

PRESENTATION GUIDE: "BE SUGAR SAVVY"

INGREDIENTS FOR A DYNAMITE DEMONSTRATION

Supplies

- 1 baggie filled with 26 sugar cubes
- 1 empty 20 ounce soda bottle

Handouts

- "Be Sugar Savvy" Presentation Guide
- Soda Label and Calculation
- Sugar Shockers!
- Show Me the Sugar!
- Frequently Asked Questions About Sugar

STEP 1 - WE ARE EATING TOO MUCH SUGAR

[Ask the audience] How much sugar do you think the average American eats in a year?

[Answer] Almost 100 pounds a year...which is more than a quarter pound of sugar a day!

It's no wonder that two out of three Americans are overweight or obese—the average person eats more than a quarter pound of sugar a day! This is equal to about 26 teaspoons (or 26 cubes) of sugar. Here, let me show you. This is what 26 teaspoons of sugar looks like.

[Hold up 26 sugar cubes in a baggie]

Extra calories from all this sugar lead to weight gain and obesity, and can contribute to serious health problems such as diabetes, certain cancers and heart disease.

STEP 2 - RE-THINK YOUR DRINK

You're probably wondering "is it really possible that people eat this much sugar?" And "where is all this sugar coming from?"

We're talking about the extra sugar that manufacturers add to food and drinks. Most of the added sugar in our diets comes from sodas and other sweetened beverages. So let's begin to *think about what we drink*. For example, take a look at how much sugar is in a 20-ounce soda, since this is a common size. We'll start by reading the label.



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Use The Label

- ➡ The label tells us there are 17 teaspoons of sugar in this bottle. How do we know that by reading the label?

[Pass out label with calculation]

- ➡ If we look at the label for the whole package, there are 69 *grams* of sugar in this bottle. Since grams are a measure that most people don't use, let's change the grams into teaspoons...How many *teaspoons* of sugar are in this bottle?

4 grams of sugar equals one teaspoon.

If you divide 69 by 4, you get about 17 teaspoons.

How Much Sugar Is In That Bottle?

- ➡ Let's see what 17 teaspoons of sugar looks like.

[Ask for a volunteer to count out 17 sugar cubes from the baggie]

- ➡ Please count out 17 teaspoons/cubes of sugar and put them in this 20 ounce bottle. I'll help you count. [Count: 1-2-3-4-5...keep going! ... you're halfway there...] O.K. Take a look at this bottle. This is the amount of sugar in this one soda.

- ➡ Let me ask you a question...would you put this much sugar in your coffee?

Here's something else that might surprise you. The calories from adding just one 20-ounce soda a day to your diet for a year, is the same amount of calories in **26 pounds of body fat** — all empty calories from added sugar.

[Ask the audience] How long do you think you would have to walk briskly to burn off the 250 excess calories from one 20-ounce soda?

[Answer] To burn off the calories from a 20-ounce soda, an average 150 pound adult would have to walk at moderate speed for about an hour!



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So...now...don't you want to re-think your drink?

STEP 3 - SHOW ME THE SUGAR!

I know some of you are thinking: "I'm safe. I don't drink soda every day."

- That's great! But soda is not the only place we find an abundance of sugar in our diets. Eating and drinking large amounts of sugar has become way too easy. Most processed or packaged foods and beverages contain some added sugar, and many contain a shocking amount.

*[Pass out **Sugar Shockers** list (Popular Food Items Ranked by Amount of Sugar)]*

Sugar Shockers

Remember how we said the average person eats about 26 teaspoons of sugar a day? Well look how easy it is to get to that amount:

- Let's start at the beginning of the day with a bowl of cereal, like the popular Kellogg's Special K, and a cup of coffee. If you look at the **Sugar Shockers** list, you'll see that 1 cup of Special K contains one teaspoon of sugar, and you added one teaspoon of sugar to your coffee.

[Count out 2 sugar cubes from baggie and place on your demo table]

- It's a great idea to be mindful of our health and so at lunch, let's have a Subway Salad with sliced turkey and Fat Free Italian Dressing. As you can see from your Sugar Shockers list, the salad with dressing totals 9 grams of sugar, which is about 2 teaspoons. We're doing OK so far!

