Choosing Healthy Beverages
Rethink Your Drink
Grade: 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.
2. Limiting foods high in fat, sodium, and added sugar.

Goal 2: Students will apply skills 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 be able to:
1. Assess personal health practices.

II. Pennsylvania Educational Standards:
A. 2.5 Mathematical Problem Solving and Communication
B. 10.1 Concepts of Health
C. 10.2 Healthful Living
D. 11.3 Food Science and Nutrition

III. Outcomes:
A. Students will select healthier beverage choices
B. Students will demonstrate how to use Nutrition Facts labels to make healthier choices
C. Students will identify the importance of hydration
D. Students will associate sugar intake with overall health consequences

IV. Materials:
A. Laptop/Projector with PowerPoint presentation
B. Visuals: Rethink Your Drink Poster, Sample Drink Bag, Healthy Beverages Poster
C. Demo items: 8 oz, 12 oz, 20 oz, and 24 oz sodas (or other empty beverage containers)
D. Handout: “How much sugar is in my drink?”
E. Optional handout: “Rethink Your Drink” fill in the blanks handout (1/student)
F. Supplies: Measuring teaspoons (1/group, ~8), Plastic cups (1/group, ~8), Container with 2 cups sugar (1/group, ~8), Pencils
G. Food Tasting
H. Reinforcement that conveys the appropriate nutrition message
V. Procedure:

A. Introductory:
   1. Introduction of educator and lesson being presented
   2. Review of last lesson, if applicable
   3. Brief introduction about the workshop and its importance to high school students

B. Developmental:
   1. **Slide 1: Rethink Your Drink**
      This lesson will cover the importance of proper hydration and choosing healthy beverages.
   2. **Slide 2: Project Sponsors**
   3. 
   4. **Slide 3: Why are Water and Hydration Important?**
      *Discuss:* “Why are water and hydration important? Solicit responses.
      The term “hydration” means to provide the body with adequate and sufficient fluids to function appropriately. In fact, the body cannot survive more than 2-3 days without fluids. The body is made up of 60-70% water and water is vital for most of the basic functions that the body performs such as disposing of waste that builds up in the body (through urine and sweat), cushioning and protecting the joints, and assisting in body temperature regulation.

   5. **Slide 4: Dehydration**
      *Discuss:* What is dehydration? Solicit responses.
      a. Dehydration, or a loss of fluids, can happen to anyone, regardless of physical activity. Every day, fluids are lost through breathing and sweat which can quickly evaporate, making it difficult to detect that fluid was lost. Drinking fluids throughout the day will help ward off thirst and maintain hydration.
      b. Keep tabs on signs of dehydration: Thirst is a key sign of mild dehydration, along with urine color. Urine should be a pale yellow versus dark yellow. Other signs and symptoms include headache, fatigue, dizziness, lack of concentration, and difficulty breathing.
      c. For physically active individuals, it is important to consume fluids before, during, and after activity. Outside temperature (both extreme cold and hot temperatures) can create the potential for additional fluid loss. More intense and longer duration activity can also increase fluid losses. Remember that dehydration can significantly negatively affect athletic performance.

   6. **Slide 5: Tips For Drinking More Water**
      Drinking water is the best way to maintain hydration. Tips to increase water intake are: having a glass or water at each meal, inserting a fun colored straw to entice intake, adding a lemon or lime, adding bits of fruit to water, diluting
100% fruit juice with 1 cup water, carrying a water bottle, etc. Some people opt for bottled water instead of tap water. Keep in mind that bottled water usually does not contain fluoride (unless it has been added by the manufacturer, which is not common). Tap water may provide fluoride, a mineral that helps reduce the formation of cavities. *(In the city of Philadelphia, tap water is fluoridated.)*

**Discuss:** What are some other tips to increase water consumption?

7. **Slide 6: Where Else Can We Get Water?**
   Fluid intake does not just come from drinking water. Fluid needs are met from a variety of beverages (100% juice, coffee, tea, sports drink, milk, etc.) and through water contained in foods – especially fruits and vegetables. Foods with high water content also tend to provide a significant amount of fiber, vitamins and/or minerals.

8. **Slide 7: Physical Activity & Fluid Needs**
   a. Water is sufficient for physical activity lasting under 60-90 minutes
   b. During intense physical activity (e.g., high school football, soccer, basketball games), it is important to replenish water and some key nutrients, such as:
      1. Carbohydrate – main source of muscle fuel to perform activity
      2. Protein – needed for muscle repair and recovery
      3. Fluids – lost through sweat
      4. Electrolytes – lost through sweat (salt/sodium, potassium)

   **Discuss:** What are some beverages that would be healthier options after physical activity? *(soda vs. milk, iced tea vs. 100% juice, flavored fruit punch vs. water, soda vs. sports drink, etc)*?

