PATIOS AND PATES UNIT

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highlighted selections are included in this sample

PATIOS AND PATES

Student Handouts



This file has been organized for double-sided printing. Blank pages are left intentionally.

READINESS STANDARDS

6.4B Apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates

6.4H Convert units within a measurement system, including the use of proportions and unit rates

SUPPORTING STANDARDS

6.4C Give examples of ratios as multiplicative comparisons of two quantities describing the same attribute.

6.4D Give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients.

6.5A Represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions.

Included in this unit you will find the following:

Unit Overview

a sample pacing calendar, ideas and tips for teaching/introducing the concepts, unit vocabulary, big ideas, vertical alignment, and common misconceptions

Student Handouts

student-friendly notes and practice problems, homework/independent practice, quizzes, unit review, and unit assessment

Student Handouts as Google Slides

a Google Slide version of the unit (excluding assessments)

Answer Keys

an answer key for each page of the unit

Editable Unit Assessment

a PPT file of the unit test has been provided for you to make modifications

Need to get in touch? Please direct all questions to <u>contact@maneuveringthemiddle.com</u>.

Date

Pd

PATIOS AS COMPARISONS

EQUIVALENT DATIOS	 Ratios that ar just like an eq 	e equivalent can be s uivalent fraction.	implified to the same,
	• Ex: 4:5, 8:10,	12:15 $\frac{1}{6}, \frac{2}{12},$	<u> </u>
SCALE FACTOR	• The ratio are mult	or iplied by to form an e $\frac{2}{5} \cdot \boxed{= \frac{8}{20}}$	in which both numbers in a quivalent ratio. $ \frac{2}{5} = \frac{8}{20} $
Create two ratios the	at are equivalent t	o the ratios below.	

1. 3:11	2. 18:12	3. 6:10

Determine if the ratios below are equivalent. If so, determine the multiplier or scale factor.

4. $\frac{2}{5}$ and $\frac{8}{20}$	5. $\frac{12}{4} \text{ and } \frac{6}{3}$	6. $\frac{8}{6}$ and $\frac{20}{15}$

Audrey and Megan are decorating for a birthday party. Audrey hangs 4 streamers in the same amount of time that Megan hangs 6. If Audrey hangs 12 streamers, then how many streamers can Megan hang? Determine the scale factor.

AUDREY 4 STREAMERS				 =	:
MEGAN 6 STREAMERS					

Use your understanding of equivalent ratios to answer the questions below.

7. Use the pattern below to determine how many gray squares there would be if there are 15 white squares.	8. Mrs. Malone earns two hours of paid vacation for every 9 days she works. How many hours of paid vacation will Mrs. Malone earn after working 81 days?
9. A wrapping paper fundraiser sells rolls of gold and red wrapping paper. The ratio of gold rolls sold to red rolls sold is 5:8. If the school sells 78 rolls, then how many were gold?	10. There are a total of 30 puzzle pieces. Three out of 5 are red, the remaining are black. How many puzzle pieces are black?

Sally's Summer Punch recipe is a combination of lemonade and fruit punch. Sally uses 6 cups of lemonade for every 8 cups of fruit punch. Use the information below to complete the chart and determine who followed Sally's recipe correctly.

	PATIO	RATIO IN SIMPLEST FORM	WAS SALLY'S RECIPE USED CORRECTLY?
June made a recipe with 21 cups of lemonade and 28 cups of fruit punch.			
August made a recipe with 35 cups of liquid total, 15 of which were lemonade.			
January made a recipe with 18 cups of fruit punch and 24 cups of lemonade.			
May made a recipe with 22 cups of liquid total, 12 of which were fruit punch.			

Summarize today's lesson:

Name	

Date _____

Pd

PATIOS AS COMPARISONS

Determine if the ratios below are equivalent or not. Justify your reasoning.