[Count out 2 more sugar cubes from baggie and place on your demo table]

- However, when we add in our 20 ounce soda (which, as you remember, contains 17 teaspoons of sugar), we've had a total of 19 teaspoons of sugar for lunch!



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- ➡ So, we’ve had 2 teaspoons of sugar for breakfast and 19 for lunch, which totals 21 teaspoons. It’s only mid-day and we’re almost up to the daily average of 26 teaspoons of sugar— we have just 5 teaspoons for the rest of the day!

[Hold up baggie containing only 5 sugar cubes]

- ➡ Now it’s the afternoon and we’re ready for a little break. Looking at your Sugar Shockers list, see if you can pick out one or two items that you or your family might eat in a typical day and see how close you get to 5 teaspoons of sugar.

[Ask the audience] Which snacks did you pick?

Here’s what I’ve chosen:

- ➡ I feel like having some chocolate and so I’ve chosen a Snickers bar. When I check the Sugar Shockers list, I see that this snack contains 8 teaspoons of sugar! So let’s see where we are now in our total teaspoons of sugar for the day...

[Count out the remaining sugar cubes from baggie— It is now empty!]

- ➡ With this snack, I don’t even have enough sugar cubes left in the bag to count out 8. I’ve eaten more sugar than the daily average, and I’m short by 3 cubes!
- ➡ So through breakfast, lunch and an afternoon snack, we’ve already had 29 teaspoons of sugar — which is more than the daily average! If you thought it was hard to imagine eating 26 teaspoons of sugar a day—well, we’re there already. See how quickly the sugar adds up, and we haven’t even had dinner or dessert!



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Food/Beverage Item	Container Size	Sugar Grams	Sugar Teaspoons
Special K Cereal	1 cup	4	1
Coffee with 1 tsp of Sugar	8 oz. cup; 1 tsp of sugar	4	1
Subway Salad w/ Fat Free Dressing	1 salad; 2oz. of dressing	9	2
Regular Cola	20 oz. bottle	69	17
Snickers Bar	2 oz.	30	8
TOTAL Teaspoons			29

Here's something to think about: if we had chosen to drink water for lunch instead of soda, and had an apple for an afternoon snack, we would be at only 4 teaspoons through breakfast, lunch and a snack—which is way below the 26 teaspoon daily average!

STEP 4 - BE SUGAR SAVVY

So what else can we do, besides switching to water, to have a healthy diet? First, we need to know how to find the added sugar in foods and beverages, so we can limit it.

[Pass out *Show Me the Sugar!* handout]

Show Me The Sugar

- Take a look at the product shown on this handout — it's a box of cereal bars. The box tells you that they are heart healthy, they lower both blood pressure and cholesterol, and the product is named "Smart Start." But the Nutrition Facts label tells us that one small bar has 12 grams of sugar, which is 3 teaspoons.
- It's important to know where to find the hidden sugars in any product. Take a look at your handout for a list of common names for sugar-in-disguise. *Can someone in the audience read the list of common names for sugar?*



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- ☛ Now that we’ve heard all these different names, let’s look at the Smart Start Healthy Heart Bars Ingredients List to find all the sugar. The words highlighted in red are all names for sugar in this one product. *Let’s say them aloud together...*

[Ask the audience] How many times is sugar listed in this one product?

[Answer] 12

A Low-Sugar Lifestyle

So how can we lead a healthier, low sugar lifestyle? Here are three tips:

1. Limit added sugar as much as possible. It is best to eat fresh, whole foods, especially fresh fruits and vegetables, and limit processed and packaged foods.
2. Drink water instead of sugary drinks. Water is best and has absolutely no sugar. Try replacing at least one sugary drink with water every day. You can add a slice of orange, lemon, or cucumber for almost no calories and lots of flavor.

Other healthy drink options are non-fat milk, unsweetened iced tea and 100% fruit juice in limited amounts — not more than four to six ounces a day. *Once in a while* diet soda is OK; it doesn’t contain the added sugar, but is still not a healthy drink alternative.

3. Get regular physical activity—the US Health and Human Services guidelines recommend 2½ hours of moderate intensity a week, which is about 20 minutes every day or 30 minutes each weekday.

