Interpret Division of Fractions

Flagship

Lesson 2-1-flagship

Name: _____ Date: _____ Class: _____

EVIDENCE LAB MISSION

The Fraction Vault

You are the lead forensic analyst at the Reyes Detective Agency. A 3-foot strip of evidence tape must be cut into exact 1/4-foot sections before it can be logged — and the vault that holds the case file only opens once you know how many pieces that makes. Interpret fraction division and crack the case.

Key Vocabulary

Level 1 support

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

In 3 ÷ 1/4 = 12, the dividend is 3 — it is the total being split

Dividend

The number you are splitting up in a division problem.

In 3 ÷ 1/4 = 12, the divisor is 1/4 — it is the size of each piece

Divisor

The number you split by in a division problem.

In 3 ÷ 1/4 = 12, the quotient is 12 — there are 12 quarter-size pieces in 3

Quotient

The answer when you divide.

The reciprocal of 1/4 is 4/1 = 4. Multiplying by the reciprocal gives the same result as dividing.

Reciprocal

A fraction turned upside down.

1/2, 1/3, 1/4, 1/5 — each represents one equal part of a whole

Unit fraction

A fraction with 1 on top, like 1/4.

Key Ideas & Notes

- Agent Reyes finds a 3-foot strip of tape at the crime scene.
- The lab needs the tape cut into 1/4-foot sections for analysis.
- How many sections can be made?
- The answer cracks the code to the locked evidence vault.
- Use the bar model to see how many 1/4-size pieces fit into 3 wholes.

Think About It

- What total length is being divided?
- What is the size of each section?
- Will the answer be greater than or less than 3?

My Notes

Guided Examples

Example 1

What does 3 ÷ 1/4 mean?

Solution: 3 ÷ 1/4 asks: how many 1/4-size pieces fit into 3? The answer is 12, because each whole has 4 fourths, and 3 × 4 = 12.

Answer: A. How many 1/4-size pieces fit into 3

Example 2

Which expression means 'how many 1/3-size pieces are in 2'?

Solution: Finding how many 1/3-size pieces fit into 2 is represented by 2 ÷ 1/3. The answer is 6.

Answer: A. 2 ÷ 1/3

Example 3

A rope is 4 feet long. How many 1/2-foot pieces can be cut from it?

Solution: 4 ÷ 1/2 = 4 × 2 = 8 pieces. Each whole foot contains 2 halves, and 4 × 2 = 8.

Answer: A. 8 pieces

Write About the Math

The Writing Revolution

I can explain a fraction division using the words dividend, divisor, quotient, reciprocal, and unit fraction.

1. Kernel Sentence

subject + verb

Model: Dividend is the number you are splitting up in a division problem.
Dividendo es el número que estás repartiendo en una división.

Write a kernel sentence about dividend. Use a subject and a verb.
Escribe una oración base sobre dividendo. Usa un sujeto y un verbo.

2. Sentence Expansion

because · but · so

Kernel: Dividend matters in math
Dividendo importa en matemáticas

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

because *porque*	**Dividend matters in math because ____.** *Dividendo importa en matemáticas porque ____.*
but *pero*	**Dividend matters in math, but ____.** *Dividendo importa en matemáticas, pero ____.*
so *entonces*	**Dividend matters in math, so ____.** *Dividendo importa en matemáticas, entonces ____.*

3. Sentence Types

4 ways to write a math idea

Statement
Afirmación

Tell one true fact about dividend.
Di un hecho verdadero sobre dividend.

Dividend ____.

Question
Pregunta

Ask a question about dividend.
Haz una pregunta sobre dividend.

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about dividend.
Muestra entusiasmo sobre dividend.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

Tell a partner what to do with dividend.
Dile a un compañero qué hacer con dividend.

First, ____ .
Primero, ____ .

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4. Explain Your Reasoning

use a sentence starter

I know ____ because ____.
Sé que ____ porque ____.

First I ____, then I ____.
Primero ____, luego ____.

This is important because ____.
Esto es importante porque ____.

Try It

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

1. What is 6 ÷ 1/5?

A. 30

B. 6/5

C. 5/6

D. 1

Show your work:

2. A shelf is 5 feet long. Books are each 1/4 foot wide. How many books fit on the shelf? Which expression represents this?

A. 5 ÷ 1/4 = 20 books

B. 5 × 1/4 = 1 1/4 books

C. 1/4 ÷ 5 = 1/20 book

D. 5 + 1/4 = 5 1/4 books

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

Dividing 6 by 1/2 gives 12, but dividing 6 by 2 gives 3. How can dividing by a smaller number (1/2) give a bigger answer than dividing by a larger number (2)? Explain using a real-world example.

Sentence starter: When I divide 6 by 2, I am ____. When I divide 6 by 1/2, I am ____. The answer is bigger because ____.

Show your work:

Reflect — Exit Ticket

What does 5 ÷ 1/4 mean, and what is the quotient?

A. How many 1/4-size pieces fit into 5; quotient is 20

B. 5 groups of 1/4; quotient is 5/4

C. 1/4 of 5; quotient is 5/4

D. 5 minus 1/4; quotient is 4 3/4

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. 30 — *6 ÷ 1/5 means how many 1/5-size pieces fit into 6. Each whole has 5 fifths, so 6 × 5 = 30.*
2. **Try It 2:** A. 5 ÷ 1/4 = 20 books — *You are finding how many 1/4-foot pieces fit into 5 feet, which is 5 ÷ 1/4 = 5 × 4 = 20 books.*
3. **Exit Ticket:** A. How many 1/4-size pieces fit into 5; quotient is 20 — *5 ÷ 1/4 means 'how many 1/4-size pieces fit into 5.' Since each whole has 4 fourths, 5 × 4 = 20.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Dividend is the number you are splitting up in a division problem.
- **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).