Supplies Needed

- Scratch paper
- Pencils or pens
- 12 oz. cola can
- 12 oz. orange juice container
- Candy bar
- 3 cookies
- Snack-sized package unsugared nuts or sunflower seeds
- Food packages and food items of interest to learners, 1-2 per learner and if needed, pre-labeled with sugar content
- Handout: "Keep Teeth Strong: Eat Less Sugar!"
- Optional: adhesive labels
- At least 100 individual-portion packets table sugar (one teaspoon sugar per packet)
- Bead necklace
- 2-3 starch-containing foods, e.g., potato, crackers, pretzels, bread, chips, noodles
- Measuring teaspoon
- Set of measuring cups (1/4-, 1/3-, 1/2- and 1-cup)

Handout: "Keep Teeth Strong: Eat Less Sugar!"

Time Allotment: 20-25 minutes

Session 9

Purpose
Learners will study the sugar content of various foods and learn to select foods based on good oral health principles.

Vocabulary
No new vocabulary

Leader Do Ahead
Get samples of sweet and savory snacks and candy typically eaten by learners for use as props. Have enough items so that each learner or team has at least one prop to study.

Label the sugar content of fresh food items (e.g., carrots, orange) which have no "Nutrition Facts" food label. This information can be derived from food composition tables (See Appendix for resources). List the grams of sugar in a common portion, e.g., 1/2 cup vegetable, 1 medium piece fruit. Or, see handout "Keep Teeth Strong: Eat Less Sugar!" To convert handout data to grams of sugar, multiply teaspoons of sugar by 4.

For learners not able to perform the math, label packages and foods with the number of teaspoons of sugar in a serving of product.

Tips for the Leader
Learners may work in teams to complete math calculations.

Teaspoon-size sugar packets are easier to handle than sugar cubes and can be purchased at most supermarkets.
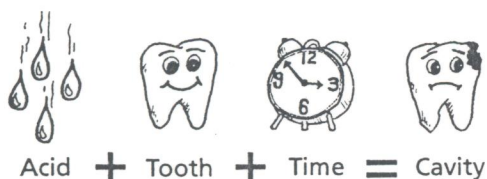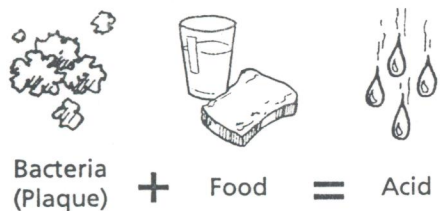
What learners will discover
Sugar in many food products can be naturally occurring and/or added in preparation; both types can harm teeth.
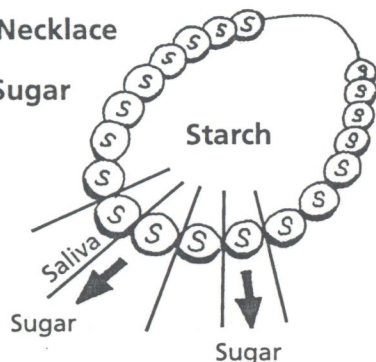
Pre-session Assessment
• **How many teaspoons of sugar do you think you eat in a typical day's snacks?** Have learners write out a typical day's intake of snacks, individually or as a group. Set aside.

• Have group rank foods, most to least, in sugar content: 12 oz. cola, 12 oz. orange juice, candy bar, three cookies, snack-sized package of unsugared nuts or sunflower seeds.

Cavity Equation

Bacteria (Plaque) + Food = Acid

Acid + Tooth + Time = Cavity

Bead Necklace

S = Sugar

Starch

Saliva

Sugar

Sugar

Nutrition Facts
Serving Size 1 cup (240mL)
Servings Per Container about 2

Amount Per Serving

Calories 110   Calories from Fat 10

% Daily Value*

Total Fat 1g	2%
Saturated Fat 0g	0%
Cholesterol 5mg	2%
Sodium 760mg	32%
Total Carbohydrate 19g	6%
Dietary Fiber 2g	8%
Sugars 7g	
Protein 3g	

Vitamin A 90%	•	Vitamin C 2%
Calcium 4%	•	Iron 6%

* Percent Daily Values are based on a 2,000 calorie diet.
Your daily values may be higher or lower depending on
your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9   •   Carbohydrate 4   •   Protein 4

Dietary Fib
Sugars 7g
Protein 3g

Teaspoons of Sugar

4) Grams of Sugar

Leader Dialog

Review the link between sugar, starch and tooth decay.

• **What we eat daily effects tooth health and overall health.** We have **choices and therefore, control, over this important area.**

• **Since plaque bacteria need food to grow and make harmful acid, we'll now compare the effects of foods on acid production.**

Review relationship between teeth, food, time and mouth acid (from Session 2). **Which foods cause the most cavities?** (Foods with sugar or starch)

• Discuss sugar and starch, using food props and bead necklace for illustration. **Starch is a long chain of sugars linked together, like this necklace is a long chain of beads linked together.**

When you eat starch, your saliva starts to break apart the starch chain into sugars. What do you remember from the experiment where a salty cracker was chewed and left in the mouth? (It started to taste sweet; starch was changing into sugars.) **The combination of sugar and starch is especially harmful to teeth. What are some foods you eat that have both?** (Cookies, donuts, bananas, sweet potatoes, cake, etc.).

• **How is "added" sugar different from "natural" sugars in food?** (There's no difference.) **They both promote acid formation and weaken teeth.**

Activity

To show sugar content in typical foods

1. Distribute foods/food packages so each learner/team has an item. Have learner/team read aloud package ingredient list to the group and help the group identify the sugars in the list. **Is the sugar naturally occurring, added or both?**

2. Show how Nutrition Labels on food packages tell the amount of sugar in one serving of the food. This allows products to be compared for sugar content.

3. Using Nutrition Labels on their sample food props, have learners/teams practice the mathematical calculations to convert grams of sugar into teaspoons of sugar. (Omit this step if group does not have these math skills.)
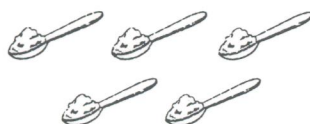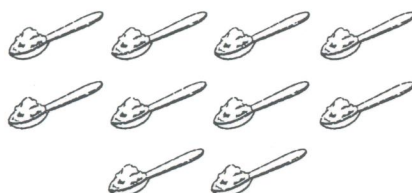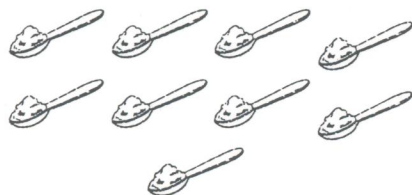
3 Cookies = 3 Teaspoons Sugar

1 Candy bar = 5 Teaspoons Sugar

12 oz. Soda = 10 Teaspoons Sugar

12 oz. Orange Juice = 9 Teaspoons Sugar

Nuts & Seeds = 0 Teaspoons Sugar

4. Have learners illustrate and present their findings to the whole group using sugar packets or sugar cubes. Discuss. **Are there any surprises? Remember, this amount is in one portion, which could be more or less than you would normally eat at one time! If you eat more, then it's more sugar!**

Summary and Post-session Assessment

1. Have group add the amount of sugar in the snack list compiled for the pre-session assessment, using information from the package label, "Keep Teeth Strong: Eat Less Sugar" handout and/or food composition tables. **What could you do to reduce the sugar and starches you eat?** (Choose less sugary or starchy items, eat smaller portions, eat less often)

2. Check the group's ranking of the foods' sugar content from the pre-session assessment, using the Nutrition Label information. How close were they to reality?