

Name: Key  
Date: \_\_\_\_\_

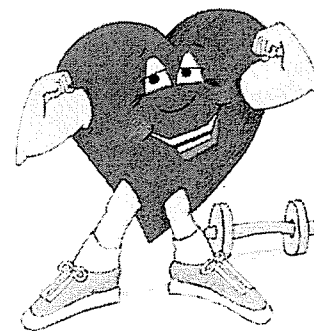
Mr. Johnson  
Math 8

### **Lesson 5.9 – Exploring Rates**

#### Investigate:

Complete the Investigate activity on page 294 of your textbook. Use the timers that Mr. Johnson provides. Answer the following questions

1. Who has the faster heart rate?
2. How do you know?
3. Calculate how many times each person's heart would beat in an hour? A Day? A week? A year?
4. What assumptions do you make?
5. Are these assumptions reasonable? If not would do you think would be a better estimate for questions #3?



Notes:

When two things with different units are compared we have a rate.

Here are some rate examples:

- 5 pizzas for every 20 students
- Oranges are on sale \$1.69 for 12
- Timmy earns \$9.00 per hour at McDonalds
- There are 12 cans of Pepsi in each box

The last two examples are unit rates. Unit rates compare a quantity to 1 unit. We can find unit rate by using diagrams, tables, and graphs.

Examples:

1. Express the following as a unit rate:

a. The car traveled 180 km in two hours.

$$\frac{180 \text{ km}}{2} \div \frac{2}{2} = \frac{x}{1} \quad x = 90$$

b. A printer can print 55 copies in 20 seconds

$$\frac{55}{20} \div \frac{20}{20} = \frac{x}{1} \quad x = 2.75$$

c. Jenny reads 24 pages in 30 minutes

$$\frac{24}{30} \div \frac{30}{30} = \frac{x}{1} \quad x = 0.8$$

2. A 300-g package of pepperoni costs \$4.29.

a. What is the cost per 100 g?

$$\frac{\$4.29}{300} \div \frac{300}{300} = \frac{x}{100} \quad x = \$1.43$$

b. How much would 1 kg cost?

$$\frac{\$1.43}{100} \times 1000 = \$14.30$$

c. How much pepperoni could you buy with \$20?

$$\frac{\$1.43}{100} = \frac{\$20}{x} \quad x = \frac{2000}{1.43}$$

$$= 1398.6 \text{ g}$$

talk to students about 'x' multiply

Assignment:  
Pg. 297-299  
#s 1-2, 4-15, 18-19