

Objective

Comparing Ratios to Solve Problems

Warm-Up



Use reasoning to compare each pair of fractions. Use $<$ or $>$.

1. $\frac{6}{7}$ and $\frac{8}{9}$

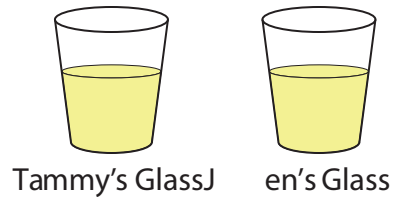
2. $\frac{7}{13}$ and $\frac{5}{11}$

3. $\frac{4}{5}$ and $\frac{4}{3}$

GETTING STARTED

Lemony-er Lemonade

Tammy's glass of lemonade has a weaker tasting lemon flavor than Jen's glass of lemonade. The shaded portion in each glass represents an amount of lemonade.



1. If one teaspoon of lemon mix is added to both Jen's and Tammy's glasses, which glass will contain the lemonade with the stronger lemon flavor? Explain your reasoning.



In this activity you will compare ratios without measuring or counting quantities. When you reason like this, it is called qualitative reasoning.

1. The shaded portion in each glass represents an amount of lemonade. Answer each question and explain your reasoning.

a. Beth's glass of lemonade has a weaker tasting lemon flavor than John's glass of lemonade. If two ounces of water is added to Beth's glass and one teaspoon of lemon mix is added to John's glass, which glass will contain the lemonade with the stronger lemon flavor?



Beth's Glass



John's Glass

b. Jimmy and Jake have glasses of lemonade that taste the same. If one teaspoon of lemon mix is added to each glass, which glass will contain the lemonade with the stronger lemon flavor?



Jimmy's Glass



Jake's Glass

c. Jack's glass of lemonade has a stronger tasting lemon flavor than Karen's glass of lemonade. If one teaspoon of lemon mix is added to Karen's glass and one ounce of water is added to Jack's glass, which glass will contain the lemonade with the stronger lemon flavor?



Jack's Glass



Karen's Glass

2. Choose the correct statement to complete each sentence and explain your reasoning. If the answer cannot be determined, explain why not.

a. If Luke plans to use four more tablespoons of orange mix today than what he used yesterday to make the same amount of orange drink, his orange drink today would have:

- a stronger tasting orange flavor.
- a weaker tasting orange flavor.
- a mix that has the same strength of orange taste as yesterday.

b. Dave and Sandy each made a pitcher of orange drink. Sandy's pitcher is larger than Dave's pitcher. Sandy used more orange mix than Dave. Dave's orange drink has:

- a stronger tasting orange flavor.
- a weaker tasting orange flavor.
- a mix that has the same strength of orange taste as Sandy's drink.

c. If a race car travels more laps in less time than it did yesterday, its speed would be:

- slower.
- exactly the same.
- faster.



The 6th grade students are making hot chocolate to sell at the Winter Carnival. Each homeroom suggested a different recipe.

HR 6A

2 cups milk

3 teaspoons cocoa powder

HR 6B

5 cups milk

8 teaspoons cocoa powder

HR 6C

3 cups milk

4 teaspoons cocoa powder

HR 6D

4 cups milk

7 teaspoons cocoa powder

1. Consider the given recipes to answer each question.
 - a. Use reasoning to determine which recipe has the strongest chocolate taste and which recipe has the weakest chocolate taste.

 - b. Show how you used ratio reasoning to order the recipes.
Identify the ratios that you used as part-to-part or part-to-whole.



Suppose your class is in charge of providing punch at the upcoming open house. Mr. Gilbes bought lemon-lime soda and pineapple juice to combine for the punch, but he did not tell your class how much of each to use.

Your classmates submitted suggestions for how to make the tastiest punch.

Order the cards from the least lemon-lime concentration to the most lemon-lime concentration. If you think more than one card describes the same ratio of lemon-lime soda and pineapple juice, group those cards together.

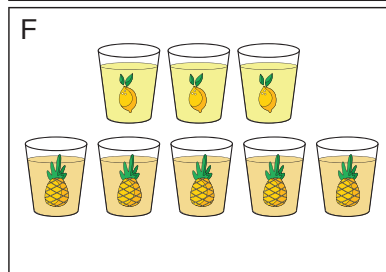
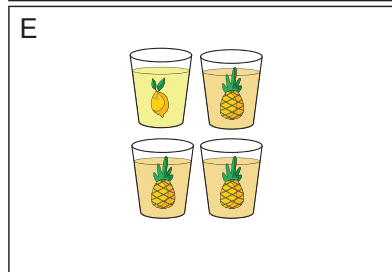
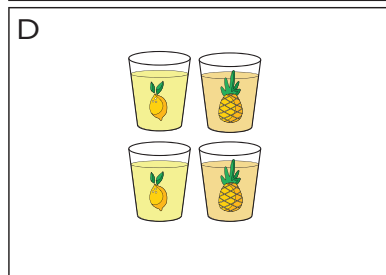
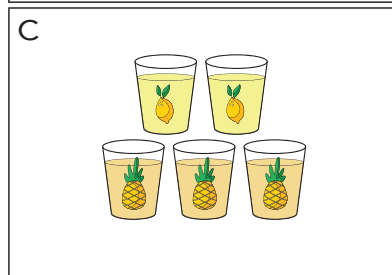
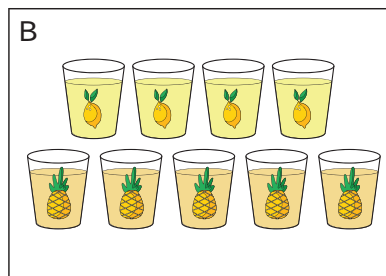
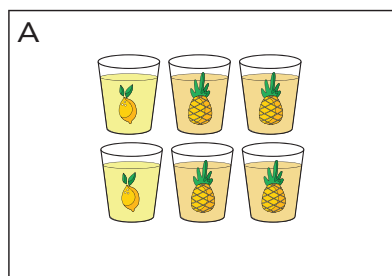


Lemon-lime soda



Pineapple Juice

1. Describe the strategies you used to sort and order the cards.



Show You KNOW

Put Me In, Coach

A soccer team has been awarded a penalty shot at the end of a tie game. If they make the penalty shot, they will win the league championship. The coach is considering three players to take the penalty.

Amber has taken 4 penalty shots this season and has made 3 of them.

Lindsay has taken 6 penalty shots and made 4.

Li has taken 3 penalty shots and made 2.

1. Which player would you recommend take the penalty shot? Why?



LESSON 4.2

Going Strong



Objective

Comparing Ratios to Solve Problems

Practice

Megan is making fruit punch using fruit juice and ginger ale. She tries different combinations to get the mixture just right. If the ratio of fruit juice to ginger ale is too high, the punch is too fruity; if the ratio is too low, the punch is too gingery.

For each attempt, write a ratio Megan can try next time.

1. She tried 16 cups of fruit juice and 4 cups of ginger ale. That was too fruity.
2. She tried 10 cups of fruit juice and 8 cups of ginger ale. That was too gingery.
3. She tried 10 cups of fruit juice and 1 cup of ginger ale. That was too fruity.
4. She tried 8 cups of fruit juice and 4 cups of ginger ale. That was a little too gingery.
5. Based on Megan's attempts in Questions 1-4, what might be a good ratio of fruit punch to ginger ale?
Explain your thinking.