**FRACTIONS**

Subject: *Divide a Unit Fraction by a Whole Number* Grade: *5*

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| Common Core State Standards |
| **5.NF.7a:** Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for* $\frac{1}{3}$*÷4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that* $\frac{1}{3}$*÷ 4=*$\frac{1}{12}$ *because* $\frac{1}{12}$*x 4 =*$\frac{1}{3}$*.***5.NF.7c:** 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. *For example, how much chocolate will each person get if 3 people share* $\frac{1}{2}$*lb of chocolate equally? How many* $\frac{1}{3}$*-cup servings are in 2 cups of raisins?* |
| Objectives |
| Students will learn to divide any two fractions and mixed numbers, and interpret the process as a method of finding the number of equal (quotient) parts within a fraction. Students will also extend their knowledge of multiplication as this topic deals with multiplying the numerator by the reciprocal of the denominator. |
| Launch Questions |
| **Q.** How does multiplication relate to division of fractions?**Q.** Given two fractions *a* and *b,* where *b<a*, will the value of $\frac{a}{b}$ever be less than 1? |
| Definition/Properties To Know |
| **Reciprocal:** given a number *x,* the reciprocal of *x* is the number attained by dividing *x* by 1;$ \frac{1}{x}$.  |

*Warm-Up Activity:* See “WU 7”

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| Lesson (Introduction to Problem) |
| You are shopping at your local deli and decide to buy a couple of different items for breakfast. All items are measured in kilograms. For breakfast, you decide to buy:* $\frac{3}{4}$kilo of swiss cheese
* $\frac{4}{8}$kilo of monterey jack cheese
* $\frac{2}{3}$kilo of american ham
* $\frac{4}{5}$kilo of black forest ham

You are expecting guests, so you remember to bring your special knife to cut even pieces of each item. **Q.** If you will be having breakfast today with 3 guests, then what fraction of each item would everyone get? 4 guests? 5 guests? Express answers in lowest terms. * To solve these questions, students will have to visualize the process of dividing a fraction of a whole into smaller pieces. Since this is an introduction to the problem, students will need to know how to divide a fraction by a given whole number. This problem will let students know that the resulting value will be less than the fraction they are dividing.
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| Materials (If Needed) |
| * Paper and Pencil
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*Main Project:* See “MP 7”

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| Closure/Expectations |
| Students should feel comfortable multiplying and dividing any two fractions. While they have yet to cover division with fractions and whole numbers, students should be prepared and have an idea of how to approach the final lesson. Finally, students should be able to model the division of fractions process. |