Remember: one small change will make a big difference. If the only change you make is drinking one less 20-ounce soda per day for a year, you will eliminate 91,250 calories—which is the number of calories in 26 pounds of body fat.

Added sugar is everywhere. So...**Be Sugar Savvy!** Know how to find it; know how to limit it; and know how to replace it with healthy options.



Healthy Living *for life!*

Alameda County Public Health Department

Frequently Asked Questions About Sugar

Is bottled water a healthier choice than tap water?

Not necessarily. A four-year review of the bottled water industry concluded that just because water comes out of a bottle, there is no assurance that it is any cleaner or safer than water from the tap. In fact, about 25 percent or more of bottled water is really just *tap water in a bottle*—sometimes it is treated further and sometimes it is not. In addition, bottled water is not as rigorously regulated as tap water and—unlike water from the tap—often lacks fluoride, which is essential for dental health. Finally, bottled water costs considerably more than the water that comes from your tap. According to the East Bay Municipal Utility District (EBMUD), our local tap water is considered safe and does not require further filtering or purification.

Is diet soda better than regular soda?

Diet soda does not contain the sugar and calories that regular soda does, but it is still not considered a healthy drink alternative. Although most of the artificial sweeteners used in diet sodas have been deemed safe (see below), diet sodas, like regular sodas, provide no nutritive value and also contain phosphoric acid, an ingredient that could increase the risk of bone loss later in life.

Are artificial sweeteners safe?

Artificial sweeteners are widely used to reduce or replace the sugar in foods and drinks while keeping the taste and reducing the calories. Based on years of research, the Food and Drug Administration and other agencies worldwide find that most artificial sweeteners are safe. Common sweeteners include: Equal® or Nutrasweet® (aspartame) in the blue packet; Splenda® (sucralose) in the yellow packet and Sweet N Low® (saccharin) in the pink packet.

Is the high fructose corn syrup used to sweeten sodas and other beverages a problem?

High fructose corn syrup flooded the American food supply in the early 1980s, about the same time as the unprecedented rise in obesity rates. Some researchers believe that high fructose corn syrup may have different metabolic effects in the body than other sugars and as a result, corn sweeteners have been accused of being major contributors to the nation's obesity epidemic. However, most experts believe that the real problem with high fructose corn syrup is that it is an especially inexpensive and ever-present form of sugar. High fructose corn syrup is pervasive in the food supply and we are eating too much of it in the form of empty calories in ever-increasing portion sizes.

Are energy drinks a healthy beverage option?

“Energy drink” is a term created by the beverage industry. Energy drinks are not considered to be healthy as they contain extremely large amounts of sugar and caffeine, along with some vitamins and herbal ingredients. Examples of energy drinks include Red Bull and Rockstar. These beverages are not recommended for children and adolescents because they may cause an elevation in blood pressure.



Does carbonated or sparkling water impact our health?

If consumed in large amounts (six or more servings per day) the phosphoric acid in carbonated beverages can reduce calcium levels and lead to a higher risk of bone loss. However, in moderation, carbonation does not impact health.

Are sports drinks, electrolyte replacement drinks, and vitamin waters healthy beverage options?

Sports drinks and electrolyte replacement drinks can be healthy options for people participating in endurance events to increase liquid intake, replace electrolytes and provide energy. Most people, however, do not need sports drinks since regular food and beverage intake is sufficient to replace electrolytes lost during moderate physical activity. Vitamin waters are made with distilled water, fructose, electrolytes and vitamins, and some varieties may also contain caffeine. Like sports drinks and electrolyte replacement drinks, vitamin waters are not unhealthy, but can be expensive and are not necessary if one eats a well-balanced diet and is adequately hydrated.

What is the difference between the sugar in candy and the sugar in fruit?

There is an important distinction between the sugar in candy and the sugar in fruit. Foods like candy are high in *added sugar*—which refers to any type of sugar that has been added during the processing of a food or beverage—and these foods supply *empty calories*—which means they have few nutrients but lots of calories. Fruits also contain sugar but unlike candy, the sugar is naturally occurring (already part of the food) and it contains nutrients (vitamins, minerals, fiber, etc.) that are an important part of a healthy diet.

Is honey healthier than sugar?

