

Lesson 12 • Session 2

Understanding Ratio Concepts

➤ Complete each problem about ratio relationships.

- ① Ms. Omar runs the school tennis club. She has a bin of tennis balls and rackets. For every 5 tennis balls in the bin, there are 3 tennis rackets. Draw a model to show the ratio of tennis balls to tennis rackets.

Write the following ratios.

tennis balls to tennis rackets _____

tennis balls to total pieces of tennis equipment _____

- ② Christian has a collection of 18 shark teeth. He identified them as 6 tiger shark teeth, 8 sand shark teeth, and the rest as bull shark teeth.

What does the ratio 6 : 8 represent in this situation?

What does the ratio 4 : 18 represent in this situation? Explain your reasoning. Include a model in your explanation.

- ③ How are part-to-part ratios different from part-to-whole ratios?

Lesson 13 • Session 2

Finding Equivalent Ratios

➤ Use equivalent ratios to complete each table.

1

Cats	3	6	9	12	15
Dogs	7	14			

2

Apples	11	22	33	44	
Oranges	12				60

3

Miles	9	18		36	45
Hours	2		6		

4

Levels	1	3	5	7	
Points	9				81

5

Cars	7	21		35	
Bicycles	6		24		36

6

Cost (\$)		60		180	240
Tickets	4		16		32

7

Miles		170	340		850
Gallons	2	10		40	

8

Pounds	126	210	630	756	
Baskets			15		20

9

Tables	8		16		
Chairs	32	16			

10

Nuts			80	40	
Raisins	14			28	

11 A florist uses 225 branches of winterberry to make 75 wreaths. Based on this ratio, how many branches of winterberry does the florist use for 25 wreaths? Explain your answer.

12 Which strategies did you use to complete the table in Problem 9? Explain.

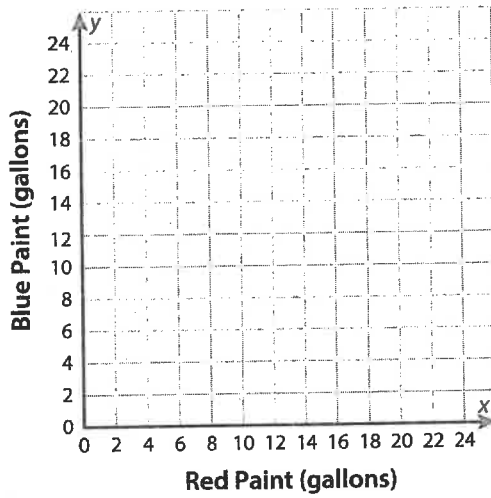
Lesson 13 • Session 3

Graphing a Table of Equivalent Ratios

➤ Complete each table of equivalent ratios. Plot the ordered pairs on the graph.

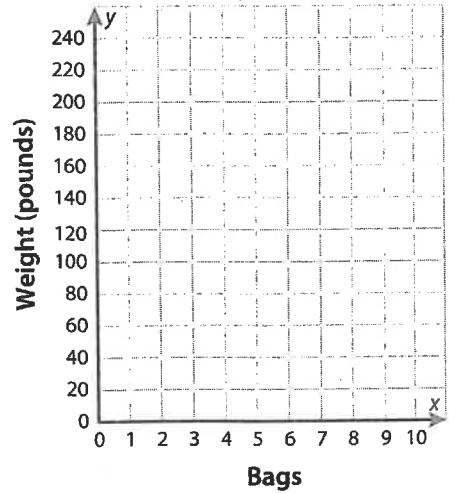
1

Red Paint (gallons)	4	8	12	16
Blue Paint (gallons)	6			



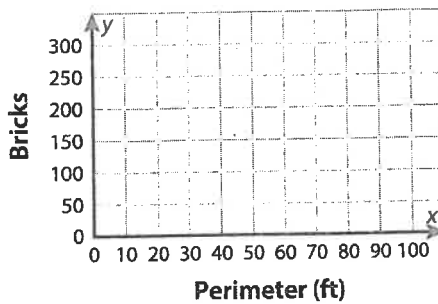
2

Bags of Concrete Mix	2	4	6	
Weight (pounds)	60			240



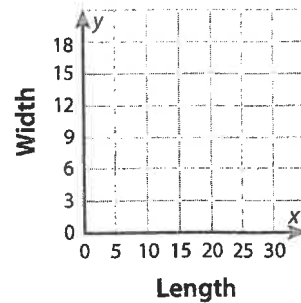
3

Perimeter (ft)		60	80	
Number of Bricks	100		200	250



4

Length	25	20		10
Width	15		9	



5 Explain how the graph can be used to check that the ratios are equivalent.

Lesson 13 • Session 4

Using Equivalent Ratios

► Solve each problem.

- 1 Josie is training for a race. The ratio of the number of minutes she runs to the number of miles she runs is 24 to 3. She plans to run 10 miles. How many minutes will it take her?
-

- 3 Fred is making a fruit salad. The ratio of cups of peaches to cups of cherries is 2 to 3. How many cups of peaches will Fred need to make 60 cups of fruit salad?
-

- 5 The first week of January, there are 49 dogs and 28 cats in an animal shelter. Throughout the month, the ratio of dogs to cats remains the same. The last week of January, there are 20 cats in the shelter. How many dogs are there?
-

- 2 A chef planning for a large banquet thinks that 2 out of every 5 dinner guests will order his soup appetizer. He expects 800 guests at the banquet. Use equivalent ratios to estimate how many cups of soup he should prepare.
-

- 4 A community garden center hosts a plant giveaway every spring to help community members start their gardens. Last year, the giveaway supported 50 families by giving away 150 plants. Based on this ratio, how many plants will the center give away this year in order to support 65 families?
-

- 6 A wedding planner uses 72 ivy stems for 18 centerpieces. When she arrives at the venue, she realizes she will only need 16 centerpieces. How many ivy stems should she use so that the ratio of ivy stems to centerpieces stays the same?
-

Lesson 14 • Session 2

Solving Ratio Problems Involving Parts and Wholes

► Solve each problem. Show your work.

- 1 An artist is making a mosaic using glass tiles. He uses a total of 600 tiles. The ratio of red tiles to blue tiles is 1 : 2. How many red tiles does he use?
-
- 2 A jeweler makes an ocean-inspired necklace using a total of 60 snail shells and shark teeth. The ratio of snail shells to shark teeth is 5 : 1. How many of each does she use?
-
- 3 A field biologist collects 220 butterflies and moths. He collects 4 butterflies for every moth. How many butterflies and how many moths does he collect?
-
- 4 Chad is making an orange smoothie. The recipe calls for 3 parts frozen yogurt to 5 parts orange juice. How many ounces of frozen yogurt and how many ounces of orange juice does he need to get a total of 16 ounces?
-
- 5 Last week, a florist sold 715 roses. Of the roses sold, 7 out of every 11 roses were red. How many red roses did she sell?
-
- 6 Tim sells two types of pizza. He charges \$10 for a cheese pizza and \$15 for a pepperoni pizza. Yesterday he sold 64 pizzas in all. For every cheese pizza, he sells 3 pepperoni pizzas. How much money did he make selling pizzas yesterday?
-

