	Identify how you might like to earn an income.
9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

9.4.8.CI.4	Explore the role of creativity and innovation in career pathways and industries.
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.
9.1.2. FI.1	Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).
9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.
9.4.8.DC.2	Provide appropriate citation and attribution elements when creating media products (e.g., W.6.8).
9.1.2.PB.2	Explain why an individual would choose to save money.
9.4.8.DC.4	Explain how information shared digitally is public and can be searched, copied, and potentially seen by public audiences.
9.4.8.DC.5	Manage digital identity and practice positive online behavior to avoid inappropriate forms of self-disclosure.
9.4.8.DC.8	Explain how communities use data and technology to develop measures to respond to effects of climate change (e.g., smart cities).
9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect (e.g., 1.5.8.C1a).
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.2	Identify specific examples of distortion, exaggeration, or misrepresentation of information.
9.4.8.IML.3	Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
9.4.8.IML.5	Analyze and interpret local or public data sets to summarize and effectively communicate the data.
9.4.8.IML.7	Use information from a variety of sources, contexts, disciplines, and cultures for a specific purpose (e.g., 1.2.8.C2a, 1.4.8.CR2a, 2.1.8.CHSS/IV.8.AI.1, W.5.8, 6.1.8.GeoSV.3.a, 6.1.8.CivicsDP.4.b, 7.1.NH. IPRET.8).
9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.
9.4.8.TL.1	Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.
9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
9.4.8.TL.5	Compare the process and effectiveness of synchronous collaboration and asynchronous collaboration.
9.4.8.TL.6	Collaborate to develop and publish work that provides perspectives on a real-world problem.

Technology and Design Thinking

8.1.5.CS.3	Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
	Data can be organized, displayed, and presented to highlight relationships.
8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
8.1.5.DA.4	Organize and present climate change data visually to highlight relationships or support a claim.

Interdisciplinary Connections

LA.RI.5.1	Quote accurately from a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
LA.RI.5.2	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
LA.RI.5.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
LA.RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
LA.RI.5.5	Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
LA.RI.5.6	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
LA.RI.5.7	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
LA.RI.5.8	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).
LA.RI.5.9	Integrate and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) information from several texts on the same topic in order to write or speak about the subject knowledgeably.
LA.RI.5.10	By the end of year, read and comprehend literary nonfiction at grade level text-complexity or above, with scaffolding as needed.
LA.W.5.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.SL.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.
LA.L.5.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
LA.L.5.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:

    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

Use Differentiation guide in Teacher's manual for each unit

Modifications and Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

End of Unit assessments

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

Teacher Observations

Checklists

Questions and Discussions

Quizzes

Summative Assessments

Summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

End of Unit Assessments

Instructional Materials

See Above

Standards

5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
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 $a \times q \div b$.
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.