# Tooth Tutor

**First Grade**

## Goal/Purpose of Lesson
Understanding the relationship between plaque and tooth decay will help motivate students to practice preventive dental care.

## Student Learning Objectives
Students will be able to:

- identify the different parts of the tooth
- describe the progression of decay
- identify brushing their teeth with fluoride toothpaste as a way of reducing decay

## Teacher Background Information
Tooth decay is a complex infectious disease process which involves three factors: teeth, bacteria in plaque, and refined carbohydrates. When bacteria multiply on tooth surfaces the result is the formation of a sticky, colorless substance called plaque. Every time we eat or drink fermentable carbohydrates (cooked starches or sugar) the carbohydrates are used by the bacteria in the plaque and the by-product is an acid. This acid can desolve (demineralize) the tooth, which is the beginning of the cavity process.

### The Decay Process

1. The bacteria in plaque use food to make acid.

2. The acid breaks down the enamel structure of the tooth.

Most eating occasions include a fermentable carbohydrate in one form or another. These carbohydrates can cause a plaque acid attack that over time can lead to demineralization (breakdown) of the tooth enamel. However, chewing stimulates the salivary glands to produce saliva. The saliva will clear carbohydrates from the teeth, neutralize acids,
inhibit the breakdown of the enamel and, if fluoride is present, rebuild the enamel once a cavity has begun. If the acid is not neutralized, the acid attack continues until the tooth develops a cavity. If the cavity is not repaired, the decay spreads through the dentin and eventually reaches the pulp. The result can be an abcessed tooth.

**Tooth Trivia**

A riddle: What two letters of the alphabet make us lose our teeth?
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You will need

- A knife
- An apple that has been prepared two days before the lesson is to be taught.

Make a hole in an unbruised apple by using a knife to pierce the apple about one inch deep. Remove a piece of apple about the diameter of the knife. Place the apple in a bag for a few days before the lesson.

- Sheet of construction paper for each student
- Glue for students to share
- Transparency #1, “Parts of a Tooth”
- Poster, “Parts of a Tooth” (in Tooth Tote)
- Transparency #2, “Growth of a Cavity”
- “Growth of a Cavity” Worksheet for each student
- Parent/Guardian Letter for each student

Procedure

1. Show the students the apple and describe what you did to prepare the apple.

2. Cut the apple through the decayed spot. Students should observe the progression of decay in the apple. Allow students time to discuss their observations.

3. Point out to the students that what they have observed is the beginning of decay. The longer the hole was in the apple, the more the area around the hole decayed.

4. Explain that today you will be talking about how a similar thing happens to teeth when they have a hole or cavity.
5. Show the transparency or the poster of the tooth. Point to and name the different parts of the teeth. The enamel of the tooth protects the inside of the tooth just like the skin of the apple protects the inside of the apple. Decay starts in the **enamel** of the tooth. It can spread into the **dentin**. The cavity can progress until, finally, all the tooth is involved. If this cavity is not filled by a dentist, the tooth may have to be pulled.

6. Explain that food breaks down into simple sugars and interacts with plaque (bacteria) to make acid. Acid can then destroy the tooth enamel. When acid attacks the tooth, that is called decay. That is why it is important to brush their teeth with fluoride twice a day, to keep the acid from hurting their teeth.

7. Show the “Growth of a Cavity” Transparency #2 and point out how each tooth shows more decay.

8. Ask the following questions to see what the children know about prevention:
   a. What can you do to prevent cavities from forming? (Eat healthy food, brush teeth every day with fluoride toothpaste and see the dentist regularly, have sealants placed on teeth.)
   b. What should you do if you have a cavity? (Go to the dentist.)

9. Hand out the worksheet and construction paper. Explain that they are to cut out the pictures of the teeth and glue them on the paper, putting them in the order that shows how cavities grow.
Summary:
Decay damages teeth. Brushing your teeth at least twice a day with a fluoride toothpaste to remove the plaque can help keep teeth cavity free and healthy. It is important to see a dentist regularly to see if cavities exist and to fix any as soon as possible so that the decayed area doesn’t get bigger.

Extension

To demonstrate the decay process, place a cleaned chicken leg bone (a calcified substance somewhat like teeth) in a jar with a tight fitting lid. Fill the jar with a soft drink and put on the lid.

Over the next two weeks, periodically check the effect of the soft drink on the bone, showing how the bone is softened by the acid in the soft drink. This parallels how acid breaks down (demineralizes) tooth enamel and can progress to a cavity. This is why soft drinks should be limited.

You may also notice an acid smell to the contents of the jar after a few weeks. (Just like bad breath!)
Parts of a Tooth

1. Enamel
2. Pulp
3. Gum
4. Bone

Crown
Root
Growth of a Cavity
Growth of a Cavity
Dear Parents/Guardians,

Our first grade class has been studying dental health this week in a program called the Tooth Tutor. We have discussed the importance of brushing our teeth twice a day with a fluoride toothpaste. We thought you might like to review brushing and toothbrush care with your child. Here are a few tips that may be helpful.

**Facts About Brushes**

A brush which will be effective is:

- Appropriate for the size of the mouth and teeth (small enough to reach all areas of the mouth). “Junior” brushes are available for small children.
- Soft so as not to injure the gums or teeth.
- In good condition.

To prevent damage to a toothbrush do not:

- Rinse in very hot water.
- Bite or suck the bristles.
- Store in a place where it cannot dry out.
- Store where it touches other toothbrushes.
- Store where it touches other toothbrushes.

Replace toothbrushes after colds or infections.