Honey is not healthier than sugar because both sweeteners are made from the same two sugar molecules, and both contain about the same amount of calories per serving.

Why are low-fat foods so high in sugar?

In low-fat or fat-free foods, manufacturers often replace the fat with sugar to maintain the product's taste and texture. Recent studies indicate that people actually eat *28% more calories* when they eat low-fat foods!

Does sugar cause diabetes?

Eating excessive amounts of sugar does not cause diabetes directly. Many factors are involved in developing diabetes, some of which include genetics, being overweight, and lack of exercise. Excess sugar intake may contribute to weight gain which may in turn contribute to the development of diabetes.

The following information is excerpted from the UC Berkeley Wellness Letter, February 2007:**How does juice compare to soda?**

100% fruit juices may have about as many calories as sodas and other sweetened soft drinks, but they also contain vitamins, minerals, phytochemicals and some fiber. It is best to limit the intake of fruit juice and instead eat more whole fruits because they retain all their nutrients and are more filling than juice.

Does soda make people fat?

Regular, nondiet sodas and other sugar-sweetened beverages contribute to weight gain and to the growing obesity epidemic. Sodas contain about 140–150 calories (all from sugar) in a 12 oz. can. By adding just one can of regular soda a day to one's diet, everything else being equal, the average person will gain 15 pounds in a year. Even for people who are not watching their weight, there is no reason to fill up on "empty" calories from soda.

Does soda harm teeth?

All sugary foods, including sodas, can cause tooth decay, especially if they are consumed frequently and without regular brushing.



Calculating How Much Sugar Is In A Container

CALCULATION:
Grams of Sugar ÷ 4 = Teaspoons of Sugar

Nutrition Facts	
Serving Size 20 fl. oz (591ml)	
Servings Per Container 1	
<hr/>	
Amount Per Serving	
Calories	250
<hr/>	
	% Daily Value*
Total Fat 0g	0%
Cholesterol 0mg	0%
Sodium 55mg	2%
Total Carbohydrate 68g	23%
Sugars 68g	
Protein 0g	
<hr/>	
*Percent Daily Values are based on a 2,000 calorie diet	
Not a significant source of calories from fat, saturated fat, trans fat, cholesterol, dietary fiber, vitamin A, vitamin C, calcium and iron.	
<hr/>	

68 Grams of Sugar ÷ 4 = 17 Teaspoons of Sugar

Note: if the container has more than one serving, multiply the number of teaspoons by the number of servings to get the Total Teaspoons of sugar in the container.

For example, 10 teaspoons x 2 servings = 20 total teaspoons.

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Sugar Savvy Students - Three Days of Activities (Grades 6-8)

Goal: Decrease student intake of foods and drinks with added sugars and increase physical activity.

DAY 1

Objectives: Students will be able to:

- Define "natural sugar" and "added sugar"
- Gain basic knowledge of carbohydrates, sugar, and high fructose corn syrup
- Increase awareness about the amount of soda they consume each year
- Identify how much money they spend on soda each year

Materials:

- ✓ Worksheet 1 "Sweet Ain't Cheap" (1 per student)

Suggested Time:

20 minutes

1. Review the following with your students and engage in a discussion about natural and added sugar:

- "Natural sugar" means that a food naturally contains sugar, along with vitamins, minerals, and fiber. Foods like fruits, vegetables, and dairy products contain natural sugar.
- "Added sugar" means that sugar was added beyond what occurs naturally. Many processed foods, like sweets and soft drinks, have added sugar. These foods are high in sugar but low in vitamins, minerals, fiber and other healthful things that your body needs to grow.
- Many foods contain added sugars: crackers, cookies, cakes, and cereals to name a few.

Ask: Can you think of any other foods that have added sugars?

- The number one source of added sugar in our diets is soft drinks.
- Too much added sugar can mean that you are eating more calories than you need.
- Foods high in sugar can cause dental cavities.

2. Review the basics of Carbohydrates and Sugar:

- Carbohydrates are our main source of energy and are essential for good health.
- Sugars and starches are the two main types. They are in fruits, vegetables, and grain products.
 - a. Sugars are simple molecules made of carbon, hydrogen, and oxygen. Plants produce sugar during **photosynthesis** by trapping the radiant energy from the sun inside the chemical bonds that hold together the atoms of the sugar molecule.
 - b. Starches are complex chains of sugar molecules. We break down starches into simple sugar units during digestion.