9. **Slide 8: Identifying Healthy Drinks**
   **Discuss:** What are characteristics of a healthy beverage? *Solicit responses.*
   a. Use this slide to highlight key points of label reading with students, beginning by pointing out where “Serving Size” and “Servings Per Container” are located. Reinforce that the Nutrition Facts are based on 1 serving, not the entire container.
   b. The pictured Nutrition Facts labels highlight certain important nutrients:
      - **Calories** – The calorie content of beverages varies widely. Beverages with some of the highest intake, such as soda and fruit drinks, contain calories, but few to no essential nutrients. To limit excess calories and maintain a healthy weight, the Dietary Guidelines recommend drinking water and other beverages with few or no calories, in addition to the recommended amounts of low-fat or fat-free milk and 100% juice. On average, Americans consume 400 calories per day as beverages – most notably from sodas and energy drinks. Most of these drinks have added sugar and little or no nutritional value.
      - **Sugar** – Be mindful of the source of the sugar. Is it natural? Beverages with natural sugars (i.e., 100% juice and plain milk) tend to offer lots of important nutrients along with the naturally occurring sugar. Drinks with
added sugars such as those in sodas and iced teas tend to lack other important nutrients that the body needs.

- **Fat** – Milk is an excellent source of vitamin D and calcium, but it also contains saturated fat. Saturated fat is a solid fat that is associated with heart disease; we should try to eat less solid fat. By selecting low-fat or skim milk, saturated fat is kept to a minimum or totally removed.

- **Protein** – Protein is important for lean muscle tissue growth and repair. Note that skim and whole milk both provide 8 grams of protein per serving; however, because the fat content is different, whole milk contains more total calories.

- **Vitamins and Minerals** – Nutrition Facts labels highlight certain vitamins and minerals that are important in the diet. Milk and 100% juice both offer a variety of these nutrients.

c. *Introduce the term “nutrient dense.”* If a food has a lot of important nutrients compared with the number of calories (like low-fat or skim milk), it is nutrient dense. “Empty calories” are the opposite and refer to foods or drinks that have a lot of calories, but not a lot of important nutrients (like soda, iced tea, or lemonade).

10. **Slide 9: Which Is More Nutrient Dense?**

   **Discuss:** Ask students: Which drinks are healthier: 12 ounces of 100% orange juice or 12 ounces of orange soda; 12 ounces of low-fat milk or 12 ounces of cola?

   a. 100% Orange Juice or Orange Soda: 100% Orange Juice. While the calorie levels are fairly close, it is important to acknowledge the nutrient density of the drinks. 100% orange juice contains natural sugars and a significant amount of vitamin C and potassium. Orange soda contains added sugars, which are contributing factors to weight gain, cavities, and a diet lacking adequate nutrients.

   b. Soda or Low-fat Milk: Low-fat Milk. While the calorie levels are very close, it is necessary to consider the nutrient density of the drinks. Milk contains natural sugars (lactose) and a significant amount of calcium, vitamin D (added to the milk), and protein. Soda contains added sugars and lacks significant nutrients needed.

11. **Slide 10: Portion Distortion!**

   **Discuss:** What is the difference between “a portion” and the words “serving size” on a Nutrition Facts label? What happens to the amount of calories in something when the portion size gets larger? Solicit responses.

   a. The serving size is a standard amount of the food or drink that is used as the basis for the information on the label. For example, if the label says that the serving size for milk is 1 cup, all of the nutrition information on the label refers to what is provided in 1 cup of milk. There might be more than 1 serving in the container, so it is very important to check the serving size and number of servings per container on a label.
b. A portion is how much a person eats or drinks at a one time. A person’s portion size might be the same as the serving size, but it might be larger or smaller.

c. Portion sizes of many foods and drinks have increased over time. While smaller sized sodas were once more common, nowadays 20 oz. sodas commonly fill vending machines and store shelves.

d. The larger the portion size, the more calories will be consumed. If someone has a large portion of a drink with a lot of added sugars (like soda or fruit punch), it might end up taking the place of another drink that would have provided many more nutrients, like low-fat milk or 100% juice. When more calories are consumed than the body can use, weight gain results.

e. Acknowledge that sometimes consuming more than 1 serving or a larger portion of something is not necessarily a problem – it depends on the rest of the overall diet and the nutrients that are in that food or drink.