1.	2.	3.
4:18 and 2:12	5:20 and 15:60	17:3 and 68:12

Use your understanding of equivalent ratios to answer the questions below.

4. A toy shop sells baby rattles in green and yellow. For every two green rattles the toy shop sells, it sells 7 yellow rattles. If the company sells 108 rattles, how many yellow rattles did they sell?	5. A French toast recipe uses 2 eggs to make 14 slices of French toast. Brenda wants to make 98 slices of French toast to feed her family and friends. How many eggs will Brenda need to make 98 slices?			
6. Olumide plays the piano and guitar. For every 5 minutes of piano practice, he spends 8 minutes practicing guitar. How many minutes will Olumide practice piano if he spends 64 minutes practicing guitar?	7. At Doggy Daycare, there are 3 trainers assigned for every 12 dogs. There are 72 dogs enrolled for the daycare on Tuesday. Determine the number of trainers needed.			
8. Maia was baking cupcakes for a party. She mixed 4 drops of red food coloring for every 6 drops of yellow food coloring to dye her icing orange. Circle the ratios of food coloring drops that would create the same orange color and justify your choices.				

2 red to 3	yellow 4	0 yellow to 100 red	44 red to 66 yellow	
	24 red to 26 yellow	28 red to 4	ł2 yellow	

Name _____Pd____

RATIO TABLES AND GRAPHS

A ratio	is a way to	quantities.
1. Todd earns \$3 for every 5 cho using the ratio table below.	ores he completes on his ch	ore chart. Find equivalent ratios
CHORES	TOTAL (\$)	DATIO CHORES TO TOTAL
		 ► ►
		•
		►
a. How are the number of chores	s and the amount of money	earned related?
b. How are the values in the chor	es column related?	//
c. How are the values in the total	column related?	
d. What do you notice about the r	atio column?	
2. Mr. Baker is making pancakes	and reads the recipe on the	e back of the pancake box. Use the

information in the table to determine the ratio of the cups of pancake mix to cups of water.

CUPS OF PANCAKE MIX	1	2	3	4	5	6
CUPS OF WATER	1.5	С	4.5	6	7.5	р

a. What is the constant ratio?

b. How many cups of pancake mix will be needed if there are 15 cups of water?

In questions 3-4, complete the ratio table, and then answer the questions below.

3. A cookie recipe calls for 3 eggs for every 2 dozen cookies.	4. A developer earns \$6.00 for every 21 apps downloaded.
ECCS	ADDS
COOKIES (DZ)	\$ EADNED
a. How many cookies can be made with 12 eggs?	a. How many apps will need to be downloaded in order to earn \$84?
b. How many eggs will be needed for 60 dozen cookies?	b. How much money will the developer earn when 105 apps are downloaded?

In 5-6, use your knowledge of ratios to answer the questions below.



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Date _____Pd____

Use your ur	derstanding	DAT of ratio	IO T tables c	ABLE and grap	S AND GRAPHS	Ø
1. An artist of blue pain	mixes yellow t for every 7	and blu ounces	e paint of yello	to make ow.	the perfect shade of green. She uses 2 ounces	/
BINE	YELLOW		PATIO	a. H add	low many ounces of yellow will the artist need to to 12 ounces of blue?	
				b. 1 How	The artist realizes she has 49 ounces of yellow left. I many ounces of blue will she need to add?	
c. If the mi can make, c	xing containe and what reci	r only h pe shoul	olds 40 Id she u	ounces se?	of paint, what is the most green paint the artist	
2. Mark ow acquires. G	ns a persona Fraph the rela	l trainin ationship	g busine o on the	ess. He coordin	makes a total of \$500 for every 3 clients he ate plane below.	
				a. If equi	° Mark is saving to purchase \$2,500 in new pment, how many clients will he need?	
				b. H	low much money will 21 clients bring in?	
				c. M man	ark hopes to one day earn \$10,000. Predict how y clients Mark would need to train.	
						-C, 2017
3. Alexande determine h	r has a collec low many pag	tion of ges he w	basebal vill need	l cards l to hold	ne wants to organize into a book. Use the table to 234 cards.	e Middle LL
PAGES	3	6	q	12		sring th
CARDS	18	36	54	72		©Maneuv€

Name	

Date _____

Pd

PATIO ADDLICATION

As you apply ratios to solve real-world situations, consider asking yourself the following questions to guide your thinking and determine reasonableness for your solutions.

