November 6, 2018
Periods 1,2,4,6

Warm Up - remove pages 167-168 from your packet and place on desk.

Class Work - pgs. 173-174 introduce together, finish with table partner work. Pg. 175 partner work and go over together.

Homework - pgs. 177-178 #s 7-15 all
Prepoare for Lesson 7.1 Quiz tomorrow.

ESSENTIAL QUESTION How can you represent real-world problems involving ratios and rates with tables and graphs?

EXPLORE ACTIVITY 1 Real World FL 6.RP.1.3, 6.RP.1.3a

Finding Ratios from Tables

Students in Mr. Webster's science classes are doing an experiment that requires 250 milliliters of distilled water for every 5 milliliters of ammonia. The table shows the amount of distilled water needed for various amounts of ammonia.

Ammonia (mL)	2	3	3.5	4	5
Distilled water (mL)	100	150	175	200	250

A Use the numbers in the first column of the table to write a ratio of distilled water to ammonia. 50 to 1

B How much distilled water is used for 1 milliliter of ammonia? 50

Use your answer to write another ratio of distilled water to ammonia. 600 to 12

C The ratios in A and B are equivalent/not equivalent.

D How can you use your answer to B to find the amount of distilled water to add to a given amount of ammonia?

multiply by 50

E Complete the table. What are the equivalent ratios shown in the table?

$$\frac{100}{2} = \frac{\square}{3} = \frac{\square}{3.5} = \frac{200}{\square} = \frac{250}{5}$$

Math Talk Mathematical Practices

Is the relationship between the amount of ammonia and the amount of distilled water additive or multiplicative? Explain.

Reflect

1. **Look for a Pattern** When the amount of ammonia increases by 1 milliliter, the amount of distilled water increases by _____ milliliters. So 6 milliliters of ammonia requires _____ milliliters of distilled water.

x
y

1/50

(x, y)

EXPLORE ACTIVITY 2 Real World FL 6.RP.1.3a

Graphing with Ratios

A Copy the table from Explore Activity 1 that shows the amounts of ammonia and distilled water.

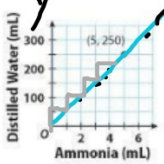
Ammonia (mL)	2	3	3.5	4	5
Distilled water (mL)	100	150	175	200	250

B Write the information in the table as ordered pairs. Use the amount of ammonia as the *x*-coordinates and the amount of distilled water as the *y*-coordinates.

(2, 100) (3, 150), (3.5, 175), (4, 200), (5, 250)

Graph the ordered pairs. Because fractions and decimals can represent amounts of chemicals, connect the points.

Describe your graph. _____



C For each ordered pair that you graphed, write the ratio of the *y*-coordinate to the *x*-coordinate. 50 to 1

D The ratio of distilled water to ammonia is $\frac{50}{1}$. How are the ratios in **C** related to this ratio? _____

E The point (2.5, 125) is on the graph but not in the table. The ratio of the *y*-coordinate to the *x*-coordinate is _____ How is this ratio related to the ratios in **C** and **D**? _____

2.5 milliliters of ammonia requires _____ milliliters of distilled water.

F **Conjecture** What do you think is true for every point on the graph?

same ratio
50 to 1

Reflect

2. **Communicate Mathematical Ideas** How can you use the graph to find the amount of distilled water to use for 4.5 milliliters of ammonia?

_____

_____

(x, y)

linear function

(2, 100)
(3, 150)
(3.5, 175)
(4, 200)
(5, 250)

EXAMPLE 1

Real World

FL 6.RP.1.3a, 6.RP.1.3b

The Webster family is taking an express train to Washington, D.C. The train travels at a constant speed and makes the trip in 2 hours.

A Make a table to show the distance the train travels in various amounts of time.

STEP 1 Write a ratio of distance to time to find the rate.

$$\frac{\text{distance}}{\text{time}} = \frac{120 \text{ miles}}{2 \text{ hours}} = \frac{60 \text{ miles}}{1 \text{ hour}} = 60 \text{ miles per hour}$$

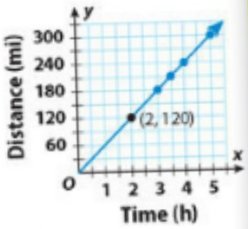
STEP 2 Use the unit rate to make a table.

Time (h)	2	3	3.5	4	5
Distance (mi)	120	180	210	240	300

B Graph the information from the table.

STEP 1 Write ordered pairs. Use Time as the x-coordinates and Distance as the y- coordinates.

(2, 120), (3, 180), (3.5, 210), (4, 240), (5, 300)



STEP 2 Graph the ordered pairs and connect the points.

Animated Math

Personal Math Trainer
Online Assessment and Intervention.
Interactive Example

Guided Practice

Personal Math Trainer
Online Assessment and Intervention.
Guided Practice

Selected Answers
See all the selected answers.

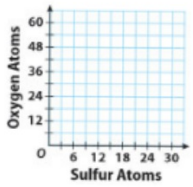
1. The ratio of oxygen atoms to sulfur atoms in sulfur dioxide is always the same. The table shows the numbers of atoms in different quantities of sulfur dioxide. Complete the table. (Explore Activity 1)

Sulfur atoms	6	9	21	
Oxygen atoms	12			54

What are the equivalent ratios shown in the table?

_____

2. Use the table in Exercise 1 to graph the relationship between sulfur atoms and oxygen atoms. (Explore Activity 2)



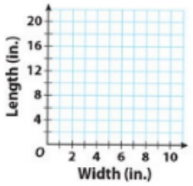
3. Stickers are made with the same ratio of width to length. A sticker 2 inches wide has a length of 4 inches. Complete the table. (Explore Activity 1)

Width (in.)	2	4	7	
Length (in.)				16

What are the equivalent ratios shown in the table?

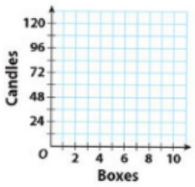
_____

4. Graph the relationship between the width and the length of the stickers from Exercise 3.(Explore Activity 2)



5. Five boxes of candles contain a total of 60 candles. Each box holds the same number of candles. Complete the table and graph the relationship. (Example 1)

Boxes	5	8	
Candles			120



ESSENTIAL QUESTION CHECK-IN

6. How do you represent real-world problems involving ratios and rates with tables and graphs?

_____

Nov. 6
Period 5

Warm Up- place pg. 89 on your desk
Complete pg. 92 all #s

Class Work - Quiz Lesson 4.2

Homework - read and complete pgs. 93-94 all #s

$\frac{2}{3} \div \frac{6}{1}$ KCF

$\frac{2}{3} \cdot \frac{1}{\cancel{6}3}$ SBM

$\frac{1}{9}$