12. Slide 11: How Much Sugar?
   a. Ask students: What is the main ingredient in soda? Answer: Sugar. Sugar can be found in the ingredients list in various forms: i.e. high-fructose corn syrup, sucrose syrup, etc.

   b. Review the pictured Nutrition Facts label (for a 20 oz. soda) with students, identifying the serving size, calories per serving, and sugar content.

   c. Have a student-volunteer (or the entire class) help to determine how many teaspoons of sugar are in the 20oz. bottle of soda. Go through each step:

      1. Determine the number of grams of sugar in the entire container: There are 27 grams of sugar in one serving and there are 2.5 servings in the container. Multiply these numbers to determine the total sugar (in grams).
         a. 27g x 2.5servings = 67.5g

      2. Determine the number of teaspoons of sugar in the entire container: Tell students that there are 4 grams of sugar in 1 teaspoon of sugar. Divide the total sugar (in grams) by 4.
         a. 67.5 ÷ 4 = 16.9 teaspoons of sugar

      3. Have volunteer measure 17 teaspoons of sugar into a plastic cup.

13. Slide 12: Activity
   a. Divide the class into small groups based on the number of empty drink bottles available. Each group will get a demo drink and a copy of the “How Much Sugar Is in My Drink” worksheet.

   b. The objective of this activity is to determine how many teaspoons of sugar are in the drink by following the same calculation steps that were just used for the other soda. Assist students as necessary.

   c. As students complete their worksheets, they may measure the calculated amount of sugar into an empty plastic cup. Have students compare results for the various drinks, either through discussion or by drawing a table on the board. Out of the drinks, which had the least and most amounts of added sugar?

14. Slide 13: Rethink Your Drink
Summarize the points of the lesson.

a. Stay hydrated every day because dehydration can negatively affect many aspects of health.

b. Think about portion size and remember that larger portions will have more calories. Consuming excess calories can lead to weight gain which can lead to other health issues.

c. Drinks with added sugars are not “bad” and can be incorporated into a healthy diet with balance. Overall, try to choose water instead of sugary drinks.

d. When choosing beverages, remember that both short-term and long-term health are affected, i.e., excess sugar and cavities, calcium and bone health, and excess calories and weight gain.

15. Slide 14: Questions

VI. Conclusion:
   A. Distribute hand wipes.
   B. Provide each student with a food tasting and encourage him or her to make small changes in his or her diet now. Explain why this food is a healthy option.
   C. Distribute the reinforcement, read the message and/or explain the reason why they are receiving reinforcement.
   D. Thank the students for their participation and answer any questions the students have.
   E. Distribute Caregiver Newsletter.

VII. Extension Lessons:
   A. Two Sides of Soda
   B. Value of Soda
   C. What’s in Your Beverage
How much sugar is in my drink?
My group’s drink is _________________

Step 1:

<table>
<thead>
<tr>
<th># of servings</th>
<th>grams of sugar in one serving</th>
<th>Total amount of sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Step 2:

<table>
<thead>
<tr>
<th>Total amount of sugar</th>
<th># of grams of sugar in 1 teaspoon</th>
<th>Total # of teaspoons of sugar</th>
</tr>
</thead>
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</table>
Rethink Your Drink

Circle or fill in the best answer as the instructor goes through the slides. The instructor will go over the correct answers.

1. ____ to ____% of total body weight is made up of water

2. List 3 important things that water does for the body:
   
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

3. ___________________________ is the best drink to stay hydrated

4. Which drink is more nutrient dense?
   
   12 oz. 100% Orange Juice  OR  12 oz. Orange Soda
   12 oz. Cola  OR  12 oz. Low-Fat milk

5. How many teaspoons of sugar are in a 20 oz. soda?

   $27 \times 2.5 \text{ servings} = \underline{67.5} \text{ grams sugar in bottle}$

   $67.5 \div 4 = \underline{16.875} \text{ teaspoons sugar in bottle}$

6. ___________________________ is an example of a drink with added sugar

7. ___________________________ is an example of a drink without added sugar
Rethink Your Drink
Answers

Circle or fill in the best answer as the instructor goes through the slides. The instructor will go over the correct answers.

1. 60 to 70% of total body weight is made up of water

2. List 3 important things that water does for the body:
   - Helps body dispose of waste
   - Protects organs and joints
   - Maintains body temperature regulation

3. Water _____ is the best drink to stay hydrated

4. Which drink is more nutrient dense?
   - 12 oz. 100% Orange Juice  OR  12 oz. Orange Soda
   - 12 oz. Cola  OR  12 oz. Low-Fat milk

5. How many teaspoons of sugar are in a 20 oz. soda?
   - 27 g x 2.5 servings = 67.5 grams sugar in bottle
   - \( \frac{67.5}{4} = 16.875 \) teaspoons sugar in bottle

6. Soda, fruit punch, iced tea, energy drinks, sports drinks (answers may vary) is an example of a drink with added sugar

7. Water, plain milk, 100% fruit or vegetable juice (answers may vary) is an example of a drink without added sugar