

Compare Ratios

Lesson 3-5

Name: _____

Date: _____

Class: _____

Key Vocabulary

Level 1 support

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

\$3 per 1 pound → unit rate is \$3/lb

Unit rate

A rate for just 1 of something, like cost for 1 item.

4:6 and 2:3 are equivalent (both simplify to 2:3)

Equivalent ratio

Two ratios that mean the same thing.

3:4 vs. 2:5 – which has more of the first ingredient per unit?

Compare

To look at ratios and see which is bigger, smaller, or equal.

8:12 → divide both by 4 → 2:3

Simplify

To make a ratio as small as possible while keeping the same comparison.

To compare $\frac{3}{5}$ and $\frac{4}{7}$, use LCD 35: $\frac{21}{35}$ vs $\frac{20}{35}$

Common denominator

A bottom number that two fractions can share so you can compare them.

Key Ideas & Notes

- Chef Academy is holding a Flavor Challenge!
- Chef Reyes's hot cocoa recipe uses 3 tablespoons of cocoa for every 5 ounces of milk.
- Chef Tran's recipe uses 4 tablespoons of cocoa for every 7 ounces of milk.
- The students need to figure out whose hot cocoa is more chocolatey.
- Build equivalent ratios for each chef's recipe so you can compare them fairly. Chef Reyes: 3 tbsp cocoa per 5 oz milk. Chef Tran: 4 tbsp cocoa per 7 oz milk.

Think About It

- What quantities are being compared in each recipe?
- Can you tell just by looking which recipe has more cocoa per ounce?
- What would make the comparison fair?

My Notes

Guided Examples

Example 1

Chef A uses 2 cups of cheese for every 8 crackers. Chef B uses 3 cups of cheese for every 9 crackers. Who uses more cheese per cracker?

Solution: Chef A: $2 \div 8 = 0.25$ cups per cracker. Chef B: $3 \div 9 \approx 0.33$ cups per cracker. Chef B uses more cheese per cracker.

Answer: A. Chef B

Example 2

Which ratio is greater: 3:4 or 5:8?

Solution: Convert to the same denominator: $3:4 = 6:8$. Since $6:8 > 5:8$, the ratio 3:4 is greater.

Answer: A. 3:4

Example 3

Which lemonade recipe is more lemony? Recipe A: 2 lemons for 6 cups of water. Recipe B: 3 lemons for 7 cups of water.

Solution: Recipe A: $2 \div 6 \approx 0.33$ lemons per cup. Recipe B: $3 \div 7 \approx 0.43$ lemons per cup. Since $0.43 > 0.33$, Recipe B is more lemony.

Answer: A. Recipe B

Write About the Math

The Writing Revolution

I can explain my comparison using the words unit rate, equivalent ratio, compare, and common denominator.

1. Kernel Sentence subject + verb

Model: Compare is to look at ratios and see which is bigger, smaller, or equal.

Comparar es mirar razones para ver cuál es mayor, menor o igual.

Write a kernel sentence about compare. Use a subject and a verb.

Escribe una oración base sobre comparar. Usa un sujeto y un verbo.

2. Sentence Expansion because · but · so

Kernel: Compare matters in math

Comparar importa en matemáticas

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

because
porque

Compare matters in math because ____.

Comparar importa en matemáticas porque ____.

but
pero

Compare matters in math, but ____.

Comparar importa en matemáticas, pero ____.

so
entonces

Compare matters in math, so ____.

Comparar importa en matemáticas, entonces ____.

3. Sentence Types 4 ways to write a math idea

Statement
Afirmación

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

Compare ____.

Question
Pregunta

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

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about compare.
Muestra entusiasmo sobre compare.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

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

First, ____ .
Primero, ____ .

4. Explain Your Reasoning use a sentence starter

I compared by ____ .

Comparé al ____ .

____ **is bigger because** ____ .

____ *es mayor porque* ____ .

The better deal is ____ **because** ____ .

La mejor oferta es ____ *porque* ____ .

Try It

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

1. Store A sells 3 mangoes for \$6. Store B sells 5 mangoes for \$9. Which store offers a better price per mango?

- A. Store B
- B. Store A
- C. Same price
- D. Cannot determine

Show your work:

2. Store A sells 5 notebooks for \$12. Store B sells 8 notebooks for \$20. Without calculating, a student says Store B must be cheaper because you get more notebooks. Is the student's reasoning valid? Find the unit rates to prove your answer.

Show your work:

Stretch Your Thinking Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

Find Kai's Mistake — find the error, then write the correct reasoning.

Show your work:

Reflect — Exit Ticket

A bakery sells 4 muffins for \$10 and another bakery sells 6 muffins for \$14. Which bakery has the lower price per muffin?

- A. The second bakery
- B. The first bakery
- C. Same price
- D. Cannot determine

Your answer:

Answer Key & Teacher Guide

- 1. Try It 1:** A. Store B — *Store A: $\$6 \div 3 = \2.00 per mango. Store B: $\$9 \div 5 = \1.80 per mango. Store B has the better (lower) price per mango.*
- 2. Try It 2:** The student's reasoning is not valid — getting more items does not mean a lower price per item. Store A: $\$12 \div 5 = \2.40 per notebook. Store B: $\$20 \div 8 = \2.50 per notebook. Store A is actually cheaper per notebook, even though Store B offers more notebooks per purchase.
- 3. Exit Ticket:** A. The second bakery — *First bakery: $\$10 \div 4 = \2.50 per muffin. Second bakery: $\$14 \div 6 \approx \2.33 per muffin. The second bakery has the lower price.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Compare is to look at ratios and see which is bigger, smaller, or equal.
- **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).