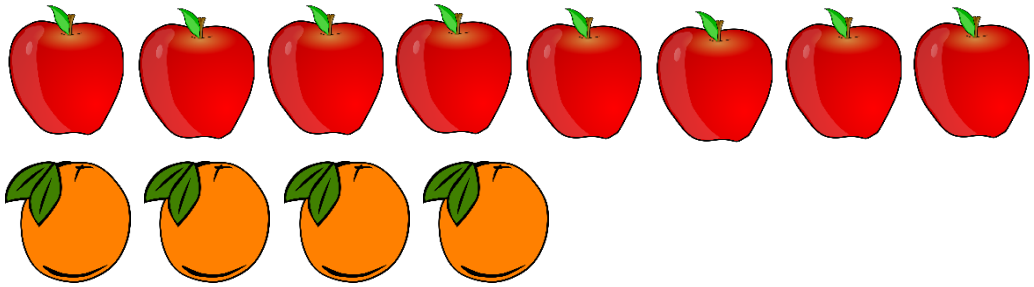
5.2

Activity

Do Now

Jarrod has the following:



What is the ratio (in fractional form) of apples to oranges?

What is the ratio (in fractional form) of oranges to apples?

If Jarrod gets two more apples, how many oranges should he get so that it is the still the same ratio? Explain.

Name_____ Date _____

5.2 Proportions

For use with Activity 5.2

Essential Question How can proportions help you decide when things are "fair"?

1 ACTIVITY: Determining Proportions

Work with a partner. Tell whether the two ratios are equivalent. If they are not equivalent, change the next day to make the ratios equivalent. Explain your reasoning.

a. On the first day, you pay \$5 for 2 boxes of popcorn. The next day, you pay \$7.50 for 3 boxes.

First Day Next Day

$$\frac{\$5.00}{2 \text{ boxes}} \stackrel{?}{=} \frac{\$7.50}{3 \text{ boxes}}$$

b. On the first day, it takes you $3\frac{1}{2}$ hours to drive 175 miles. The next day, it takes you 5 hours to drive 200 miles.

First Day Next Day

$$\frac{3\frac{1}{2} \text{ h}}{175 \text{ mi}} \stackrel{?}{=} \frac{5 \text{ h}}{200 \text{ mi}}$$

c. On the first day, you walk 4 miles and burn 300 calories. The next day, you walk $3\frac{1}{3}$ miles and burn 250 calories.

First Day | Next Day

$$\frac{4 \text{ mi}}{300 \text{ cal}} \stackrel{?}{=} \frac{3\frac{1}{3} \text{ mi}}{250 \text{ cal}}$$

d. On the first day, you paint 150 square feet in $2\frac{1}{2}$ hours. The next day, you paint 200 square feet in 4 hours.

First Day | Next Day

$$\frac{150 \text{ ft}^2}{2\frac{1}{2} \text{ h}} \stackrel{?}{=} \frac{200 \text{ ft}^2}{4 \text{ h}}$$

2 ACTIVITY: Checking a Proportion

Work with a partner.

a. It is said that "one year in a dog's life is equivalent to seven years in a human's life." Explain why Newton thinks he has a score of 105 points. Did he solve the proportion correctly?

$$\frac{1 \text{ year}}{7 \text{ years}} \stackrel{?}{=} \frac{15 \text{ points}}{105 \text{ points}}$$

"I got 15 on my online test. That's 105 in dog points! Isn't that an A+?"

b. If Newton thinks his score is 98 points, how many points does he actually have? Explain your reasoning.

3 ACTIVITY: Determining Fairness

Work with a partner. Write a ratio for each sentence. Compare the ratios. If they are equal, then the answer is "It is fair." If they are not equal, then the answer is "It is not fair." Explain your reasoning.

a. You pay \$184 for 2 tickets to a concert. **&** I pay \$266 for 3 tickets to the same concert. ➡ **Is this fair?**

b. You get 75 points for answering 15 questions correctly. **&** I get 70 points for answering 14 questions correctly. ➡ **Is this fair?**

c. You trade 24 football cards for 15 baseball cards. **&** I trade 20 football cards for 32 baseball cards. ➡ **Is this fair?**

TONIGHT'S HOMEWORK IN YOUR NOTEBOOKS

p. 171 (#4, 5) and p. 174 (#15-20):

4. Find a recipe for something you like to eat. Then show how two of the ingredient amounts are proportional when you double or triple the recipe.

5. **IN YOUR OWN WORDS** How can proportions help you decide when things are "fair"? Give an example.

Tell whether the two rates form a proportion.

15. 7 inches in 9 hours; 42 inches in 54 hours

16. 12 players from 21 teams; 15 players from 24 teams

17. 440 calories in 4 servings; 300 calories in 3 servings

18. 120 units made in 5 days; 88 units made in 4 days

19. 66 wins in 82 games; 99 wins in 123 games

20. 68 hits in 172 at bats; 43 hits in 123 at bats