

Measuring Water Content

Directions Much of the water your body needs is supplied by the foods you eat. Follow the steps below to figure out how much water various foods contain. Then complete the Discovery activity.

- 1 Measure raisins.** You will need to measure $\frac{1}{4}$ cup of raisins.
- 2 Weigh the raisins on a food scale.** To do this, first place an empty plate on the scale. Then adjust the scale until it reads zero. This step is called “zeroing” the scale and guarantees that your measurement will be accurate because it subtracts the weight of the plate. Put the raisins on top of the plate and record the measurement that the scale shows in grams.
- 3 Count the raisins.** Count the number of raisins that were in your $\frac{1}{4}$ -cup sample. Record this number next to the weight of the sample.
- 4 Count grapes.** Count out the same number of grapes and weigh them on the food scale. Record the weight of this sample in grams.
- 5 Subtract weights.** Subtract the weight of the raisins from the weight of the grapes. The difference is the weight of the water that the grapes contain. Record this figure.
- 6 Repeat the experiment.** Try the experiment with different types of fresh and dried foods. Make a chart to compare results. You could use the following:
 - Whole prunes (with the pits removed) and dried, pitted prunes
 - Canned kidney beans and dry kidney beans
 - Whole apricot halves and dried apricot halves

Discovery

One Cup of Water About how many grapes would you need to eat to get a cup of water? One milliliter of water weighs 1 gram. Therefore, the figure you got in Step 5 (grams of water in the sample of grapes) is also the number of milliliters of water in the sample. A cup of water equals about 240 milliliters. To solve the problem, multiply the number of grapes in your sample by 240. Then divide that answer by the number of milliliters of water the sample contains. Round the answer to the nearest whole number to get the number of grapes you would need to eat.

Sources of Protein

Directions Follow the steps below to compare the costs of different protein sources.

- 1 **Find costs.** The chart below lists five foods that are good sources of protein. Visit a supermarket and find the cost of each item listed. On the lines provided, note the specific food you checked (for example, ground beef or kidney beans). Write down the total cost of each package of food and the number of servings it contains. Be sure to note the serving size listed on the package as well.
- 2 **Calculate cost per serving.** Divide the cost of each item by the number of servings it contains to get cost per serving. List the results in the fourth column of the chart.
- 3 **Find protein amounts.** Consult a resource that lists the nutrient content of foods to find out how much protein is found in one serving of each food on the list. One good resource is the online Nutrient Data Laboratory provided by the U.S. Department of Agriculture. You can look up nutrient values for a particular type of food and serving size. Be sure to look up the same serving size listed on the food package. List the results in the fifth column of the chart.
- 4 **Calculate cost per gram.** Calculate the cost per gram of protein of each food. List the results in the last column. How do the costs compare?

Type of Food	Total Cost	Servings per Package	Cost per Serving	Grams of Protein per Serving	Cost per Gram of Protein
Beef _____					
Canned beans _____					
Chicken _____					
Dry beans _____					
Fish _____					