4th-5th grade Lesson Plan

Curriculum Guide Objective:
The student will be able to explain why sodas, chewing gum, and candy are bad for our teeth.

1) Guiding Questions

"How and why do cavities form on our teeth?"

a) Concepts: Recognizing sugar is an energy source for bacteria, which leads to acid forming in mouth, causing tooth decay.

b) Vocabulary: tooth decay (cavities), corrode, toothbrush, toothpaste, floss, calcify, plaque, tarter, cause and effect

2) Motivation

a) Relate to Previous Learning
Be a Smart Mouth Kid Quiz (Resources). Discuss question topics after students have completed quiz online. If computers are not available, you may print a copy of the questions and answers to ask in a large group setting, maybe forming teams for more fun.

b) Relate to Student Experience
Share dental visit stories. If children are reluctant to share or have never been, take this opportunity to share one of your own positive dental visits.

c) Type of Student Participation
Audio/Visual, Technology, Large Group Discussion, Individual Creativity, Small Group Activities, Active Demonstration

3) Strategies/Activities/Distributed Practice/Intervention

1. "What are some of your favorite foods? What about drinks?" "What if I told you that your favorite food and drink cause your teeth to decay?" "Why do you think certain foods are worse for your teeth than others?" Accept responses and explain how sugar is the number one worst food for our teeth.
2. Bad food choices cause bad dental problems when they are not balanced with healthy dental routines.

- Soft drinks, both sugar-sweetened and diet, are bad for your teeth in several ways.
    - Soft drinks are the number one way kids and teenagers ingest added sugar. The sugar in soft drinks can cause cavities and tooth decay.

- With sugar-sweetened drinks, the sugar stays on your teeth for a long time every time you drink one, making drinks especially bad for your teeth.
- Acids in regular and diet soft drinks can erode tooth enamel, the hard covering on your teeth, which can lead to more cavities and decay. Mention how soda is so acidic that cans have a specific liner on the inside to protect the metal from corroding while the soda is inside.

• Sugar-sweetened gum and hard or chewy candies, like lollipops or caramels, are bad for your teeth in the same way that soft drinks are. The sugar in those candies stays in your mouth and on your teeth for a long time, giving the sugar more time to cause cavities and decay.

3. "Let's demonstrate together what happens in your mouth when sugar is eaten." Group students together and pass out supplies, including a set of directions. You may choose to have the students mirror your demonstration or allow for the activity to be student-centered by facilitating their demonstrations as needed.

• Fill the bottle with about one inch of warm water.
• Add the entire yeast packet (bacteria in mouth) and swirl around gently to activate and dissolve the yeast.
• Add the sugar and swirl around again.
• Loosen the balloon (represents our healthy mouth) by stretching or blowing it up before placing it over the top of the bottle.
• Place the bottle in a warm place for approximately 20 minutes and watch what happens!

4. Explain how when the bacteria begin to eat the sugar, acid was formed (the gas produced by the yeast eating the sugar). Acid is a byproduct of the bacteria eating sugar in your mouth, as the gas is a byproduct of the yeast eating the sugar. Did the balloon grow a little and stop? No, the yeast continued to eat the sugar just like bacteria in your mouth, continually creating cavity-causing acid. Ask: "What do we know about acid?" Accept responses and focus on the corrosive properties of acid, while relating this to the enamel on our teeth.

5. Once the demonstration is finished, discuss how using proper brushing and flossing techniques fight against the bacteria eating plaque (sticky, film-like substance of bacteria that is constantly forming on your teeth) from forming into tartar (when plaque and minerals calcify and form a hard substance on your teeth).

Brushing

✓ Angle the toothbrush slightly up toward your gums.
✓ Brush back and forth gently in very short strokes along every tooth.
✓ When you finish brushing the outsides of your teeth, brush the insides and tops.
✓ Brush your tongue once you finfish with your teeth to remove bacteria and keep your breath fresh.

Flossing

- ✓ Wrap the floss around your middle fingers with a short section pulled tight in between.
- ✓ Use your first fingers to gently guide the floss between two teeth all the way to the gum. Use a back and forth motion if the teeth are close together.
- ✓ Wrap the floss around one of the teeth in a "c" shape to clean all around the tooth.
- ✓ Gently move the floss up and down to remove plaque without hurting your gums.
- ✓ Repeat for all of your teeth.

6. Optional: You may want to create your own "mouth" to incorporate proper brushing and flossing techniques. Depending on available time, you may have your students make their own mouth models as well. (See Extend and Refine Knowledge).

4) Assessment

- Can the student list three reasons why routine dental check-ups are important?
- Students are actively listening and responding to questions throughout lesson.
- Evaluate success/failures as children are working in their groups to demonstrate proper brushing and flossing techniques.
- Call on individual students to use their own teeth project to "reteach" the class about brushing and flossing.
- Option: Use Visit the Dentist with Marty (Resource Section) to ask review questions and revisit familiar concepts.

