

Rate Contests

Name_____

Date_____

A. Bubble Gum Blowing: Assign a counter, a timer, a blower and a scribe. Blow as many bubbles as possible in two minutes.

1. Write a ratio comparing the number of bubbles and the number of seconds in two minutes.
2. Find your blower's rate of bubbles per second. Then, find the rates for the other teams in the class.
3. Explain how you know which team won by using their rate per second rather than their total number of bubbles.
4. About how many bubbles would you expect to have blown if the contest had continued for 10 minutes. Explain how you decided that number.

B. Ball Bouncing contest: Assign a timer, a bouncer, a counter and a scribe. Bounce a ball and catch it waist high for 20 seconds. Rotate roles so each team member has a turn to bounce and catch for 20 seconds.

5. Write the ratio of bounces caught in 20 seconds for each person on your team. Find each person's rate per second.
6. If you had continued bouncing and catching for a minute at the same rate, how many bounces caught would you have? Write your rate per minute. Explain how you came up with that rate per minute.

Soda Guzzling: Two class members will guzzle. Two other class members will pour to keep a few three ounce Dixie cups about $\frac{2}{3}$ full on a table. Guzzlers will guzzle for 30 seconds.

7. Write a ratio for each guzzler using ounces to 30 seconds. Find each guzzler's rate per seconds.

8. If a 2 liter soda bottle contains approximately 67 ounces, how long would it take each guzzler to drink the entire bottle at their rate? Show all your reasoning.

High Jumper: Measure your height in centimeters. Tape a couple of meter sticks to a wall beginning at 100 centimeters up, so they extend upward well above reach. You will need a recorder and 2 sighters. Each person begins at a stand still and jumps as high as possible touching the meter stick. Jumpers may crouch, but may not run for momentum. The sighters use a pointer or another meter stick to mark the touch spot and say how many centimeters high that was, and the recorder writes the ratio of height jumped to height of jumper.

9. Find the rate for centimeters jumped per inch of your height.

10. Write the ratio and find the rate for the others in your group. Compare rates to determine who can jump the highest for their height.

Heart Rate: Find pulse in your neck or wrist. Time keeper times for six seconds as students count heart beats. Multiply the number of beats by 10 to get beats per minute (60 seconds). Next do jumping jacks or running in place for 1 minute, stop, find pulse. Repeat timing and counting.

11. What was your resting heart rate? Active heart rate?

12. Write the rate for someone in the class whose resting rate was lower than yours, and someone whose resting rate was higher than yours. Do this for active rate too.

Lower resting _____ higher resting _____ lower active _____ higher active _____

A Better Buy-Shopping War: Two players: Using a card deck, each player picks two cards. The first is the price for an item in dollars. The second is the number of items purchased. Each player finds the rate for each item. The player with the better buy, keeps all four cards. Ties remain on the table until the next hand is played. Player with the most cards at the end of the deck, wins. (Aces are 1, Kings are 0, Queens are 12, Jacks are 11).

13. Not counting zeros, describe which pairs of cards in the deck would give you the better buy. Explain why this rate is a better buy.