UNIT 3 · STANDARD 6.RP.3A

Graph Ratio Tables

Lesson 3-3

Name: _____ Date: _____ Class: _____

Key Vocabulary Level 1 support

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

A + shape made by two number lines crossing at the center point (0, 0)

Coordinate plane

A grid with a line going across and a line going up to plot points.

(3, 6) means go right 3, up 6

Ordered pair

Two numbers (x, y) that tell where a point is on a grid.

(1,2), (2,4), (3,6) all line up

Linear pattern

Points that make a straight line on a grid.

A straight line from (0,0) through (2,6) and (4,12)

Proportional

Two amounts that grow together at the same rate.

The starting corner of the grid at (0, 0)

Origin

The point (0, 0) where the two grid lines cross.

Key Ideas & Notes

- Chef Academy students are tracking how much chocolate sauce they need for different numbers of sundaes.
- They know the recipe uses 2 ounces of sauce for every 1 sundae.
- Chef Reyes challenges them to plot the ratio table values on a coordinate grid to see the pattern.
- Will the points form a straight line?
- The ratio table shows sundaes to ounces of chocolate sauce (1 sundae = 2 oz). Plot each ordered pair on the coordinate grid.

Think About It

- What two quantities could we put on the x-axis and y-axis?
- What pattern do you see in the ratio table values?
- What do you think the graph will look like?

My Notes

Guided Examples

Example 1

A ratio table shows (2, 6), (4, 12), and (6, 18). Which ordered pair comes next if the pattern continues?

Solution: The pattern adds 2 to x and 6 to y each time. After (6, 18): x = 6+2 = 8, y = 18+6 = 24. The next point is (8, 24).

Answer: A. (8, 24)

Example 2

When you graph equivalent ratios, the points will always form what shape?

Solution: Equivalent ratios are proportional, so their graph is always a straight line that passes through the origin (0, 0).

Answer: A. A straight line through the origin

Example 3

A ratio table shows (2, 8), (3, 12), and (5, 20). What is the y-value when x = 7?

Solution: The ratio is y/x = 8/2 = 4. For every x, y = 4x. When x = 7: y = 4 × 7 = 28.

Answer: A. 28

Write About the Math

The Writing Revolution

I can explain my graph using the words coordinate plane, ordered pair, origin, and proportional.

1. Kernel Sentence

subject + verb

Model: Coordinate plane is a grid with a line going across and a line going up to plot points.
Plano cartesiano es una cuadrícula con una línea horizontal y una vertical para marcar puntos.

Write a kernel sentence about coordinate plane. Use a subject and a verb.
Escribe una oración base sobre plano cartesiano. Usa un sujeto y un verbo.

_____

_____

2. Sentence Expansion

because · but · so

Kernel: Coordinate plane matters in math
Plano cartesiano importa en matemáticas

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

because / ***porque***

Coordinate plane matters in math because ____.
Plano cartesiano importa en matemáticas porque ____.

_____

but / ***pero***

Coordinate plane matters in math, but ____.
Plano cartesiano importa en matemáticas, pero ____.

_____

so / ***entonces***

Coordinate plane matters in math, so ____.
Plano cartesiano importa en matemáticas, entonces ____.

_____

3. Sentence Types

4 ways to write a math idea

Statement
Afirmación

Tell one true fact about coordinate plane.
Di un hecho verdadero sobre coordinate plane.

Coordinate plane ____.

Question
Pregunta

Ask a question about coordinate plane.
Haz una pregunta sobre coordinate plane.

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about coordinate plane.
Muestra entusiasmo sobre coordinate plane.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

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

First, ____ .
Primero, ____ .

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4. Explain Your Reasoning

use a sentence starter

The points make a ____.
Los puntos forman una ____.

As ____ goes up, ____ goes up by ____.
Cuando ____ sube, ____ sube en ____.

The graph shows ____.
La gráfica muestra ____.

Try It

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

1. Two students graph ratio tables. Student A plots (1,2), (2,4), (3,6). Student B plots (1,3), (2,6), (3,9). Whose line is steeper?

A. Student B

B. Student A

C. Same steepness

D. Cannot tell

Show your work:

2. A student plots the points (1, 3), (2, 6), (3, 9), and (4, 15) from a ratio table. She says they form a straight line because they go up. Is she correct? Explain how to check.

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

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

Show your work:

Reflect — Exit Ticket

A ratio table shows cups of rice to cups of water: (1, 2), (2, 4), (3, 6). If you plot these points, the line passes through which point?

A. (5, 10)

B. (4, 6)

C. (5, 8)

D. (6, 10)

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. Student B — *Student A's ratio is 1:2 (y goes up 2 for each 1 in x). Student B's ratio is 1:3 (y goes up 3 for each 1 in x). A higher rate of change means a steeper line, so Student B's is steeper.*
2. **Try It 2:** She is not correct. While the first three points follow the pattern y = 3x (3, 6, 9), the fourth point should be (4, 12), not (4, 15). If you plot all four points, (4, 15) would not land on the line through the others. The ratio 4:15 does not simplify to 1:3 like the others.
3. **Exit Ticket:** A. (5, 10) — *The ratio is 1:2, so for 5 cups of rice you need 5 × 2 = 10 cups of water. The point (5, 10) continues the pattern.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Coordinate plane is a grid with a line going across and a line going up to plot points.
- **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).