5) Closure

You have been fantastic scientists today! Can anyone tell me why our balloon filled with gas and how it relates to cavities? How does this affect the types of foods we eat? Can we still enjoy soda and candy? Of course!

- Choose sweets that are not sticky and so not stay in your mouth for very long. The good news is the sugar in chocolate is coated in fat, which make it slip right out of your mouth.
- Eat sweets with meals, not as a snack between meals. Your mouth produced more saliva during meals, which helps to rinse the sugar from your teeth much more quickly.
- Brush your teeth after eating sweets to get the sugar out of your mouth. Note: Instead of brushing after drinking soda, rinse with tap water (contains fluoride). The high acid content of the soda mixed with the abrasive brushing can possibly do more harm than good to your enamel.
- If you can't brush, drink water with fluoride (no bottled water) after eating sweets to rinse your mouth.
- Chew sugar-free gum, which will help your mouth produce saliva and rinse your teeth.

Can you turn to a friend and share with them one Kool fact you learned today about the affects of sugar on your teeth or proper brushing and flossing techniques?

6)Extend and Refine Knowledge

Toothbrush Tips:

- Use a soft toothbrush and brush gently to keep from damaging your teeth or gums.
- Don't share a toothbrush with someone else. You can pass germs back and forth.
- Replace your toothbrush every three to four months, or if the bristles are flattening out. A worn-out toothbrush will not clean your teeth very well.
- Use toothpaste that contains fluoride, which has been proven to prevent cavities.

Flossing Tips:

- Don't be in a hurry when you floss. Take your time to remove all the plaque or food from between your teeth.
- Floss everyday at a time that works for you. It is more important to floss daily than it is to floss at a certain time.
- Use as much floss as you need, generally about 18", to clean between each of your teeth with a clean section of floss.

3.2.1. Rule: Eat 3 healthy meals, brush 2 times a day, floss 1 time a day.

1) To Tell the Tooth Game (Resources)
2) Visit the Dentist with Marty (Resources)
3) Mouth Model Activity

- Cut foam board to size.
- Cut and glue red or pink felt (tongue) to board. Optional: Cut a bigger piece of felt, staple ⅓ of the outside to board, stuff with filling (of any kind) and staple remainder shut. This will provide a 3-D tongue.
- Glue individual egg cartons (you may choose to have them pre-cut for your class or not) around tongue to form teeth.

7) Assessment/Student Products and Performances/Technology

Follow up with a group discussion about why soda, chewing gum, and candy are bad for our teeth. Observe conversations during demonstration and address any misconceptions or questions. Be sure to mention how the Yeast and Sugar demonstration could be done at home with a parent to teach them what they learned today!

8) Homework

Send home Kool Facts Sheet.

9) Materials

Pintables:
Yeast and Sugar Activity Sheet

Materials:

a) Packets of Yeast (1/group)
b) Small, Clean, Clear Plastic Bottle (ask students ahead of time to bring them in)
c) Sugar

Optional:
Scissors
Yarn (floss)
Glue
Egg Cartons (1/student or 1/group)
Foam Board
Filling
Red/Pink Felt

10) Resources

National Education Standards
- NS.K-4.1 SCIENCE AS INQUIRY
- NS.K-4.3 LIFE SCIENCE
- NPH-H.K-4.3 REDUCING HEALTH RISKS
- NPH-H.K-4.6 SETTING GOALS FOR GOOD HEALTH
- NA-VA.K-4.1 UNDERSTANDING AND APPLYING MEDIA, TECHNIQUES, AND PROCESSES

Kool Smiles Dental Education
Websites:
- http://www.ada.org/379.aspx - Visit the Dentist with Marty (Fantastic interactive audio book provided by the American Dental Association.)
- http://www.educationworld.com/standards/index.shtml - National Education Standards
- http://www.mouthhealthy.org/en/for-kids/for-kids-and-preteens/games-and-quizzes/smart-mouth-quiz/ - Be a Smart Mouth Quiz
- http://www.mouthhealthy.org/en/for-kids/for-kids-and-preteens/games-and-quizzes/totellthetooth/ - To Tell the Tooth Game

What Happens In Your Mouth When Sugar Is Eaten?

Materials List

- A small, clean, clear plastic bottle
- A small balloon
- 1 packet of yeast
- 1 teaspoon of sugar
- Some warm water

Step 1: Fill the clear bottle with one inch of warm water.

Step 2: Pour one packet of yeast and one teaspoon of sugar into the bottle of water.

Step 3: Stretch out the opening of the balloon

Step 4: Stretch the opening of the balloon over the top of the bottle.

Step 5: Observe your results!