Lesson 2.1 Finding and using Unit Rates

Day 1
Teach objective
Assignment - Guided practice and Independent practice completed as a class

Day 2
Review
Cooperative (elbow buddy)assignment 2-1 practice and problem solving: D
2-1 Practice and problem solving: A/B

Login to Go Math
Go to the Resources Tab
Click on the Student Online Edition (yellow open book)
This will take you to another window to an interactive student edition textbook.

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Answers to "reflect", Explore activity" and "your turn" questions

EA. A. 2 Miles; B. 1, 1½, 2, 4; C. 2 Miles; D 2/3, 1, 2, 4
1. Multiplied ½ mile by 3.
2. They are hiking the same speed. 2 mil/h
3. 1/6 x 4 = 2/3 acre
4. 3 x 4/3 = 4 oz
5. Tank 1 ¾ x 3/2 = 9/8 Tank 2 5/8 x 2 = 10/8
        Tank 2

For answers to the guided practice and independent practice, see Coach Gammon.

Additional web sites
Below is a Khan academy web site. When you click on the website, there will be a couple of short videos on the left hand side that you can watch.

1. https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-ratios-prop-topic/cc-6th-rates/v/finding-unit-rates

Remember, on the online edition, you can click on the "math on the spot" for a little extra teaching from Prof Burger. If you only have your book, use a QR scanner on the "math on the spot"

Lesson 2-1

Finding and using Unit Rates

What is a rate? A _____ that _____ 2 quantities measured in different unit   Example $\dfrac{4 \text{ miles}}{2 \text{ hours}}$

What is a unit rate? A _____ in which the second _____ in the comparison is one unit.   Example $\dfrac{55 \text{ miles}}{1 \text{ hour}}$

How do you find and use unit rates?
To find the unit rate, _____ the numerator of the rate by the _____.

While remodeling her kitchen, Angela is repainting. She estimates that she paints 55 square feet every half-hour. How many square feet does Angela paint per hour?

(**STEP 1**) Determine the units of the rate.

The rate is **area in square feet** per **time in hours**.

(**STEP 2**) Find Angela's rate of painting in area painted per time.

area painted: 55 sq ft   **time:** $\frac{1}{2}$ hour

$\dfrac{\text{area painted}}{\text{time}} = \dfrac{55 \text{ square feet}}{\frac{1}{2} \text{ hour}}$

The fraction represents area in square feet per time in hours.

(**STEP 3**) Find Angela's unit rate of painting in square feet per hour.

$\dfrac{55}{\frac{1}{2}} = 55 \div \frac{1}{2}$ Rewrite the fraction as division.

$= \dfrac{55}{1} \times \dfrac{2}{1}$ Multiply by the reciprocal.

$= \dfrac{110 \text{ square feet}}{1 \text{ hour}}$ The unit rate has a denominator of 1.

Angela paints 110 square feet per hour.

Name _____ Date _____ Class_____

Unit Rates
Practice and Problem Solving: D

Solve. The first one is done for you.

1. To make 2 loaves of banana bread, Leandra needs 6 eggs.
   How many eggs are needed to make 1 loaf of banana bread?

   $$\frac{6 \text{ eggs}}{2 \text{ loaves}} = \frac{3 \text{ eggs}}{1 \text{ loaf}}$$

   Leandra needs _____**3**_____ eggs to make 1 loaf of banana bread.

2. On his way to visit his sister at college, Gregg drives 135 miles in
   3 hours. What is his average rate of speed in miles per hour?

   $$\frac{135 \text{ miles}}{3 \text{ hours}} = \frac{\text{miles}}{1 \text{ hour}}$$

   Gregg's average rate of speed is _____ miles per hour.

3. Jan designs a new logo for Kim's website. Kim pays Jan $45 for
   5 hours of work. How much money does Kim pay Jan per hour?

   _____

4. At a discount grocery store, Jessica paid $0.72 for an 8-ounce bottle of
   spring water. What is the cost of the spring water per ounce?

   _____

5. A bucket is leaking. After 3 hours the bucket has leaked $\frac{3}{4}$ of an

   ounce. How many ounces per hour is the bucket leaking?

   $$\frac{\frac{3}{4} \text{ oz}}{3 \text{ h}} = \frac{3}{4} \div \frac{3}{1} = \frac{}{} \times \frac{}{} = \frac{\text{oz}}{1 \text{ h}}$$

   _____

6. After 15 minutes a train has moved $\frac{9}{2}$ miles toward its destination.

   How many miles per minute is the train moving?

   _____

7. A snack that Reginald just bought has 150 calories in $\frac{3}{4}$ of a serving.

   How many calories per serving is this?

   $$\frac{150 \text{ cal}}{\frac{3}{4} \text{ serving}} = \frac{150}{1} \div \frac{}{} = \frac{150}{1} \times \frac{}{} = \frac{\text{cal}}{1 \text{ serving}}$$

   _____

Name _____ Date _____ Class_____

Unit Rates

Practice and Problem Solving: A/B

Solve.

1. To make 2 batches of nut bars, Jayda needs to use 4 eggs. How many eggs are used in each batch of nut bars?

   _____

2. On her way to visit her parents, Jennifer drives 265 miles in 5 hours. What is her average rate of speed in miles per hour?

   _____

3. Last week Alexander was paid $56 for 7 hours of work. How much money does Alexander's job pay per hour?

   _____

4. Ned has scored 84 points in the first 6 games of the basketball season. How many points per game has Ned scored?

   _____

5. At the local grocery store, a 16-ounce bottle of apple juice costs $3.20. What is the cost of the apple juice per ounce?

   _____

6. An above-ground swimming pool is leaking. After $\frac{1}{2}$ hour the pool has leaked $\frac{7}{8}$ of a gallon of water. How many gallons of water per hour is the swimming pool leaking?

   _____

7. After $\frac{3}{4}$ of a minute a sloth has moved just $\frac{3}{8}$ of a foot. What is the sloth's speed in feet per minute?

   _____

8. Food A contains 150 calories in $\frac{3}{4}$ of a serving. Food B contains 250 calories in $\frac{2}{3}$ of a serving. Find each unit rate. Which food has fewer calories per serving?

   _____