Б	What is being ? Practice applying ro	What in co atios in situa	formation am I about the mparison? tions below.	Does your solution make sense in the context of the ?
~	1. Jenna and Becca were both selling every 3 boxes of cookies Becca sold many boxes did each girl sell? Sketcl	cookies doc . Combined h a tape diac	or to door. Jenna sold , they sold a total of 3 gram to organize you	d 4 boxes of cookies for 35 boxes of cookies. How r work.
	I KNOM:		I NEED TO KNOM:	
	dlan and modk:		SOLUTION:	
	2. Latrina is planning to serve hors d'8 hors d'oeuvres for every 3 people.d'oeuvres will she serve? Set up a pr	'oeuvres at I If she has roportion to	ner wedding. She pla 240 people RSVP to t solve.	ns on offering he wedding, how many hors
	I KNOM:		I NEED TO KNOM:	

plan and work:	SOLUTION:

Practice applying ratios to real-world situations to solve problems.

3. The ratio of accessible parking spots to general parking spots is 2:75. If a parking lot is
designed to hold 385 parking spots, how many more general parking spots than accessible parking
spots will there be?

I KNOM:	I NEED TO KNOM:
PLAN AND WORK:	SOLUTION:

4. Joel and Rhonda were comparing their classroom economy bank accounts. The sum of their
bank account balances was \$160. The ratio of Joel's account balance to Rhonda's account balance
was 4:1. How much money does each student have in their account?

I KNOM:	I NEED TO KNOM:
PLAN AND WODK:	SOLUTION:

Use your understanding of ratios to answer the question below.

5. A food distributor ships 8 cases of regular soda for every 3 cases of diet soda. Mrs. Lockett asks students to find a number that could represent the number of cases of diet soda the food distributor could ship. Which student(s) complete the task correctly?



Summarize today's lesson:

Name

Date ____

Pd _____

DATIO ADDLICATION

Match each correct answer to a letter and complete the riddle below. Not all choices will be used.

At a local preschool, there is a ratio of 3 boys to every 4 girls. If there are 245 total preschoolers enrolled, then how many are boys?	5 Jasmine is a receptionist at a doctor's office. She books 36 appointments each day. Four out of every 24 appointments are cancelled. How many appointments are cancelled each day?
2 Stan's Steakhouse has a server to chef ratio of 5 to 2. The total number of servers and chef's is 42. How many servers does Stan's Steakhouse employ?	6 Kendrick's Kennel has 2 spots for cats for every 7 spots for dogs. If he has a total of 144 spots for both cats and dogs, how many more spots does he have for dogs than cats?
3 An amusement park sells child and adult tickets at a ratio of 8:1. On Saturday, they sold 147 more child tickets than adult tickets. How many tickets did the amusement park sell on Saturday?	The children's section at a public library has picture books and chapter books with a ratio of 2:3. If there are a total of 500 books in the children's section, then how many chapter books are there?
4 A pair of angles has a ratio of 5:2. If the larger angle measures 105°, then what is the measure of the smaller angle?	8 A movie theater has 24 screens. The ratio of action films to other films currently showing is 1:2. How many action films are currently showing?

A: 168	E: 42	L: 189	G: 98	B: 8	A: 168
T: 6	I: 80	E: 105	J: 18	M: 21	T: 6
H: 50	N: 300	P: 25	C: 30	S: 12	H: 50

WHAT DID ZERO SAY TO EIGHT?

7 6 2 4 8 1

3

5



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