# Divide Mixed Numbers

Lesson 2-4

Name: _____ Date: _____ Class: _____

## Key Vocabulary

Level 1 support

Picture first, then the word, then a plain-language meaning. Say each word out loud.

*2 1/3 means 2 wholes and 1/3 more — picture 2 full circles and 1/3 of another*

### Mixed Number

A whole number plus a fraction, like 2 1/2.

*7/3 is improper because 7 > 3. It equals 2 1/3 as a mixed number.*

### Improper Fraction

A fraction where the top is bigger than or equal to the bottom, like 7/4.

*2 1/3 → multiply 2 × 3 = 6, add 1 → 7/3. Same value, different form.*

### Convert

To change a number to a new form but keep the same value.

*8/6: GCF is 2 → 8÷2 / 6÷2 = 4/3 = 1 1/3*

### Simplify

To make a fraction smaller using the same parts, like 2/4 = 1/2.

*The reciprocal of 3/4 is 4/3. To divide by 3/4, multiply by 4/3.*

### Reciprocal

A fraction turned upside down. You use it in keep-change-flip.

## Key Ideas & Notes

- Agent Chen is mapping a suspect's route.
- The total distance is 3 1/2 miles, and each segment between landmarks is 1/4 mile.
- She needs to know how many segments are on the route to place surveillance cameras at every landmark.
- Convert each mixed number to an improper fraction, then use Keep, Change, Flip to divide.

### Think About It

- What is the total distance of the route?
- How long is each segment?
- Will the number of segments be more or less than 3?

**My Notes**

## Guided Examples

### Example 1

**What is 1 1/2 ÷ 3/4?**

**Solution:** 1 1/2 = 3/2. Then 3/2 ÷ 3/4 = 3/2 × 4/3 = 12/6 = 2.

**Answer:** A. 2

### Example 2

**Convert 3 2/5 to an improper fraction.**

**Solution:** 3 × 5 = 15, then 15 + 2 = 17. So 3 2/5 = 17/5.

**Answer:** A. 17/5

### Example 3

**What is 2 1/4 ÷ 3/4?**

**Solution:** 2 1/4 = 9/4. Then 9/4 ÷ 3/4 = 9/4 × 4/3 = 36/12 = 3.

**Answer:** A. 3

## Write About the Math

The Writing Revolution

I can explain my steps using the words mixed number, improper fraction, convert, reciprocal, and simplify.

### 1. Kernel Sentence

subject + verb

**Model:** Mixed Number is a whole number plus a fraction, like 2 1/2.
*Número mixto es un número entero más una fracción, como 2 1/2.*

**Write a kernel sentence about mixed number. Use a subject and a verb.**
*Escribe una oración base sobre número mixto. Usa un sujeto y un verbo.*

### 2. Sentence Expansion

because · but · so

**Kernel:** Mixed Number matters in math
*Número mixto importa en matemáticas*

Expand the kernel three ways. Add a reason, a contrast, and a result.

**because** *porque*

**Mixed Number matters in math because ____.**
*Número mixto importa en matemáticas porque ____.*

**but** *pero*

**Mixed Number matters in math, but ____.**
*Número mixto importa en matemáticas, pero ____.*

**so** *entonces*

**Mixed Number matters in math, so ____.**
*Número mixto importa en matemáticas, entonces ____.*

## 3. Sentence Types

**4 ways to write a math idea**

**Statement**
***Afirmación***

Tell one true fact about mixed number.
*Di un hecho verdadero sobre mixed number.*

**Mixed number ____.**

---

**Question**
***Pregunta***

Ask a question about mixed number.
*Haz una pregunta sobre mixed number.*

**How does ____ ?**
*¿Cómo ____ ?*

---

**Exclamation**
***Exclamación***

Show excitement about mixed number.
*Muestra entusiasmo sobre mixed number.*

**Wow, ____ !**
*¡Guau, ____ !*

---

**Command**
***Mandato***

Tell a partner what to do with mixed number.
*Dile a un compañero qué hacer con mixed number.*

**First, ____ .**
*Primero, ____ .*

---

## 4. Explain Your Reasoning

**use a sentence starter**

**First I changed ____ into ____.**
*Primero cambié ____ a ____.*

**Then I ____.**
*Luego ____.*

**I would use this when ____.**
*Usaría esto cuando ____.*

---

---

---

## Try It

Solve on your own. Check the answer key when you are done.

**1. What is 3 1/2 ÷ 1/4?**

A. 14

B. 3 1/8

C. 7/8

D. 13/4

Show your work:

**2. A recipe makes 2 1/4 batches of cookies. Each batch uses 3/4 cup of butter. How many cups of butter are needed in total?**

A. 3 cups

B. 1 1/2 cups

C. 2 cups

D. 6 cups

Show your work:

### Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

**A detective has a rope that is 5 1/4 feet long. She needs to cut it into pieces that are each 3/4 foot for tying evidence tags. How many pieces can she cut? Write the equation, show each step (convert, keep-change-flip, multiply, simplify), and verify your answer.**

*Sentence starter: First I convert 5 1/4 to ____. Then I use KCF: ____ × ____ = ____. The answer is ____ pieces. I can verify because ____ × 3/4 = 5 1/4.*

Show your work:

## Reflect — Exit Ticket

**What is 2 2/3 ÷ 2/3?**

A. 4

B. 2/3

C. 8/3

D. 1 7/9

Your answer:

## Answer Key & Teacher Guide

1. **Try It 1:** A. 14 — *3 1/2 = 7/2. Then 7/2 ÷ 1/4 = 7/2 × 4/1 = 28/2 = 14.*
2. **Try It 2:** A. 3 cups — *This is multiplication: 2 1/4 × 3/4 = 9/4 × 3/4 = 27/16. Wait — re-read: we need 2 1/4 batches at 3/4 cup each, but the question for division practice should be: if you have 2 1/4 cups and each batch needs 3/4 cup, how many batches? 2 1/4 ÷ 3/4 = 9/4 × 4/3 = 36/12 = 3.*
3. **Exit Ticket:** A. 4 — *2 2/3 = 8/3. Then 8/3 ÷ 2/3 = 8/3 × 3/2 = 24/6 = 4.*

### Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Mixed Number is a whole number plus a fraction, like 2 1/2.
- **Expansion:** *because* gives a reason, *but* shows a contrast or exception, *so* shows a result. Answers vary; each must keep the kernel idea and add the correct kind of detail.
- **Sentence types:** Statement ends with a period, question with "?", exclamation with "!", and a command starts with an action verb (a "bossy" verb).