



6th Grade: Dividing Fractions by Fractions

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Math
Grades 6–8



Introduction

This lesson introduces the concept of dividing fractions by fractions after students have already learned to divide fractions by whole numbers. Students will participate in partner and independent activities.

Learning Objectives

[CCSS.MATH.CONTENT.6.NS.A.1](#); Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.

Materials Needed

- Copies of exit ticket

Procedure

Warm-up- REVIEW – Put students into pairs and give them the following problems to complete:

Write a division sentence to solve each problem.

1. 6 gallons of oil are poured equally into 3 bowls. How many gallons of oil are in each bowl?
2. One-third of a six-gallon bucket is poured out. How many gallons are poured out?
3. 1 gallon of oil is poured equally into 3 bowls. How many gallons of oil are in each bowl?
4. One-third of a one-gallon bucket is poured out. How many gallons are poured out?

Write a division sentence and draw a model to solve.

1. 4 gallons of oil are poured equally into 5 bowls. How many gallons of oil are in each bowl?
2. One-fifth of a 4-gallon bucket is poured out. How much is poured out?

After a few minutes, call on some of the groups to share their answers. Record the correct answers on the board.

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1. After this review of dividing whole numbers by a fraction, emphasize to students that dividing by 4 is the same as multiplying by $\frac{1}{4}$ and that dividing by 3 is the same as multiplying by $\frac{1}{3}$, etc.
2. Next, move on to an example to help students understand when dividing by like units. Do the following with the students.
 - $9 \div 3 = \underline{\quad}$
 - 9 ones \div 3 ones = $\underline{\quad}$
 - 9 tens \div 3 tens = $\underline{\quad}$
 - 9 tenths \div 3 tenths = $\underline{\quad}$
 - 9 fourths \div 3 fourths = $\underline{\quad}$

Now, display the following problem:

• $9/5 \div 3/5 = \underline{\quad}$

Then, write it in unit form:

• 9 fifths \div 3 fifths = $\underline{\quad}$

3. Put students in pairs and have them complete the following problem set:

• $9/4 \div 3/4$, $7/3 \div 2/3$, $4/5 \div 1/5$, $10/3 \div 2/3$

For each one, they should rewrite the problem in unit form.

When the pairs of students are finished with those problems, go over them with the whole class, allowing groups to come and share their answers.

Evaluation

For a formative assessment, have students complete the following exit ticket.

Rewrite each problem in unit form. Then write the answer in unit form and standard form.

• $10/3 \div 2/3$, $12/7 \div 12/7$, $8/5 \div 3/5$