UNIT 3 · STANDARD 6.RP.3

Equivalent Ratios

Lesson 3-4

Name: _____ Date: _____ Class: _____

Key Vocabulary

Level 1 support

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

3 red apples : 5 green apples

Ratio

A way to compare two amounts.

2:3 and 4:6 both mean 2 out of every 3, so 2/3 = 4/6

Equivalent ratios

Two ratios that mean the same thing.

60 miles per 1 hour

Rate

A ratio comparing two amounts with different units, like miles per hour.

2/3 = 4/6

Proportion

A math sentence saying two ratios are equal.

12:18 → divide both by 6 → 2:3

Simplify

To make a ratio smaller while keeping the same comparison.

Key Ideas & Notes

- Chef Montoya is preparing her famous tomato soup for a school banquet.
- Her original recipe serves 8 people, but tonight she needs to serve 32 guests.
- She needs your help to scale the recipe without changing the flavor!
- Chef Montoya's recipe calls for 3 cups of tomatoes for every 2 cups of broth. Complete the ratio table to help her scale the recipe.

Think About It

- What quantities are being compared in the recipe?
- What stays the same when you multiply both ingredients by the same number?
- How many times bigger is 32 than 8?

My Notes

Guided Examples

Example 1

Which ratio is equivalent to 2:5?

Solution: Multiply both parts by 2: 2×2 = 4 and 5×2 = 10, so 4:10 is equivalent to 2:5.

Answer: A. 4:10

Example 2

A recipe uses 4 eggs for every 6 cups of flour. Which ratio is equivalent?

Solution: Divide both by 2: 4÷2 = 2 and 6÷2 = 3. The ratio 2:3 is equivalent to 4:6.

Answer: A. 2:3

Example 3

Which ratio is NOT equivalent to 6:9?

Solution: 6:9 simplifies to 2:3. Check each: 2:3 ✓, 12:18 = 2:3 ✓, 18:27 = 2:3 ✓. But 3:5 does not simplify to 2:3.

Answer: A. 3:5

Write About the Math

The Writing Revolution

I can explain my reasoning using the words equivalent ratios, rate, proportion, and simplify.

1. Kernel Sentence

subject + verb

Model: Ratio is a way to compare two amounts.
Razón es una manera de comparar dos cantidades.

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

2. Sentence Expansion

because · but · so

Kernel: Ratio matters in math
Razón importa en matemáticas

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

because / ***porque***

Ratio matters in math because ____.
Razón importa en matemáticas porque ____.

but / ***pero***

Ratio matters in math, but ____.
Razón importa en matemáticas, pero ____.

so / ***entonces***

Ratio matters in math, so ____.
Razón importa en matemáticas, entonces ____.

3. Sentence Types **4 ways to write a math idea**

Statement
Afirmación

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

Ratio ____.

Question
Pregunta

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

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about ratio.
Muestra entusiasmo sobre ratio.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

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

First, ____ .
Primero, ____ .

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4. Explain Your Reasoning **use a sentence starter**

These ratios are equal because ____.
Estas razones son iguales porque ____.

I checked by ____.
Lo comprobé al ____.

I would scale a recipe by ____.
Ajustaría una receta al ____.

Try It

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

1. Marcus earns $45 for every 3 hours of work. How much does he earn in 8 hours?

A. $120

B. $90

C. $135

D. $105

Show your work:

2. A store sells 3 pens for $2. Another store sells 9 pens for $6. Are these equivalent ratios? If so, prove it using at least two different methods (simplifying, scaling, or cross-multiplying).

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

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

Show your work:

Reflect — Exit Ticket

A store sells 5 notebooks for $8. At this rate, how much would 15 notebooks cost?

A. $24

B. $18

C. $20

D. $40

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. $120 — *Unit rate: $45 ÷ 3 = $15/hour. In 8 hours: $15 × 8 = $120.*
2. **Try It 2:** Yes, they are equivalent. Method 1 (simplify): 9:6 ÷ 3 = 3:2, which matches 3:2. Method 2 (cross-multiply): 3 × 6 = 18 and 2 × 9 = 18. Since both cross products are equal, the ratios are equivalent.
3. **Exit Ticket:** A. $24 — *15 is 3 times 5, so the cost is 3 × $8 = $24. The ratio 5:8 scales to 15:24.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Ratio is a way to compare two amounts.
- **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).