

A Weighty Situation

Grades: 4-6

Subjects: Math

Approximate Time: 2-3 days

Montana Standards: Math 1, 2, 3, & 5.

Objectives: Students will be able to estimate the weight and cost of the product and calculate the actual price.

Materials Needed:

- www.beef.org
- Stock market page from a current newspaper (must have farm commodities)
- Scale
- Produce
- Grocery store flyer
- Worksheet (included)

Keywords: commodity, product, beef steer, current market price, bushel volume, estimation

Brief Description: Whether you are a mother buying oranges at the grocery store, a student buying an apple at the lunch counter, or a rancher selling his wheat or beef steers, you have to have a procedure to measure whatever it is you are buying or selling. A store clerk will most likely weigh the oranges you are purchasing to figure out how much money you owe. The amount of money the rancher gets for his beef steers will depend on their weight. Some products are sold according to weight, some according to volume, and some by the piece.

The price of a beef steer depends on how much the steer weighs. When a steer is sold, it is weighed on a large livestock scale. The weight is then multiplied by the current market price. If the current market price is 89 cents per pound, and the steer weighs 842 pounds, the value of the steer would be \$749.38. Market prices are determined by how much of a product is available for sale, how much people are willing and able to pay for the product and other supply and demand factors. Other products sold by the pound include cotton, hay, and peanuts.

Wheat farmers sell the wheat they grow by the bushel. Like beef, the price of wheat per bushel depends on the current market value. Oats, barley, feed corn, rye, and soybeans are also sold by the bushel. However, the seed the farmer purchases for replanting is priced by the pound. Garden seeds are sold by the ounce because most gardeners do not need large quantities.

Most of the produce you buy in the grocery store (apples, peaches, potatoes, and tomatoes) are sold by the pound. But if you go into the fields or buy the same produce from a roadside stand or a farmer's market, you probably will pay for it by the bushel or half-bushel. The grower measures the produce by filling a bushel or half-bushel basket. Smaller quantities are measured in quart or pint baskets.

Some produce is sold by the piece. Watermelons, for example, may be priced \$2.80 per watermelon, no matter how big it happens to be. Corn on the cob usually is sold by the dozen. Pumpkins are sorted according to size—miniature, small, medium, large, and jumbo. Each pumpkin in a category will cost the same.

Lesson:

1. Divide your class into 4 to 6 groups. Have a small scale that measures pounds and ounces available to each group. Supply each group with a grocery store flyer showing prices for each type of produce you have purchased for the groups.
2. Review the idea of estimation and why it is a valuable skill when going to the grocery store. Share background information.
3. Ask students to use the included worksheet to record their estimates of the weight and cost of the produce provided. Then have students weigh the produce and calculate the cost, based on the price listed in the grocery ads.
4. Have the students move from station to station until each group has visited each station. Have the students total the weight of all the produce and calculate the total cost. If all the weights are not the same have the students discuss possible reasons for the discrepancy (weights and costs may have been rounded up or down). Share a snack of the fruits and vegetables that were used in the measuring activity. Be sure to follow proper kitchen safety with the food.
5. The following day, bring a bathroom scale to class, and have students weigh themselves. Then have students figure out how many of them it would take to equal the weight of an 842 pound steer. How much would each student be worth at a current market price of 89 cents a pound?
6. Take a field trip to your local grocery store to observe the produce as well as the meat counters. Have students document the price of different produce, where the produce is grown, and whether it is sold by the piece, pound, etc. At the meat counter, have students choose five different cuts of meat and what the price per pound each cut is sold for.
7. Return to the classroom. Begin a discussion on the findings from the grocery store. Students will have questions as to why a New York Steak is sold for \$8.99 a pound when a steer is sold for 89 cents a pound. This is your opportunity to discuss with your students that from the time a steer leaves a ranch to the time it is found in the grocery store it is handled by many different people whom also need to be paid for their involvement in the process. (Truck driver, feedlot owner, slaughter house, commodity broker, grocery store) Each person must be paid for their job which in turn tacks on more to the price of the piece of meat they are purchasing from the grocery store.

Assessment:

1. The teacher checks the math steps and final products of the math problems on the worksheet.



PIECE, POUND, BUSHEL

Produce name	Estimated cost	Estimated pounds	Actual cost	Actual pounds