3. Review the basics of High Fructose Corn Syrup (HFCS):

- a. HFCS is a sweetener made by changing some of the glucose in cornstarch into fructose. This results in a mixture containing 42-55% fructose and the rest of the sugar is glucose.
- b. HFCS can be found in numerous foods (ketchup, bread, cereal, tomato sauce, granola bars, and most processed food and beverages on grocery store shelves).
- c. HFCS is added to food because it is cheaper than sugar, especially when corn prices are low, and it keeps food from spoiling.

4. Here are more Soda FACTS you can share with your students:

- The average teen drinks more than 750 cans of soda per year!
- Several scientific studies suggest that soft drinks are directly related to weight gain. That weight gain, in turn, is a prime risk factor for Type 2 diabetes which is a problem for teens as well as adults. As people get older, excess weight also adds to risks for heart attacks, strokes, and cancer.
- Carbonated soft drinks are the single-biggest source of sugar calories in the American diet -- about 7 percent of our calories. Adding in non-carbonated drinks brings the figure to 9 percent. Teens get 13 percent of their calories from carbonated and non-carbonated soft drinks.
- Soda promotes tooth decay because it bathes the teeth in sugar-water for long periods of time.
- We drink more soda today than we did in the past. In the 1950's, Coca-Cola was sold in 6.5-ounce bottles. Now the bottles are 20 ounces.

5. Break class up into small groups to complete Worksheet 1 "Sweet Ain't Cheap" (Answers: 1. \$401.50, 2. \$1204.50)

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DAY 2

Objectives: Students will be able to:

- Calculate how many calories they consume if they drink one 12-oz soda each day for one year.
- Identify potential negative health effects of consuming so many extra calories from sugar.

Materials:

- ✓ Worksheet 2 “**How Many Calories**” (1 per student)
- ✓ Optional: one can of regular soda, one can of diet soda, large transparent container, water

Suggested Time:

20 minutes

Procedures:

1. **Using Worksheet 2**, break students into groups to complete the questions. Discuss the answers as a class after students complete the worksheet. (**Answers: 1. 140 calories from sugar 2. 51,100 calories in a year from soda 3. 3193.75 teaspoons of sugar in a year from soda 4. weight gain, over weight, obesity, increased risk for chronic disease, and dental caries, etc.**)
2. Soda Float Activity (Optional): You will need 1 can of regular soda, 1 can of diet soda, 1 transparent container large enough to hold 2 cans of soda, and water.
 - ✓ Fill the container with water. Show students a can of regular soda and a can of diet soda.
 - ✓ Ask them to predict what will happen when the can of regular soda and the can of diet soda are placed in the container of water.
 - ✓ Place the REGULAR soda in the container of water. (*It will sink.*)
 - ✓ Place the DIET soda in the container. (*It will float.*)
 - ✓ Ask the students if they can guess WHY this happened.
 - *Explanation:* Even though both cans have the same amount of liquid, regular soda has 10 teaspoons of sugar while diet soda uses artificial sweetener. Artificial sweetener is much sweeter and weighs less than sugar, so only a small amount is needed to provide the same sweetness as in regular soda.
 - *Note:* Although diet soda does not have sugar in it, it still has acid which can cause cavities. Also, it does not contain any nutrients. Therefore, we recommend choosing water, 100% juice, or non-fat/low-fat milk.

DAY 3

Objectives: Students will be able to:

- Identify drinks that have less added sugar
- Demonstrate the ability to use goal setting skills to enhance health

Suggested Time:

20 minutes

Materials:

- ✓ Worksheet 3 “**How Sweet It Is**” (1 per student)
- ✓ “**Rethink Your Drink**” poster (1 per class)
- ✓ “**Soda Free Summer**” commitment cards
- ✓ Optional: Sugar, teaspoon, 2 clear plastic bags for scooped sugar

Procedures:

