PR1 PROBLEM BANK

LESSON 1: EXTRA PRACTICE

1. Franco likes to make a lemon tea that is in a ratio of 4 cups of lemonade to 5 cups of iced tea. He is hosting a party for 15 people and estimates that each person will drink 3 cups of lemon tea.

   a. How much lemon tea should he make so every guest has 3 cups?

   b. Construct a tape diagram to figure out how many cups of lemonade and iced tea Franco should use.

   c. How many cups of lemonade should Franco put in the lemon tea?

   d. How many cups of iced tea should Franco put in the lemon tea?

   e. Create a table to show this situation.

2. The ratio of women to men in a coed volleyball tournament is 2 to 3.

   a. Create a table for this situation.

   b. Using the columns in the table, write two different ratios and explain how you know these ratios involving numbers of people in the tournament are equivalent. Use an arrow diagram if desired.

3. A horse eats 132 bales of hay in 12 months. Answer the following questions. Use a table or diagram to show your reasoning.

   a. How many bales of hay does the horse eat per month?

   b. At that rate, how many bales of hay would the horse eat in 8 months?

   c. How much hay would 3 horses eat in 12 months?

   d. How long would 198 bales last if they were used to feed one horse?

4. About 1 out of 10 people are left-handed.

   a. Make a tape diagram to represent this situation.

   b. In a group of 70 people, about how many people would you expect to be left-handed? Explain how to solve this problem using a tape diagram.

LESSON 1: EXTRA PRACTICE
(Continued)

5. A shade of pink paint requires 5 parts red paint and 2 parts white paint. Use a table or diagram for the following.
   a. How much red paint should you use if you have 1 gallon of white paint?
   b. How much white paint should you use if you have 25 gallons of red paint?
   c. Miko wants to make a whiter shade of pink paint. Write two ratios (red paint to white paint) that would make a whiter shade of pink compared to the original mixture. Explain your reasoning.
   d. Stephen wants to make a redder (darker) shade of pink paint. Write two ratios (red paint to white paint) that would make a redder (darker) shade of pink compared to the original mixture. Explain your reasoning.

6. A neighborhood veterinarian treats cats and dogs in her clinic. She keeps track of her patients, and notices that the ratio of cats to dogs is usually about $1:4$.
   a. Draw a tape diagram to represent this.
   b. How many cats and how many dogs are in the clinic if there are a total of 45 animals?

7. Lita is painting her bedroom. She wants her bedroom to be painted lilac. In order to make this color she mixes together purple and white paint in a ratio of $3:4$.
   a. Draw a tape diagram to represent this.
   b. How many cups of purple does she need if she uses 28 cups of white.
   c. How many cups of white does she need if she uses 9 cups of purple?
   d. How many cups of white paint will she need to make 56 cups of lilac paint?

8. Lexie is making an orange punch drink for a party. She puts 4 pints of orange drink and 2 pints of water into a punch bowl. Her friend Olivia says, “Oh no, you were supposed to make a mixture that is 3 parts orange drink and 4 parts water.” What can Lexie add to the current punch bowl mixture to correct the mistake so that the orange drink mixture is done the way Olivia suggests? Use a tape diagram to help solve this problem.

LESSON 2: EXTRA PRACTICE

1. An 8 pound bag of dog kibble contains about 26 cups of kibble. Barry's dog Cocoa eats $2\frac{1}{2}$ cups of kibble per day.

   a. Make double number lines to represent these ratios.

   b. How many cups of kibble does Cocoa eat in two weeks?

   c. The table to the right shows the cost of kibble in various-size bags. Do the costs per pound for the bags represent equivalent ratios? Explain.

   d. If Barry wants to buy Kibble for Cocoa that will last for two weeks, what should he purchase?

Bag size (in pounds)	**Cost** ($)
4	6.00
8	10.00
20	20.00

2. Maria earns the same amount each day for her part time job. After working 8 days, she made $1,200.

   a. Use a double number line diagram to find out how much she made in 6 days.

   b. How much will she make in 40 days? Show your work.

3. Raymond walked in a fundraiser for cancer research. He walked 18 miles in 6 hours and raised $1,440.

   a. How many dollars per hour walking did he raise?

   b. Create a double number line diagram to show the relationship between the number of miles walked and the number of hours walked.

   c. Use your double number line to determine how long it took for him to walk 12 miles.

