



Many of the foods that we eat today are filled with sugars like fructose, sucrose or glucose. Sugars taste very sweet, but we eat far too much of them. Sugar added to candies and sodas provides calories without many essential nutrients. In this activity, you will get a chance to see just how much sugar is in a soda. You may be surprised.

Materials

- * Empty soda bottle or can with a "Nutrition Facts" label (8 or 12 oz., not diet soda)
- * Kitchen or postal balance with a gram scale
- * Box of sugar cubes
- * Tongs
- * Calculator (optional)

ADAPTATION You may substitute packets of sugar for sugar cubes. The measurement will be slightly off, but the lesson will remain intact.

SAFETY! Be sure to follow Milli's Safety Tips and do this activity with an adult! Do not eat any of the materials in this activity.



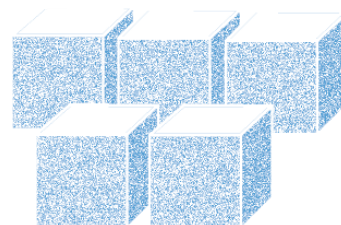
Procedure

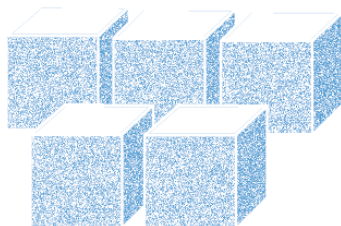
1. Guess how many sugar cubes would be equal to the sugar in a bottle of soda. Write your guess in the space provided in the "What Did You Observe?" section.
2. Read the "Nutrition Facts" label on the soda bottle to see the number of servings in the bottle. Write the number in the "What Did You Observe?" section.
3. Read the "Nutrition Facts" label on the soda bottle to see how many grams (g) of sugar are in 1 serving of soda. Write the number in the "What Did You Observe?" section.
4. Multiply the number of grams of sugar in one serving by the number of servings to find the number of grams of sugar in the bottle. Write your answer in the "What Did You Observe?" section.
5. Place the balance on a sturdy table or desk.
6. Use the tongs to add sugar cubes to the weighing pan of the balance one by one. Watch the scale on the balance, and keep adding sugar cubes until the reading on the balance is equal to the number of grams of sugar in the bottle of soda.
7. Count the number of sugar cubes in the weighing pan and write your answer in the "What Did You Observe?" section. Compare this number to the guess you made at the beginning of the activity.
8. Thoroughly clean the work area and wash your hands.

Where's the Chemistry?

We have many food choices today, and most of them contain sugars. Naturally occurring sugars, like those in fruits, are better for you than the processed sugars and syrups found in candy and soda. You can find out how much sugar a product contains by reading the "Nutrition Facts" label on the item. You may also recognize the names of many different sugars by looking at the list of ingredients. The names of most sugars end in -ose.

Commonly added sugars are sucrose, fructose and glucose. The name of the sugar found in milk is lactose. Look at the nutrition labels on some of your favorite foods. Can you find the names of any sugars? Can you find any sugars other than those named above?





What Did You Observe?



Before you begin:

How many sugar cubes do you think are in a bottle of soda?

From the label:

Number of servings in bottle:



Grams of sugar in one serving of soda: _____g

Calculate:

Number of grams of sugar in the bottle: _____g

(Hint: number of servings in bottle \times grams of sugar in a serving = grams of sugar in the bottle)



Count:

Number of sugar cubes in the weighing pan:

Report:

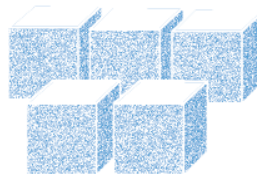


Which was greater, the number of sugar cubes that you thought would be in the bottle of soda, or the number of sugar cubes that you weighed on the balance?



Try this...

Repeat this experiment to find the amount of sugar in other beverages, or in foods like ice cream or a candy bar.



The American Chemical Society develops materials for elementary school age children to spark their interest in science and teach developmentally appropriate chemistry concepts. The *Activities for Children* collection includes hands-on activities, articles, puzzles, and games on topics related to children's everyday experiences.

The collection can be used to supplement the science curriculum, celebrate National Chemistry Week, develop Chemists Celebrate Earth Day events, invite children to give science a try at a large event, or to explore just for fun at home.

Find more activities, articles, puzzles and games at www.acs.org/kids.

Safety Tips

This activity is intended for elementary school children under the direct supervision of an adult. The American Chemical Society cannot be responsible for any accidents or injuries that may result from conducting the activities without proper supervision, from not specifically following directions, or from ignoring the cautions contained in the text.

Always:

- Work with an adult.
- Read and follow all directions for the activity.
- Read all warning labels on all materials being used.
- Wear eye protection.
- Follow safety warnings or precautions, such as wearing gloves or tying back long hair.
- Use all materials carefully, following the directions given.
- Be sure to clean up and dispose of materials properly when you are finished with an activity.
- Wash your hands well after every activity.

Never eat or drink while conducting an experiment, and be careful to keep all of the materials used away from your mouth, nose, and eyes!

Never experiment on your own!

For more detailed information on safety go to www.acs.org/education and click on "Safety Guidelines".

