Popcorn, Peanuts, Hot Dogs

The Movie:

If your job is to feed 20,000 hungry fans at Yankee Stadium, your motto had better be "Be Prepared". Featured: Anthony Parnagian, Food Services Manager, Yankee Stadium. *(Movie Length: 1:51)*


Background:

There's nothing like watching your home team play in its own stadium. And since you're going to be there for a few hours, you'll probably want something to eat and drink—along with perhaps 40,000 other fans. Fortunately, a baseball stadium is much more than a large structure with lots of places to sit—it is also a rather complex network of people and services, who work together behind the scenes so that you can keep your attention on the ball game.

Curriculum Connections:

Fractions   1

The hot dogs you are buying from a supplier are supposed to be around 5/8 pound each. You weigh a box of 75 hot dogs and find that it weighs 48 pounds. Is that about right?
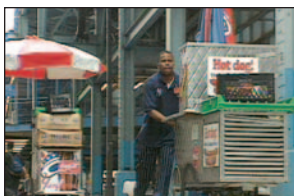
Measurement (volume, conversion), Ratio   2

Get a pack of unpopped popcorn. Use a measuring cup to measure the volume, in ounces, of all of the popcorn seeds before you pop them. Use a half-gallon milk container to measure the volume, in gallons, of the popcorn after it is popped. What is the ratio of the volume of unpopped to popped popcorn?
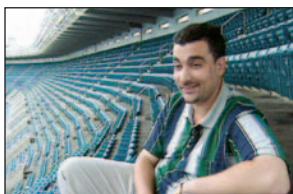
Percents   3

Suppose that you are the food services manager at Yankee Stadium, and you are currently paying 90 cents per bag of peanuts you buy from your supplier. A new supplier comes to you and offers to sell you better tasting peanuts for $1.00 per bag. You find out that, at another stadium, the better peanuts were more popular, and total income from peanut sales went up by 12%. Would you switch? Explain.
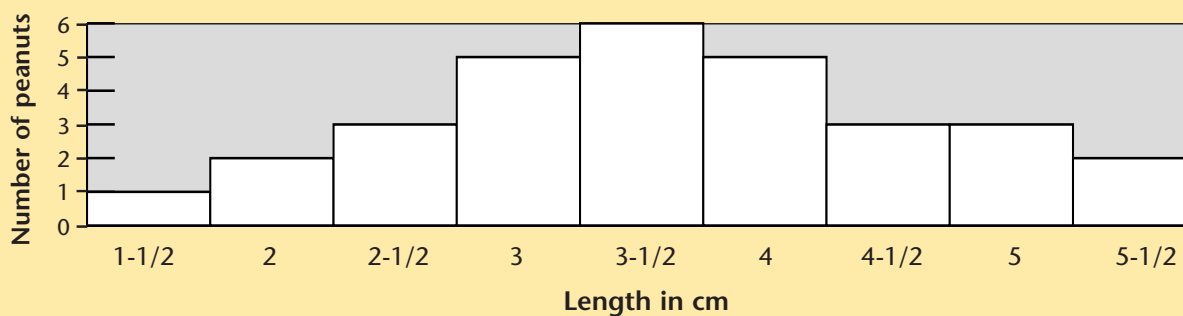
Statistics

Not all peanuts are the same.

Measure the length of twenty-five unshelled peanuts to the nearest half centimeter, and record your information in the table at right.

Then make a graph that shows all of your data. (Your graph should look like the example. This type of graph is called a *histogram.*)

Compare your graph to graphs made by other students. If you combine the data from everyone in the class, what do you think the graph would look like?

Length	Tally	Number
1 1/2 cm (or less)		
2 cm		
2 1/2 cm		
3 cm		
3 1/2 cm		
4 cm		
4 1/2 cm		
5 cm		
5 1/2 cm		
6 cm (or more)		

Example:

Statistics

Look at this record of hot dog sales. What advice would you give the owner of the hot dog stand?