4. Francine's horses all eat the same amount of hay per day. One day, she fed 4 of her horses 56 pounds of hay. Use a double number line to answer the following questions.

   a. If she wanted to buy hay for 10 horses for one day, how many pounds of hay would she need?

   b. If she had 28 pounds of hay, how many horses would that feed in a day?

LESSON 2: EXTRA PRACTICE
(Continued)

5. You buy 9 pounds of potatoes every 5 weeks. Create a double number line to represent this information.

   a. How many pounds of potatoes do you buy per week?

   b. At that rate, how many pounds of potatoes would you buy in 7 weeks?

   c. At that rate, how many weeks would it take you to buy 22.5 pounds?

6. Miranda babysat 3 hours each night for 8 nights. She earned a total of $192 babysitting. Create a double number line to represent this information and help answer these questions.

   a. How much did she earn per hour?

   b. How many hours would she need to babysit to earn $288?

   c. How much money would she earn if she babysat 12 hours?

   d. How much money would she earn if she babysat 144 hours?

7. Maya jogs 8 yards every 5 seconds. Create a double number line or a table to help answer these questions.

   a. How many yards did she jog in 65 seconds?

   b. How many seconds did it take her to jog 28 yards?

   c. What is the unit rate of yards per second?

8. You eat 9 boxes of cereal in 12 weeks. Create a double number line to help answer the following questions.

   a. At that rate, how many boxes of cereal would you eat in 2 weeks?

   b. At that rate, how many weeks would it take to eat 15 boxes of cereal?

   c. What is the unit rate of boxes of cereal eaten per week?

LESSON 3: EXTRA PRACTICE

1. To the right are some arrows and stars. Write each ratio below.

   a. The number of arrows to the number of stars.

   b. The number of stars to the number of arrows.

   c. The number of stars to the total number of shapes.

   d. The total number of shapes to the number of arrows.

   e. Charlie adds six more stars to the collection of shapes above. How many arrows would he need to add to keep the ratio of arrows to stars the same? Explain.

2. To the right are some stars and arrows:

   a. What is the ratio of the number of stars to the total number of shapes?

   b. Use words to describe what the ratio $5:9$ means in this context.

   c. If George added 18 shapes to the collection but the ratio of stars to arrows remains the same, how many stars did he add?

3. These two rate statements are NOT the same. Use words and numbers to explain the difference.

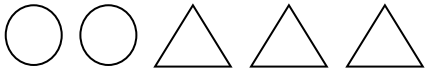
   a. Zeek earns 15 dollars in 3 hours.

   b. Caleb earns 3 dollars in 15 hours.

4. Change **exactly two** of the numbers in this table to create a table where columns of numbers represent equivalent ratios.

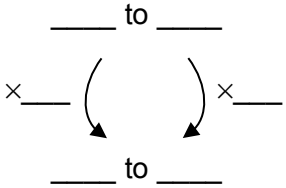
	Emma	**Hunter**	**Jaquin**	**Arya**
miles	7	30	72	14
hours	4	20	40	8

LESSON 3: EXTRA PRACTICE
(Continued)

5. The teacher drew the shapes to the right on the whiteboard. 

   a. Create a table comparing the number of circles and triangles in the ratio pictured. Be sure to include the labels in the left column.

   b. Using columns in the table, write two ratios that represent the ratio of circles to the total number of shapes. Show the multiplier with an arrow diagram.



6. Copy each arrow diagram below, write the **multiplier** that can be used to justify that the ratios are equivalent.

a.	b.	c.
2 to 5 ×___ ×___ 6 to 15	7 : 3 ×___ ×___ 49 : 21	24 : 16 ×___ ×___ 3 : 2

7. There are 3 bananas and 1 apple in a bag.

   a. Write the ratio of the number of bananas to the total number of fruit.

   b. Grace adds 4 pieces of fruit to the bag. The ratio of the number of bananas to the total number of fruit stays the same. How many bananas does she have?

   c. Write the ratio of bananas to total fruit in Grace's collection.

   d. Explain why these two collections of fruit represent equivalent ratios.

8. Minuet gets $30 in allowance every two weeks. She is saving all of her allowance to buy a prom dress that costs $210. How many weeks will it take her to save up enough money for the dress? Use a table, tape diagram, or double number line to show your reasoning.