

# Interpret Division of Fractions

## Lesson 2-1

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: \_\_\_\_\_

## Key Vocabulary

Level 1 support

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

*In  $3 \div 1/4 = 12$ , the dividend is 3 — it is the total being split*

### Dividend

The number you are splitting up in a division problem.

*In  $3 \div 1/4 = 12$ , the divisor is  $1/4$  — it is the size of each piece*

### Divisor

The number you split by in a division problem.

*In  $3 \div 1/4 = 12$ , 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  $\frac{1}{4}$ -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  $\frac{1}{4}$ -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

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## Guided Examples

### Example 1

**What does  $3 \div 1/4$  mean?**

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

**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  $2 \div 1/3$ . The answer is 6.

**Answer:** A.  $2 \div 1/3$

### Example 3

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

**Solution:**  $4 \div 1/2 = 4 \times 2 = 8$  pieces. Each whole foot contains 2 halves, and  $4 \times 2 = 8$ .

**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.*

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### 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 \_\_\_\_.*

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**but**  
*pero*

**Dividend matters in math, but \_\_\_\_.**

*Dividendo importa en matemáticas, pero \_\_\_\_.*

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**so**  
*entonces*

**Dividend matters in math, so \_\_\_\_.**

*Dividendo importa en matemáticas, entonces \_\_\_\_.*

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### 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** \_\_\_\_.

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**Question**  
*Pregunta*

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

**How does** \_\_\_\_ ?

*¿Cómo* \_\_\_\_ ?

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**Exclamation**  
*Exclamación*

Show excitement about dividend.  
*Muestra entusiasmo sobre dividend.*

**Wow,** \_\_\_\_ !

*¡Guau,* \_\_\_\_ !

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**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

**Dividing by a fraction means** \_\_\_\_.

*Dividir entre una fracción significa* \_\_\_\_.

**My model shows** \_\_\_\_.

*Mi modelo muestra* \_\_\_\_.

**In real life this is like** \_\_\_\_.

*En la vida real esto es como* \_\_\_\_.

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## Try It

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

**1. What is  $6 \div 1/5$ ?**

- A. 30
- B.  $6/5$
- C.  $5/6$
- D. 1

Show your work:

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**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.  $5 \div 1/4 = 20$  books
- B.  $5 \times 1/4 = 1 \frac{1}{4}$  books
- C.  $1/4 \div 5 = 1/20$  book
- D.  $5 + 1/4 = 5 \frac{1}{4}$  books

Show your work:

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## Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

**Dividing 6 by  $\frac{1}{2}$  gives 12, but dividing 6 by 2 gives 3. How can dividing by a smaller number ( $\frac{1}{2}$ ) 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  $\frac{1}{2}$ , I am \_\_\_\_\_. The answer is bigger because \_\_\_\_\_.*

Show your work:

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## Reflect — Exit Ticket

**What does  $5 \div \frac{1}{4}$  mean, and what is the quotient?**

- A. How many  $\frac{1}{4}$ -size pieces fit into 5; quotient is 20
- B. 5 groups of  $\frac{1}{4}$ ; quotient is  $\frac{5}{4}$
- C.  $\frac{1}{4}$  of 5; quotient is  $\frac{5}{4}$
- D. 5 minus  $\frac{1}{4}$ ; quotient is  $4 \frac{3}{4}$

Your answer:

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## Answer Key & Teacher Guide

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

### 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).