

Module 4: Multiplication and Division of Fractions and Decimal Fractions (Trimester 2: 38 Days)

Topic A	Line Plots of Fraction Measurements		5.MD.2
ASSESSMENT	5.MD.2	Reporting Strand: Multiplies and divides fractions	Report Card: 0-4
Topic B	Fractions as Division		5.NF.3
ASSESSMENT	5.NF.3	Reporting Strand: Multiplies and divides fractions	Report Card: 0-4
Topic C	Multiplication of a Whole Number by a Fraction		5.NF.4
Topic D	Fraction Expressions and Word Problems		5.OA.1 5.OA.2 5.NF.4. 5.NF.6
Topic E	Multiplication of a Fraction by a Fraction		5.NBT.7 5.NF.4 5.NF.6 5.MD.1
ASSESSMENT	5.NF.4	Reporting Strand: Multiplies and divides fractions	Report Card: 0-4
Topic F	Multiplication with Fractions and Decimals as Scaling and Word Problems		5.NF.5 5.NF.6
ASSESSMENT	5.NF.5	Reporting Strand: Multiplies and divides fractions	Report Card: 0-4
	5.NF.6		
Topic G	Division of Fractions and Decimal Fractions		5.OA.1 5.NBT.7 5.NF.7
ASSESSMENT	5.NF.7	Reporting Strand: Multiplies and divides fractions	Report Card: 0-4
Topic H	Interpretation of Numerical Expressions		5.OA.1 5.OA.2
ASSESSMENT	5.OA.1, 2	Reporting Strand: Multiplies and divides fractions	Report Card: 0-4

- 5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$.
- 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
- 5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- 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.5 Interpret multiplication as scaling (resizing), by:
- 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.
 - 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.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.
- 5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
- Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.
 - Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.
 - Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.
- 5.MD.1 Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step, real world problems.
- 5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots.

Reporting Strand: Multiplies and divides fractions

CCSS	4 – Mastery	3- Proficient	2 – Basic	1 – Below Basic	0 – No Evidence
5.MD.2	<p>Can extend thinking beyond the standard, including tasks that may involve one of the following:</p> <ul style="list-style-type: none"> • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving 	<p>Make a line plot to display a set of data in fractional units (including $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$)</p> <p>Solve multi-step problems using information from a line plot.</p>	<p>Make a line plot to display a set of data in fractional units (including $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$)</p> <p>Solve single step problems using information from a line plot.</p>	<p>Make a line plot to display a set of data in fractional units (including $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$)</p>	<p>Little evidence of reasoning or application to solve the problem</p> <p>Does not meet the criteria in a level 1</p>
5.NF.3		<p>Interpret a fraction as division of the numerator by the denominator.</p> <p>Solve word problems involving division of whole numbers, using visual fraction models or equations, and expressing answers as fractions or mixed numbers</p>	<p>Interpret a fraction as division of the numerator by the denominator.</p> <p>Solve word problems involving division of whole numbers, using visual fraction models or equations, and expressing answers as fractions</p>	<p>Interpret a fraction as division of the numerator by the denominator.</p>	
5.NF.4a		<p>Multiply fractions doing both of the following:</p> <ul style="list-style-type: none"> • multiply a whole number by a fraction • a fraction by a fraction <p>using visual fraction models and/or equations</p> <p>Interpret the product of an equation</p>	<p>Multiply fractions doing both of the following:</p> <ul style="list-style-type: none"> • multiply a whole number by a fraction • a fraction by a fraction <p>using visual fraction models and/or equations</p>	<p>Multiply fractions doing one of the following:</p> <ul style="list-style-type: none"> • multiply a whole number by a fraction • a fraction by a fraction <p>using visual fraction models and/or equations</p>	
5.NF.5		<p>Determine and explain how a given number would be scaled (resized) when multiplying by a</p> <ul style="list-style-type: none"> • Fraction less than one • Fraction greater than one • Fraction equal to one <p>and justify all of the cases without performing the multiplication</p>	<p>Determine how a given number would be scaled (or resized) when multiplying by a</p> <ul style="list-style-type: none"> • Fraction less than one • Fraction greater than one • Fraction equal to one <p>and justify at least one of the cases without performing the multiplication</p>	<p>Determine how a given number would be scaled (or resized) when multiplying by a</p> <ul style="list-style-type: none"> • Fraction less than one • Fraction greater than one • Fraction equal to one 	
5.NF.6		<p>Solve real world problems involving multiplication of fractions and mixed numbers using visual models or equations</p>	<p>Solve real world problems involving multiplication of fractions using visual models or equations</p>	<p>Express real world problems involving multiplication of fractions and mixed numbers as a visual fraction model or equation.</p>	
5.NF.7		<p>Use both a visual fraction model and an equation for the all of the following:</p> <ul style="list-style-type: none"> • Divide unit fractions by whole numbers • Divide whole numbers by unit fractions • Solve word problems • Use the relationship between multiplication and division to interpret the quotient 	<p>Use both a visual fraction model and an equation for the three of the following:</p> <ul style="list-style-type: none"> • Divide unit fractions by whole numbers • Divide whole numbers by unit fractions • Solve word problems • Use the relationship between multiplication and division to interpret the quotient 	<p>Using both a visual fraction model and an equation for two of the following:</p> <ul style="list-style-type: none"> • Divide unit fractions by whole numbers • Divide whole numbers by unit fractions • Use the relationship between multiplication and division to interpret the quotient 	
5.OA.1, 5.OA.2		<p>For expressions using parentheses (brackets, or braces), do all of the following:</p> <ul style="list-style-type: none"> • Write a verbal expression numerically • Interpret a numerical expression • Evaluate the expression 	<p>For expressions using parentheses (brackets, or braces), do two of the following:</p> <ul style="list-style-type: none"> • Write a verbal expression numerically • Interpret a numerical expression • Evaluate the expression 	<p>For expressions using parentheses (brackets, or braces), do one of the following:</p> <ul style="list-style-type: none"> • Write a verbal expression numerically • Interpret a numerical expression • Evaluate the expression 	

