Understand Ratios Flagship

Lesson 3-1-flagship

Name: _____ Date: _____ Class: _____

CHEF ACADEMY MISSION

The Signature Recipe

You just earned your apron at Chef Academy. Head Chef Reyes is trusting you with her signature cookie recipe — 3 cups of flour for every 2 cups of sugar. Before service begins, you must read every recipe like a pro by mastering ratios, or the whole kitchen falls behind.

Key Vocabulary Level 1 support

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

3 cups flour to 2 cups sugar → 3:2

Ratio

A way to compare two amounts, like 3 to 2.

5 eggs vs. 3 eggs — which recipe uses more?

Comparison

Looking at two or more amounts to see how they are related.

3 cups flour : 2 cups sugar (ingredient to ingredient)

Part-to-part

A ratio comparing one part of a group to another part.

3 cups flour out of 5 cups total → 3:5

Part-to-whole

A ratio comparing one part to the whole group.

3 to 2 can be written as 3:2

Colon notation

Writing a ratio with two dots between the numbers, like 3:2.

Key Ideas & Notes

- Welcome to Chef Academy!
- Head Chef Reyes is teaching new students how to read recipes like a pro.
- Her signature cookie recipe calls for 3 cups of flour for every 2 cups of sugar.
- Before the students can start baking, they need to understand how these ingredient amounts compare to each other.
- Chef Reyes wrote several comparisons on the board. Sort them into two groups: statements that ARE ratios and statements that are NOT ratios.

Think About It

- What two ingredients are being compared in the recipe?
- How could you describe the relationship between flour and sugar?
- Is the amount of flour more than, less than, or equal to the amount of sugar?

My Notes

Guided Examples

Example 1

A recipe uses 4 cups of milk and 1 cup of cream. What is the ratio of milk to cream?

Solution: A ratio compares quantities in the order given. Milk to cream = 4 to 1, or 4:1.

Answer: A. 4:1

Example 2

Chef Reyes uses 6 strawberries and 2 bananas in a smoothie. What is the part-to-whole ratio of bananas to total fruit?

Solution: Total fruit = 6 + 2 = 8. The part-to-whole ratio of bananas to total fruit is 2:8.

Answer: A. 2:8

Example 3

In a class of 30 students, 18 are girls. What is the part-to-part ratio of boys to girls?

Solution: Boys = 30 − 18 = 12. Part-to-part ratio of boys to girls = 12:18. (Order matters!)

Answer: A. 12:18

Write About the Math

The Writing Revolution

I can explain a comparison using the words ratio, part-to-part, part-to-whole, and colon notation.

1. Kernel Sentence

subject + verb

Model: Ratio is a way to compare two amounts, like 3 to 2.
Razón es una manera de comparar dos cantidades, como 3 a 2.

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

I know ____ because ____.
Sé que ____ porque ____.

First I ____, then I ____.
Primero ____, luego ____.

This is important because ____.
Esto es importante porque ____.

Try It

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

1. A parking lot has 10 cars and 6 trucks. What is the part-to-whole ratio of trucks to total vehicles?

A. 6:16

B. 10:6

C. 6:10

D. 16:6

Show your work:

2. A bag of marbles has 8 red, 6 blue, and 4 green marbles. Write three different ratios using these quantities: one part-to-part ratio, one part-to-whole ratio, and explain the difference.

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

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

Show your work:

Reflect — Exit Ticket

A bag of trail mix contains 8 peanuts and 5 raisins. What is the ratio of raisins to total pieces?

A. 5:13

B. 8:5

C. 5:8

D. 13:5

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. 6:16 — *Total vehicles = 10 + 6 = 16. The ratio of trucks to total is 6:16.*
2. **Try It 2:** Part-to-part: red to blue = 8:6. Part-to-whole: green to total = 4:18. The difference is that part-to-part compares two individual groups, while part-to-whole compares one group to the entire collection (8 + 6 + 4 = 18).
3. **Exit Ticket:** A. 5:13 — *Total pieces = 8 + 5 = 13. The ratio of raisins to total is 5:13.*

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, like 3 to 2.
- **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).