Day	# of hot dogs sold	Diary
Monday	78	Rainy today
Tuesday	85	Switched to another brand of buns
Wednesday	81	Offered three flavors of mustard
Thursday	89	Sunny day
Friday	90	Yankees won!
Monday	80	Switched to new brand of ketchup
Tuesday	65	Rainy day
Wednesday	68	Sunny day
Thursday	62	Yankees won!
Friday	58	Gave free potato chips with hot dogs

World's Greatest

To: Food Services Manager
From: Chief Financial Officer

Joe,

I think I can get a better deal for us on food supplies with a long term contract, but I need some help.

I've put together some data about past attendance and sales from our records.

Can you get me an accurate estimate on the total sales of hot dogs, soda and peanuts for the years 2006 though 2010?

Thanks!

Andy

Attendance and hot dog sales for 6 games last year:

Game	Spectators	Hot Dogs Sold
1	38,420	29,542
2	42,380	34,532
3	31,350	26,980
4	51,146	36,782
5	32,985	24,679
6	46,934	33,694

Total yearly attendance of spectators at Yankee Stadium for several years:

Year	Ballpark Attendance
1990	2,006,436
1991	1,863,733
1992	1,748,737
1993	2,416,942
1994	1,675,556
1995	1,705,263
1996	2,250,877
1997	2,580,325
1998	2,955,193
1999	3,293,659
2000	3,227,657
2001	3,264,552
2002	3,461,644
2003	3,423,206

Note: We usually sell about 1 can of soda for every 2 hot dogs, and 1 pack of peanuts for every 10 hot dogs.

Teaching Guidelines: World's Greatest
Math Topics: Statistics, Ratios

Help students to realize that they must complete three tasks to solve this problem:

a) Estimate how many people total will be attending games at the stadium for the years requested.

b) Estimate how many hot dogs those people will eat.

c) Estimate the amounts of soda and peanuts needed.

For task (a), students should graph the year attendance data, and then extend the trend. This can be done visually or, for algebra students, by using two of the points given to generate a straight line.

For task (b), students should compute the mean number of people who attended the six games given, and the mean number of hot dogs eaten per game. Find the ratio of hot dogs to people, and multiply by the number of people found in (a) to get an estimate for total number of hot dogs.

For task (c), students should create ratios of soda to hot dogs (1/2) and peanuts to hot dogs (1/10), and multiply those by the total number of hot dogs.
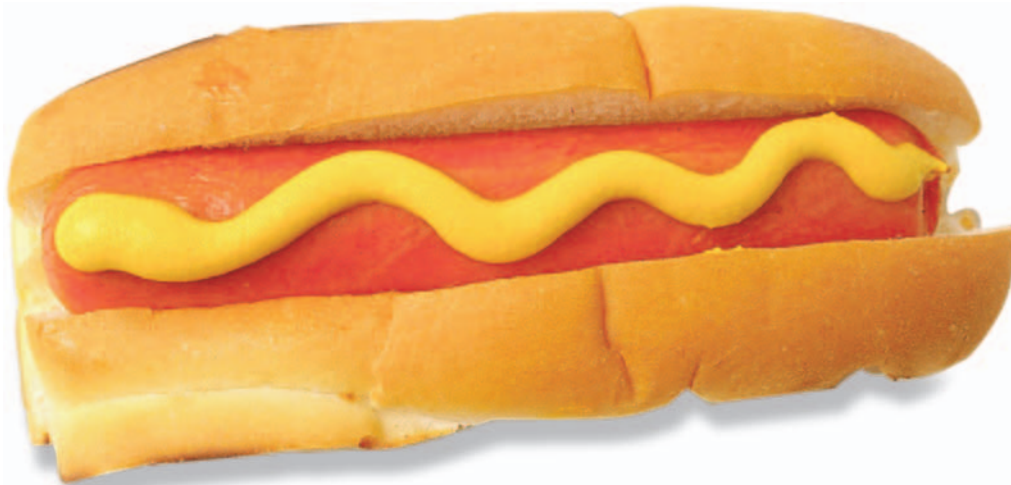
If you enjoyed this Futures Channel Movie, you will probably also like these:

Sports Photography, #4003	Sports photography requires an expert's understanding of light, lenses and shutter speed.
First One in the Ballpark, #2009	Lisa Winston reports the facts on baseball players by arriving to the games early and keeping a close watch on statistics.