1. **Discuss “Rethink Your Drink” poster**
 - Compare the different amounts of sugar observed on the **Rethink Your Drink** poster. Which drink is winning? Why is that drink winning?
2. **Visual Activity (Optional):**
 - Scoop 10 tsp of sugar into a clear plastic bag – this is how much sugar is in one 12-oz can of soda
 - Scoop 17 tsp of sugar into a clear plastic bag – this is how much sugar is in one 20-oz bottle of soda
3. **Distribute Worksheet 3 “How Sweet It Is”, the “Soda Free Summer” commitment cards**
 - Have students complete Worksheet 3 in small groups and discuss answers as a class. (**Answers: orange drink=18.75 tsp., sweetened tea drink=16.25 tsp, 20 oz Big Pouch=16.9 tsp. Step 3: 8 oz Rockstar has 8 tsp sugar vs. 7 tsp. in 8oz. Red Bull, 8 oz. cola has 7 tsp. sugar**)
 - Ask – HOW MANY sugary drinks do you typically have in one DAY? In one WEEK?
 - Ask – WHY do you drink sugary drinks?
 - Ask – Do you think you can drink FEWER sugary drinks?
 - Ask – Do you think you can drink MORE water?
4. **Ask students to commit to a “Soda Free Summer” by signing the commitment card.**
 - **** Teachers – We encourage YOU to make the pledge yourself in front of the students!!!****
 - Ask students to identify a drink with less sugar to replace soda.
 - Encourage students to share what they have learned about sugar with their families. Students should bring the “Soda Free Summer” commitment cards home and talk to their families about having a “Soda Free Summer”. Have the family track by initialing in the box if they have had a soda free day.

WORKSHEET 2

How Many Calories from Sugar?

Information:

- One 12-ounce can of soda costs about \$1.10 at the corner store
- There are 365 days in a year
- There are 4 calories in 1 gram of sugar
- One teaspoon of sugar is equal to 4 grams

Nutrition Facts	
Serving Size 1 Can	
<u>Amount Per Serving</u>	
Calories 140	
% Daily Value *	
Total Fat 0g	0%
Sodium 50mg	2%
Total Carbohydrates 35g	13%
Sugars 35g	
Protein 0g	

Questions:

1. Looking at this sample soda label, how many calories come from sugar?
2. If you drank one can of soda each day for a year, how many calories would you take in from soda?
3. If you drank one can of soda each day for a year, how many teaspoons of sugar would you take in from soda?
4. What are some potential negative health effects of consuming so many extra calories from added sugar?

WORKSHEET 3

How Sweet It Is

Exercise:

Look at the chart of various drinks in the "Soda Free Summer" Brochure.

1. Based on the common serving sizes you see on the chart,
 - a. Which drink has the most sugar?
 - b. Which drink has the least sugar?

2. Drinks come in all different sizes. Often, we may not realize how much sugar we are actually taking in per ounce of liquid.

What if these drink containers were all 20-ounces...

Which would have the most sugar? Which would have the least sugar? **Do the math!**

Calculation Example: 16 ounces of Kool-Aid has 8 teaspoons of sugar.

Step 1: $\frac{20 \text{ ounce Kool-Aid}}{16 \text{ ounce Kool-Aid}} = 1.25$ multiplier

Step 2: $1.25 \times 8 \text{ teaspoons of sugar} = 10 \text{ teaspoons of sugar}$

$\frac{20 \text{ ounce Orange Drink}}{16 \text{ ounce Orange Drink}} =$

_____ multiplier X _____ tsp of sugar = _____ tsp of sugar

$\frac{20 \text{ ounce Sweetened Tea Drink}}{16 \text{ ounce Sweetened Tea Drink}}$

_____ multiplier X _____ tsp of sugar = _____ tsp of sugar

$\frac{20 \text{ ounce Big Pouch}}{11.25 \text{ ounce Big Pouch}}$

_____ multiplier X _____ tsp of sugar = _____ tsp of sugar

- a. Which drink has the most sugar? _____
- b. Besides water, which drink has the least sugar? _____
- c. Are you surprised by these findings?

3. A 16 ounce can of Rockstar Energy Drink has 16 teaspoons of sugar. How does it compare with an 8 ounce can of Red Bull Energy Drink with 7 teaspoons of sugar? How do they compare with Cola?

4. What can YOU do to "Rethink Your Drink" and how will this benefit your health? _____