

Acid and Your Mouth (Middle School)

This experiment demonstrates how sugary foods mix with plaque in the mouth to create acid that can cause tooth decay. It meets the National Science Education Standard F—Science in Personal and Social Perspectives.

Materials:

- Litmus paper (with range of at least 5.0-7.5)
- Sugary foods, such as: candy, cake, brownies, pie, and cookies
- Water (either bottled or have cups available for each student)
- Activity Sheet

Procedure:

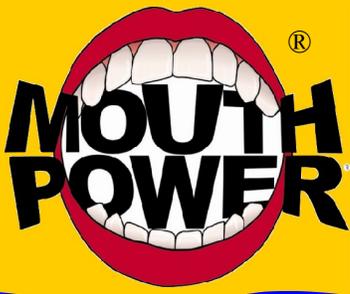
Day One

1. Have a class discussion about food and how different types of food affect teeth. Make sure to discuss sugary foods. Ask students what happens to their teeth if they eat sugary foods.
2. Explain that the students will be doing an experiment today to see how sugary foods affect their teeth. Divide the class into groups of 4-5 students for the experiment.
3. Give each student water to drink before the experiment to neutralize the pH in their mouths. Have each student test their mouth with litmus paper to find the starting pH level. Record on activity sheet.
4. Distribute one sugary snack to each group (check food allergies beforehand). Each group will only test one type of food. Let students predict which food will have the greatest effect on their teeth. Give each group a few minutes to eat their food.
5. Once the food is eaten, have the students test their mouths again using the litmus paper. Have the students record their pH levels every 5 minutes for the next 30 minutes. In groups, have the students discuss what the food is doing to their mouths.
6. Gather the class together for a group discussion to discuss how the food affected their mouth. Talk about acid attacks and how sugary foods mix with plaque in the mouth to produce acid that can cause tooth decay. Have a member from each group record their group's pH levels for the food they consumed on the whiteboard. Discuss which foods produced the most acid.

Day Two

1. Repeat this experiment. Have each group drink water after they eat the same food they had on day one. After every 5 minute interval (for 30 minutes), have the students drink water to see how it can affect the pH level in their mouths.
2. Record group findings as a class and discuss how water helps neutralize the mouth after eating sugary foods.
3. Discuss how food choices affect our oral health and talk about better food choices.





Name: _____ Date: _____

Acid and Your Mouth

Starting pH level: _____ Which food will affect the pH level the most? _____

Type of food eaten: _____

	DAY ONE	Group Members pH Levels				
	Your pH Level					
1 st 5 min. interval						
2 nd 5 min. interval						
3 rd 5 min. interval						
4 th 5 min. interval						
5 th 5 min. interval						
6 th 5 min. interval						

What is happening to your mouth during this experiment? _____

How might this affect your teeth? _____

According to class data, which food produced the most acid in the mouth? _____

	DAY TWO	Group Members pH Levels				
	Your pH Level					
1 st 5 min. interval						
2 nd 5 min. interval						
3 rd 5 min. interval						
4 th 5 min. interval						
5 th 5 min. interval						
6 th 5 min. interval						

How does drinking water after eating sugary foods affect your mouth? _____

What snack choices are good for your teeth? _____



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