

Grade 5

Unit 3.1	Unit Title Dividing Fractions in the Real World	Lesson 1 of 3	Day 1 - 2
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p>5.NF.7 Apply and extend previous understandings of division ...¹</p> <p>a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. <i>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 $(1/12) \times 4 = 1/3$.</i></p>	<ul style="list-style-type: none"> • Interpret (understand and explain) division of a unit fraction by a non-zero whole number. • Compute the quotient of a unit fraction by a non-zero whole number. • Show the above quotient using a visual model. • Use the relationship between multiplication and division to explain a division problem with unit fractions and whole numbers. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP4 Model with mathematics.</p> <p>SMP8 Look for and express regularity in repeated reasoning.</p>	<ul style="list-style-type: none"> • What is a unit fraction? • What is an example of a real-world problem using division of a unit fraction by a non-zero whole number? <i>OR Create a story context for $(1/3) \div 4$.</i> • How can you interpret the quotient of the above example using a visual model? • How can you use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> • Understand division of whole numbers. • Multiplication of fractions. •¹ Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. <i>But division of a fraction by a fraction is not a requirement at this grade.</i> 	Unit fraction Fraction Quotient Non-zero whole number Visual model	Expect that when you divide the quotient will be smaller. <i>For example, $(1/3) \div 4 = 1/12$, appears the 3 became 12 which is a larger number.</i>	<p>Investigations Snap-ins Unit 4 Session 4A.8 Student pages C44 & 45</p> <p>K-5 Math Resources: Divide a Unit Fraction by a Whole Number</p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to extend their previous understanding of division as they interpret and compute the division of a unit fraction by a non-zero whole number. They will help students to develop a visual model to represent their quotient. Teachers will use the Investigations Snap-in 4A.8 and the K-5 Math Resource. They will also utilize the examples that are included with the standard.	Students will extend their previous understanding of division to interpret and compute division of a unit fraction by a non-zero whole number. They will develop visual models to represent their quotients. Students will use the relationship between multiplication and division to explain a division problem. They will practice using Investigations student pages, samples from the standard and K-5 Math Resources.

Grade 5

Unit 3.1	Unit Title Dividing Fractions in the Real World	Lesson 2 of 3	Day 3 - 5
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p>5.NF.7 Apply and extend previous understandings of division ...¹ (See Lesson 1)</p> <p>b. Interpret division of a whole number by a unit fraction, and compute such quotients. <i>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 $20 \times (1/5) = 4$.</i></p>	<ul style="list-style-type: none"> • Interpret (understand and explain) division of a whole number by a unit fraction. • Compute the quotient of a unit whole number by a unit fraction. • Show the above quotient using a visual model. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP4 Model with mathematics.</p> <p>SMP8 Look for and express regularity in repeated reasoning.</p>	<ul style="list-style-type: none"> • What is a unit fraction? • What is an example of a real-world problem using division of a whole number by a unit fraction? OR <i>create a story context for $4 \div (1/5)$.</i> • How can you interpret the quotient of the above example using a visual model? • How can you use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> • Understand division of unit fractions by non-zero whole numbers. • Represent fractions on a number line. 	Unit fraction Fraction Quotient Non-zero whole number Visual model	Division results in a smaller number. <i>For example, it would be difficult to then understand why $4 \div (1/5) = 20$, when 20 is much larger than 4.</i>	<p>OnCore Lesson 74 (<i>includes examples from 5.NF.7a</i>) & 75 Student pages 147 – 150</p> <p>Investigations Snap-ins Unit 4 Session 4A.9 Student pages C46 – 48</p> <p>K-5 Math Resources Dividing a Whole Number by a Unit Fraction</p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to extend their previous understanding of division as they interpret and compute the division of a whole number by a unit fraction. They will help students develop a visual model of their quotients. Teachers will utilize Oncore Lesson 74, Investigations Snap-in 4A.9, K-5 math Resources as well as the examples included with the standard.	Students will extend their previous understanding of division to interpret and compute division of a whole number by a unit fraction. They will develop visual models to represent their quotients. Students will use the relationship between multiplication and division to explain a division problem. They will practice using OnCore ,Investigations, samples from the standard and K-5 Math Resources.

Grade 5

Unit 3.1	Unit Title Dividing Fractions in the Real World	Lesson 3 of 3	Day 6 - 10
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Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><i>5.NF.7 Apply and extend previous understandings of division ...</i></p> <p><i>c. 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?</i></p>	<ul style="list-style-type: none"> •Use representations (visual models, diagrams, equations, story problems) to solve problems involving whole numbers and unit fractions. •Use reasoning, and the relationship between division and multiplication, to solve division problems involving whole numbers and unit fractions. 	<p>SMP2 Reason abstractly and quantitatively.</p> <p>SMP4 Model with mathematics.</p> <p>SMP8 Look for and express regularity in repeated reasoning.</p>	<ul style="list-style-type: none"> •How can you use a visual fraction model to show <i>how much chocolate each person would get if 3 people share $\frac{1}{2}$ lb of chocolate equally?</i> •How would you represent the following problem with an equation “<i>How many $\frac{1}{3}$-cup servings are in 2 cups of raisins?</i>” •How can you divide fractions by solving a related multiplication problem?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> •Compute division of whole numbers and unit fractions. • Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. <i>But division of a fraction by a fraction is not a requirement at this grade.</i> 	Unit fraction Fraction Quotient Non-zero whole number Visual model Equations		<p>OnCore Lesson 76 & 77 Student pages 151 – 154</p> <p>Investigations Snap-ins Unit 5 Session 4A.10 Student pages C49 – 51, C5 – 60</p> <p>K-5 Math Resources <i>Division of Fractions Word Problems</i></p>

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to solve real world problems involving division of whole numbers and unit fractions. They will help students in their representations of the quotient using visual models, diagrams, equations and story problems. Teachers will utilize the materials provided.	Students will solve real world problems involving division of whole numbers and unit fractions. They will representations the quotient using visual models, diagrams, equations and story problems. Students will practice problem solving using the materials provided by the teacher.