UNIT 3 · STANDARD 6.RP.3

Ratio and Rate Problem Solving

Lesson 3-7

Name: _____ Date: _____ Class: _____

Key Vocabulary

Level 1 support

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

$12 for 4 pounds → dollars per pound

Rate

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

$12 ÷ 4 = $3 per 1 pound

Unit rate

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

60 miles per hour, $5 per ticket

Per

For each one. Example: 5 dollars per book.

Set up → Plan → Solve → Check

Problem solving

Using ratios and rates to find a missing amount.

3/5 = x/20 → x = 12

Proportion

A math sentence saying two ratios are equal. It helps find a missing number.

Key Ideas & Notes

- It's the final day of Chef Academy — the Culinary Competition!
- Teams must solve ratio and rate problems to earn ingredients for their dishes.
- Team 1 needs to figure out how much chicken costs if 3 pounds cost $18.
- Team 2 must calculate how many cupcakes they can frost if they decorate 5 cupcakes every 4 minutes.
- Team 1 knows that 3 pounds of chicken cost $18. Complete the ratio table to find the cost for different amounts, then determine the unit rate.

Think About It

- What two quantities with different units are being compared?
- How could you find the cost of just 1 pound of chicken?
- How could you find the number of cupcakes frosted in 1 minute?

My Notes

Guided Examples

Example 1

A bakery makes 24 cookies in 3 batches. What is the unit rate of cookies per batch?

Solution: Unit rate: 24 cookies ÷ 3 batches = 8 cookies per batch.

Answer: A. 8 cookies per batch

Example 2

Apples cost $5 for 4 pounds. What is the cost per pound?

Solution: Unit rate: $5 ÷ 4 pounds = $1.25 per pound.

Answer: A. $1.25

Example 3

A cyclist rides 36 miles in 3 hours. At the same rate, how far will she ride in 5 hours?

Solution: Unit rate: 36 ÷ 3 = 12 miles per hour. In 5 hours: 12 × 5 = 60 miles.

Answer: A. 60 miles

Write About the Math

The Writing Revolution

I can explain my solution using the words rate, unit rate, per, and proportion.

1. Kernel Sentence

subject + verb

Model: Rate is a ratio comparing two amounts with different units, like miles per hour.
Tasa es una razón que compara dos cantidades con unidades distintas, como millas por hora.

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

_____

_____

2. Sentence Expansion

because · but · so

Kernel: Rate matters in math
Tasa importa en matemáticas

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

because / ***porque***

Rate matters in math because ____.
Tasa importa en matemáticas porque ____.

_____

but / ***pero***

Rate matters in math, but ____.
Tasa importa en matemáticas, pero ____.

_____

so / ***entonces***

Rate matters in math, so ____.
Tasa importa en matemáticas, entonces ____.

_____

3. Sentence Types

4 ways to write a math idea

Statement
Afirmación

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

Rate ____.

Question
Pregunta

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

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about rate.
Muestra entusiasmo sobre rate.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

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

First, ____ .
Primero, ____ .

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4. Explain Your Reasoning

use a sentence starter

My plan was to ____.
Mi plan fue ____.

The rate is ____ per ____.
La tasa es ____ por ____.

Rates matter when ____.
Las tasas importan cuando ____.

Try It

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

1. A car travels 150 miles in 3 hours. A bus travels 200 miles in 5 hours. Which vehicle is faster?

A. The car

B. The bus

C. Same speed

D. Cannot determine

Show your work:

2. A factory makes 240 widgets in 8 hours. Another factory makes 200 widgets in 5 hours. Which factory is faster? If both factories work together for 10 hours, how many total widgets would they produce?

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

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

Show your work:

Reflect — Exit Ticket

A printer prints 30 pages in 5 minutes. At this rate, how many pages will it print in 12 minutes?

A. 72

B. 60

C. 36

D. 42

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. The car *— Car: 150÷3 = 50 mph. Bus: 200÷5 = 40 mph. The car travels faster at 50 mph vs. 40 mph.*
2. **Try It 2:** Factory A: 240 ÷ 8 = 30 widgets/hour. Factory B: 200 ÷ 5 = 40 widgets/hour. Factory B is faster. Together: (30 + 40) × 10 = 70 × 10 = 700 widgets in 10 hours.
3. **Exit Ticket:** A. 72 *— Unit rate: 30 ÷ 5 = 6 pages per minute. In 12 minutes: 6 × 12 = 72 pages.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Rate is a ratio comparing two amounts with different units, like miles per hour.
- **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).