Multiplica y divide fracciones

CCSS	4 – Dominio	3- Apto	2 – Básico	1 – Por debajo de lo Básico	0 – No hay Evidencia
5.MD.2		Hacen un diagrama de puntos para mostrar un conjunto de medidas en unidades fraccionarias (1/2, 1/4, 1/8) Resuelve problemas de varios pasos usando información de un diagrama de puntos.	Hacen un diagrama de puntos para mostrar un conjunto de medidas en unidades fraccionarias (1/2, 1/4, 1/8) Resuelve problemas de un solo paso usando información de un diagrama de puntos.	Hacen un diagrama de puntos para mostrar un conjunto de medidas en unidades fraccionarias (1/2, 1/4, 1/8)	
5.NF.3		Interpretan un fracción como una división del numerador entre el denominador. Resuelven problemas verbales relacionados con la división de números enteros usando modelos de fracciones visuales y expresando las respuestas como fracciones o números mixtos .	Interpretan un fracción como una división del numerador entre el denominador. Resuelven problemas verbales relacionados con la división de números enteros usando modelos de fracciones visuales y expresando las respuestas como fracciones	Interpretan un fracción como una división del numerador entre el denominador.	
5.NF.4a		Multiplican fracciones hace dos de lo siguiente: <ul style="list-style-type: none"> Multiplicar un número entero por una fracción Multiplicar una fracción por otra fracción Utilizando fracciones visuales y/o ecuaciones. Interpretar el producto de un ecuación creando una situación contextual.	Multiplican fracciones hace dos de lo siguiente: <ul style="list-style-type: none"> Multiplicar un número entero por una fracción Multiplicar una fracción por otra fracción Utilizando fracciones visuales y/o ecuaciones.	Multiplican fracciones hace uno de lo siguiente: <ul style="list-style-type: none"> Multiplicar un número entero por una fracción Multiplicar una fracción por otra fracción Utilizando fracciones visuales y/o ecuaciones.	
5.NF.5	Puede pensar más allá del estándar, incluyendo tareas que puedan involucrar uno de los siguientes aspectos:	Determinan y explican cómo un número entero dado podría cambiar de escala (o tamaño) cuando se multiplica por una <ul style="list-style-type: none"> Fracción menor que uno Fracción mayor que uno Fracción igual a uno y justifica todos estos casos sin hacer la multiplicación	Determinan y explican cómo un número entero dado podría cambiar de escala (o tamaño) cuando se multiplica por una <ul style="list-style-type: none"> Fracción menor que uno Fracción mayor que uno Fracción igual a uno y justifica al menos uno de estos casos sin hacer la multiplicación	Determinan y explican cómo un número entero dado podría cambiar de escala (o tamaño) cuando se multiplica por una <ul style="list-style-type: none"> Fracción menor que uno Fracción mayor que uno Fracción igual a uno 	Hay poca evidencia de razonamiento o aplicación para resolver el problema
5.NF.6	<ul style="list-style-type: none"> Diseñar Conectar Sintetizar Aplicar Justificar 	Resuelve problemas del mundo real de multiplicación de fracciones y números mixtos usando modelos visuales o ecuaciones.	Resuelve problemas del mundo real de multiplicación de fracciones usando modelos visuales o ecuaciones.	Expresa problemas del mundo real de multiplicación de fracciones y números mixtos usando modelos visuales o ecuaciones.	No reúne los criterios del nivel 1
5.NF.7	<ul style="list-style-type: none"> Criticar Analizar Crear Demostrar 	Utilizan un modelo de fracción visual y una ecuación hace todo lo siguiente <ul style="list-style-type: none"> Dividir fracciones unitarias entre números enteros Dividir números enteros entre fracciones unitarias Resolver problemas verbales Utilizar la relación entre multiplicación y división para interpretar el cociente 	Utilizan un modelo de fracción visual y una ecuación hace tres de lo siguiente <ul style="list-style-type: none"> Dividir fracciones unitarias entre números enteros Dividir números enteros entre fracciones unitarias Resolver problemas verbales Utilizar la relación entre multiplicación y división para interpretar el cociente 	Utilizan un modelo de fracción visual y una ecuación hace dos de lo siguiente <ul style="list-style-type: none"> Dividir fracciones unitarias entre números enteros Dividir números enteros entre fracciones unitarias Utilizar la relación entre multiplicación y división para interpretar el cociente 	
5.OA.1, 5.OA.2		Para expresiones con paréntesis (corchetes o llaves), hace todo lo siguiente : <ul style="list-style-type: none"> Escribir una expresión numérica verbal Interpretar una expresión numérica Evaluar la expresión 	Para expresiones con paréntesis (corchetes o llaves), hace dos de lo siguiente : <ul style="list-style-type: none"> Escribir una expresión numérica verbal Interpretar una expresión numérica Evaluar la expresión 	Para expresiones con paréntesis (corchetes o llaves), hace uno de lo siguiente : <ul style="list-style-type: none"> Escribir una expresión numérica verbal Interpretar una expresión numérica Evaluar la expresión 	