Healthy Beverages

The Value of Soda

Grades 9-12

I. Nutrition Education Goal & Objective:
Goal 1: Students will comprehend concepts consistent with USDA guidance related to eating and physical activity for good health.

Objective: As a result of Pennsylvania’s SNAP-Ed plan, students will know, understand, analyze, and apply concepts, as developmentally appropriate, that are consistent with USDA guidance about the benefits of:

1. Drinking plenty of water

II. Pennsylvania Educational Standards:
A. 2.5 Mathematical Problem Solving and Communication
B. 10.2 Healthful Living
C. 11.3 Food Science and Nutrition

III. Outcomes:
A. Students will identify lower sugar beverage alternatives.
B. Students will demonstrate the basics of reading a label and interpreting the information.
C. Students will calculate how many teaspoons of sugar are contained in one soda.
D. Students will calculate how many pounds a person could gain per year if they drank 2 bottles of a particular beverage product (soda or sugar-sweetened beverage) every day.

IV. Materials:
A. “Background Information For Teachers”
B. Teacher brings in various soft drink cans or bottles (8 oz., 12 oz., and/or 20 oz.) that represent commonly available beverages. Students can also be asked ahead of time to bring in bottles or cans of beverages they consume often. Teacher supplies sugar, clear sandwich bags, and measuring spoons (teaspoon)
C. Calculators
D. Handout: “The Value of Soda”

V. Procedure:
A. Introductory:
   1. Provide the students with background information regarding nutritional value of soft drinks. (Background information is attached to the lesson for teachers)
   2. Ask the students what beverages they commonly consume, what beverages are considered healthy and why, and what is the different between added sugar and natural sugar in beverages.
B. Developmental:
   1. Students can work separately or in pairs to complete the worksheet, “The Value of Soda.”

C. Concluding:
   1. Review worksheet by having the students share their answers with the class.
Background Information for Teachers

- Eating habits are established in childhood. Therefore, it is important to encourage healthful eating habits at an early age. According to the Centers for Disease Control (CDC), however, a large amount of young Americans (~60%) eat too much fat, and <20% eat the recommended amount of fruits and vegetables daily. Consumption of soft drinks has also increased, placing children at an increased risk of not getting enough of the nutrients they need for optimal growth. Additionally, excessive consumption of soft drinks can contribute to tooth decay and obesity.

- Students often don’t understand the number of calories in sugar-sweetened beverages. This lab utilizes a visual aid to make students aware of the amount of sugar (and calories!) in different beverages, and increases their awareness of their dietary caloric contribution.

- Place the soda cans or bottles and a bag of sugar on a table where students can see them. Put an empty sandwich bag in front of each soda container. Ask students to guess how much sugar is in each soda. Use the teaspoon to scoop the correct amount of sugar into the bag in front of the container. (Use the grams of sugar listed on the food label to estimate how many teaspoons are in each serving of soda. Then do the same for the amount of sugar in each container (Multiply the servings per container by the grams of sugar per serving to figure out). Remember that 1 teaspoon of sugar = 4 grams of sugar.
  - Hint: a 12 oz can of cola has ~9-10 teaspoons of sugar (answer: 36-40 grams sugar)
  - Hint: a 16 oz bottle of orange soda has ~ 15 teaspoons of sugar. (answer: ~ 61 grams of sugar, depending on brand)
  - An 8 oz. cola will have ~7 teaspoons sugar
  - A 16 oz. cola will have ~13 teaspoons sugar
  - A 20 oz. cola will have ~17 teaspoons sugar

- Discuss the effects of sugar on teeth and weight. Discuss the difference between healthy drinks and unhealthy drinks. Show students how to look for the vitamin content of different drinks on the different product Nutrition Label.

- For this activity, give two different products to groups of students and have them evaluate both products using the attached worksheet.
The “Value” of Soda

Name: __________________________________________ Date: __________________

PART 1 – What does it all mean?

Choose two different drink products from the assortment. Record the following information or values for your products in the chart provided.

<table>
<thead>
<tr>
<th>Record the following for Product #1 and #2</th>
<th>Product #1:</th>
<th>Product #2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the product’s name?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the serving size according to the label?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many servings are in the entire container or package?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many total calories are there in one serving?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many calories would you consume if you ate drank the whole bottle?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many grams of sugar are in one serving of the drink?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many teaspoons of sugar are in one serving of the drink? (Hint: 1 teaspoon = 4 grams of sugar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many grams of sugar would you consume if you drank the entire bottle?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many teaspoons of sugar would you consume if you drank the entire bottle? (Hint: 1 teaspoon = 4 grams of sugar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the 1st ingredient listed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the 2nd ingredient listed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What vitamins and/or minerals are listed on the labels?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>List 1-2 ingredients which are a mystery to you.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART 2: Answer the following questions.

1. If there are 3500 calories in a pound and you drank 2 bottles of Product #1 every day for a year, how many pounds could you possibly gain per year? What if you drank Product #2 instead? (Hint: use total calories from each food label for this problem)

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

2. Looking at nutrition label, ingredients list, and number of teaspoons of sugar, do you think Product #1 is healthy? What about Product #2? Why or why not?

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_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

3. Which product is a healthier choice? Why?

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_________________________________________________________________________
_________________________________________________________________________

4. If you think both of the products you looked at are not that healthy, what could you drink instead that would be a healthier choice?

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_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________