



Marietta City Schools District Topic Planner

Fifth Grade

Topic Title

Topic 8: Apply Understanding of Multiplication to Multiply Fractions

Unit duration

15 days

Big Idea: Numbers and Operations: Fractions - Multiplying Fractions

[Georgia Standards of Excellence](#)

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

a. Apply and use understanding of multiplication to multiply a fraction or whole number by a fraction. *Examples:* $\frac{a}{b} \times q$ as $\frac{a}{b} \times \frac{q}{1}$ and $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.

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.

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

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. *Example:* 4×10 is twice as large as 2×10 .

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 $\frac{a}{b} = \frac{(n \times a)}{(n \times b)}$ to the effect of multiplying $\frac{a}{b}$ 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.

■ Major work of the grade □ Supporting standard ● Additional standard

Informational Links

[GSE Unit 4 Frameworks: Adding, Subtracting, Multiplying, and Dividing Fractions](#)

[MCS Math Instructional Framework](#)

[MCS Math Instructional Framework with Resource Guidance](#)

About the Math

[GaDOE:Grade 5 Standards Overview Document](#)

[GaDOE: What Do Standards Look Like in Fifth Grade?](#)

Topic 8: Learning Resources

5.NF.4, 5.NF.5, 5.NF.6

Lesson Number/Task/Module	Lesson	Lesson Description	Standards Addressed
Savvas 8 -1	Multiply a Fraction by a Whole Number Savvas pp. 333-336	Students multiply a fraction by a whole number.	5.NF.4
Supplemental 8-1	Reviewing Multiplying Fractions by Whole Numbers MIP Module 9 pp.181-182	Students review multiplying a fraction by a whole number and then explore multiplying a whole number by a fraction.	5.NF.4
Savvas 8 -2	Multiply a Whole Number by a Fraction Savvas pp. 337-340	Students multiply a whole number by a fraction.	5.NF.4
Supplemental 8-2	Is it the Same? MIP Module 9 pp.182-185	Students explore multiplying a whole number by a fraction and connect it to their work with multiplying a fraction by a whole number.	5.NF.4
Savvas 8 -3	Multiply Fractions and Whole Numbers Savvas pp. 341-344	Students multiply fractions and whole numbers.	5.NF.4
Supplemental 8-3	Roll and Equation MIP Module 9 p.187	Extend student understanding of multiplication of fractions and provide meaningful practice.	5.NF.4
Savvas 8 -4	Use Models to Multiply Two Fractions Savvas pp. 345-348	Students use models to multiply two fractions.	5.NF.4
Supplemental 8-4	Modeling Multiplication of Fraction with Bars MIP Module 9	Students use fraction bars to model multiplying a fraction by a fraction.	5.NF.4

	p. 188-189		
Savvas 8 -5	Multiply Two Fractions Savvas pp. 349-352	Students multiply two fractions.	5.NF.4
Supplemental 8-5	Multiplying Fractions with Counters MIP Module 9 p.190	Students use counters to model multiplying a fraction by a fraction.	5.NF.4
Savvas 8 -6	Area of a Rectangle Savvas pp. 353-356	Students find the area of a rectangle using fractions and diagrams.	5.NF.4
Supplemental 8-6	Modeling Multiplication of Fractions with Rectangular Grids MIP Module 9 p. 191-195	Students use models, including rectangular grids, to explore an understanding of multiplication of fractions.	5.NF.4
Savvas 8 -7	Multiply Mixed Numbers Savvas pp. 357-360	Students use models, equations and previously learned strategies to multiply mixed numbers.	5.NF.6
Supplemental 8-7	Multiplying Mixed Numbers Using Partial Products MIP Module 9 p. 201	Students connect their knowledge of multiplying whole numbers using partial products to multiplying mixed numbers.	5.NF.6
Savvas 8-8	Multiplication and Scaling Savvas pp. 361-364	Students compare the size of the product to the size of one factor without multiplying to consider multiplication as scaling.	5.NF.5
Supplemental 8-8	Multiplication as Scaling MIP Module 9 p. 186	Students reason about the size of a product based on whether the factors are greater or less than 1.	5.NF.5

Additional Resources		
5.NF.4, 5.NF.5, 5.NF.6		
Standards Addressed	Lesson	Lesson Description
5.NF.4 5.NF.5	Reasoning with Fractions Ga DOE Constructing Task	Students will use manipulatives and grid paper to investigate what happens to the product when a whole number is multiplied by 1, by a fraction less than 1, and by a mixed number greater than 1.
5.NF.6	Sweet Tart Hearts Ga DOE 3 Act Task	Students work to figure out how many Sweet Tart hearts fill an glass

Assessment Resources			
5.NF.4, 5.NF.5, 5.NF.6			
Type	Location	Assessment Description	Standards Addressed
Formative	MCS Mini	Students solve multiple choice problems that require them to multiply fractions.	5.NF.4 5.NF.5 5.NF.6
Formative	MIP Module 9 p. 196	Students solve a problem using multiplication of fractions.	5.NF.6
Formative	MIP Module 9 p. 202	Students solve a problem using multiplication of mixed numbers.	5.NF.6
Summative	Savvas Topic Assessment TE pp. 375-376	Students will demonstrate how to multiply fractions and mixed numbers. Digital or print form available through Savvas platform. Use MDIS to support student needs through data.	5.NF.4 5.NF.5 5.NF.6
Summative	Savvas Topic Performance Task TE pp. 379-380	Students will use a real-life scenario using a recipe to make dinner.	5.NF.4 5.NF.5 5.NF.6