

Divide Whole Numbers by Fractions

Lesson 2-2

Name: _____

Date: _____

Class: _____

Key Vocabulary

Level 1 support

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

4 is a whole number; as a fraction it is $4/1$

Whole Number

A counting number with no fraction or decimal, like 0, 1, 2, 3.

$1/2$ means 1 out of 2 equal parts — like cutting a sandwich in half and taking one piece

Fraction

A number that shows part of a whole, like $3/4$.

The reciprocal of $2/3$ is $3/2$. Flip the fraction to divide: $6 \div 2/3 = 6 \times 3/2$

Reciprocal

A fraction turned upside down.

$6 \div 1/3 \rightarrow$ Keep 6, Change \div to \times , Flip $1/3$ to $3/1 \rightarrow 6 \times 3 = 18$

Keep, Change, Flip

A way to divide fractions: keep the first, change \div to \times , flip the second.

In $4 \div 1/2 = 8$, the quotient is 8

Quotient

The answer when you divide.

Key Ideas & Notes

- Agent Park has 4 pounds of evidence powder.
- Each testing bag holds exactly $\frac{1}{2}$ pound.
- He needs to prepare as many testing bags as possible before the lab deadline.
- How many bags can he fill?
- Use the number line to show how many $\frac{1}{2}$ -size jumps fit into 4.

Think About It

- How much total powder does Agent Park have?
- How much goes into each bag?
- Will the number of bags be more or less than 4?

My Notes

Guided Examples

Example 1

What is $6 \div 1/3$?

Solution: $6 \div 1/3 = 6 \times 3/1 = 18$. There are 18 thirds in 6 wholes.

Answer: A. 18

Example 2

What is $3 \div 1/5$?

Solution: $3 \div 1/5 = 3 \times 5/1 = 15$. There are 15 fifths in 3 wholes.

Answer: A. 15

Example 3

What is $10 \div 1/4$?

Solution: $10 \div 1/4 = 10 \times 4/1 = 40$. There are 40 quarter-size pieces in 10 wholes.

Answer: A. 40

Write About the Math

The Writing Revolution

I can explain my steps using the words fraction, reciprocal, quotient, and Keep, Change, Flip.

1. Kernel Sentence subject + verb

Model: Whole Number is a counting number with no fraction or decimal, like 0, 1, 2, 3.
Número entero es un número de contar sin fracción ni decimal, como 0, 1, 2, 3.

Write a kernel sentence about whole number. Use a subject and a verb.

Escribe una oración base sobre número entero. Usa un sujeto y un verbo.

2. Sentence Expansion because · but · so

Kernel: Whole Number matters in math
Número entero importa en matemáticas

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

because
porque

Whole Number matters in math because ____.
Número entero importa en matemáticas porque ____.

but
pero

Whole Number matters in math, but ____.
Número entero importa en matemáticas, pero ____.

so
entonces

Whole Number matters in math, so ____.
Número entero importa en matemáticas, entonces ____.

3. Sentence Types 4 ways to write a math idea

Statement
Afirmación

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

Whole number ____.

Question
Pregunta

Ask a question about whole number.
Haz una pregunta sobre whole number.

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about whole number.
Muestra entusiasmo sobre whole number.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

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

First, ____ .
Primero, ____ .

4. Explain Your Reasoning use a sentence starter

____ fits into ____ a total of ____ times.
____ cabe en ____ un total de ____ veces.

I know because ____ .
Lo sé porque ____ .

This is useful when ____ .
Esto es útil cuando ____ .

Try It

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

1. What is $5 \div 1/2$?

- A. 10
- B. $5/2$
- C. 2.5
- D. 7

Show your work:

2. What is $6 \div 2/3$?

- A. 9
- B. 4
- C. 12
- D. $2/18$

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A pizza shop has 8 whole pizzas. Each serving is $\frac{2}{3}$ of a pizza. How many servings can they make? Write and solve an equation, then explain why the answer is greater than 8.

Sentence starter: The equation is $8 \div \frac{2}{3} = \underline{\quad}$. Using Keep, Change, Flip: $8 \times \frac{3}{2} = \underline{\quad}$. The answer is greater than 8 because $\underline{\quad}$.

Show your work:

Reflect — Exit Ticket

What is $9 \div \frac{1}{3}$?

- A. 27
- B. 3
- C. $\frac{9}{3}$
- D. $\frac{1}{27}$

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. $10 - 5 \div 1/2 = 5 \times 2/1 = 10$. *There are 10 halves in 5 wholes.*
2. **Try It 2:** A. $9 - 6 \div 2/3 = 6 \times 3/2 = 18/2 = 9$. *Keep 6, change \div to \times , flip $2/3$ to $3/2$.*
3. **Exit Ticket:** A. $27 - 9 \div 1/3 = 9 \times 3/1 = 27$. *There are 27 thirds in 9 wholes.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Whole Number is a counting number with no fraction or decimal, like 0, 1, 2, 3.
- **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).