

Detecting Plaque

Overview: The buildup of things like food and bacteria where your gums and teeth meet, and also between your teeth, is called plaque. Where plaque lives is also where the bacteria turns the sugar in your mouth into harmful acids that attack your teeth's enamel and can lead to gum disease. Regular brushing is a great way to remove plaque and keep your mouth healthy.

Materials

- red disclosing tablets
- clear plastic cup
- mirror
- red crayon
- water

Experiment

1. Disclosing tablets are designed to identify plaque by turning it red. Remove a pill from the packaging and put it in your mouth. Chew it up thoroughly but don't swallow it. *Be very careful not to get any of the dye on clothing or anything else that might stain. The color is very difficult to remove!*
2. Take the cup full of water and rinse out your mouth very well. Spit the water out into the sink. Check your mouth in the mirror. All of that red is plaque! Draw a picture of your mouth and use the red crayon to note where the plaque is attacking your teeth and gums.
3. You should have a total of four pills in the package. You can test other members of your family, or if you would prefer, test yourself over a period of a few days after you have had a chance to observe and identify where you should be doing a better job of tooth-brushing.

Reading

Bacteria live in your mouth all the time – a little gross right? This is completely normal and some of the bacteria are the helpful kind. However, certain types of bacteria really latch on to the enamel of your teeth. Enamel is the protective surface that covers teeth. Enamel is made up of minerals, like calcium, and it's very durable. But unfortunately plaque isn't completely impenetrable. If bacteria isn't removed by brushing and flossing, those bad bacteria on teeth will multiply. The bacteria then start to form a sticky film called plaque. It's plaque that causes cavities. When you eat sugary foods and don't brush and floss afterward, plaque turns the sugars into acid. The acid eats away at the enamel in your teeth, creating holes in the enamel and, eventually, dreaded cavities.

When you chew the tablets, they start to dissolve and mix with your saliva. This makes a water soluble dye that affixes to the bacteria and other particles in your mouth. The dye is absorbed by the bacteria, so it holds onto it even after your mouth is rinsed. This enables you to identify the unbrushed areas in your mouth. You'll probably also find your toothbrush turns purple along with your tongue! That's where bacteria often lives besides on your teeth.

Have you ever counted your teeth? They started to appear when you were a baby – about 6 months old or so. Kids have 20 deciduous, or baby teeth. These will fall out and the adult teeth grow in to replace them. Adults usually have 32 total teeth.

Detecting Plaque Data Table

Date/Time	How Long Did You Brush Your Teeth?	Draw a Picture of Your Mouth

Exercises

1. Why does this experiment work at detecting plaque?
2. How can dentists and moms use this to make sure you’re doing a good job brushing?
3. What is plaque, and why is it bad for you?

Answers to Exercises: Detecting Plaque

1. Why does this experiment work at detecting plaque? (Disclosing tablets are designed to identify plaque by turning it red.)
2. How can dentists and moms use this to make sure you're doing a good job brushing? (As a pop quiz!)
3. What is plaque, and why is it bad for you? (The buildup of things like food and bacteria where your gums and teeth meet, and also between your teeth, is called plaque. Where plaque lives is also where the bacteria turns the sugar in your mouth into harmful acids that attack your teeth's enamel and can lead to gum disease.)