

LESSON 03:

Egg Experiment



OVERVIEW

Children will learn how teeth can be stained by what they eat and drink, especially if the correct brushing techniques are not used.

Themes Met:

- #1 Brushing teeth at least twice a day.
- #2 Visiting the dentist regularly.
- #3 The importance of good nutrition and understanding which foods help teeth and which foods hurt teeth.

Extensions/ Adaptations:

There could be enough eggs for small groups to each observe their own egg in a particular drink. Different types of drinks could include fruit punch, coffee, etc.

SUPPLIES

- 2 clear disposable plastic cups
- 1 can of dark soda pop
- Small carton of milk or water
- 2 hardboiled eggs
- Toothpaste
- 2 toothbrushes
- Paper/journals
- Pencils/crayons/markers

STEPS

Before Lesson: Hard-boil two eggs.

1. Show children the eggs. Explain that the outside of the egg is made up much like the enamel of our teeth. Ask children what purpose they think the shell serves. Clarify that the hard shell protects the soft egg on the inside, just like enamel protects teeth.
2. Fill 1 plastic cup with soda pop and 1 plastic cup with milk or water. Explain to the children that they are going to observe what happens when you place one egg in the cup of soda pop, and one in the milk/water.
3. Have children observe the color of both eggs before placing them in the cup. The children may draw the egg and cups of soda pop/milk/water.
4. Place one egg in each cup and let them sit overnight. Ask children what they think will happen to the egg in the soda. In the milk/water?
5. The next day, have children observe the eggs in the different liquids by gently holding up the eggs. Children should notice that the egg in the soda pop is dark in color and the one in milk or water has not changed. (Children may continue their drawing to note the changes in the eggs.)
6. Demonstrate proper brushing techniques by using a toothbrush and toothpaste to brush the discolored egg to show stain removal. (A volunteer from the class may do this, too.) Explain that milk and water are the best drinks for our teeth. It is good to limit sugary drinks like pop and juices. Remind children to brush at least two times a day to remove things that may stain or hurt their teeth.

HighScope Curriculum Content:

Science & Technology: Exploring and describing similarities, differences, and the attributes of things.

Head Start Domains:

Science: Develops increased ability to observe and discuss common properties, differences and comparisons among objects and materials.

discussion:

Ask children to consider why they think the color change, or lack of color change, occurred. After the children share their ideas, discuss that soda pop is full of sugar and is very bad for our teeth. If it were to stay on our teeth we could get cavities and discolored teeth. Brainstorm ideas to remove some of the sugar and staining (such as brushing).

(Peanut) Butter Fingers

Most kids know they need to brush their teeth twice a day, but are they cleaning between their teeth as well? This flossing demonstration inspired by the [Nova Scotia Dental Association](#) shows how much can be left behind by brushing alone.

You'll need:

- A rubber glove
- A jar of peanut butter (Note: If peanut allergies are an issue, you can use another sticky food product like nut-free sunflower butter, marshmallow fluff or jelly.)
- A toothbrush
- Toothpaste
- Dental floss

Instructions:

Put the glove on your hand and smear peanut butter between your fingers.

Hold your hand up in front of you like you're about to high five, with all of your fingers held tightly together and pointing upward.

Explain that your fingers represent teeth and the peanut butter is like the food and bacteria that get trapped between them throughout the day.

Using the toothbrush and toothpaste, try to clean away the peanut butter from between your fingers while keeping your fingers tightly pressed together.

When you've finished, spread your fingers apart to show how much peanut butter is still stuck between them.

Pressing your fingers back together, have the child try to use floss to clean the peanut butter from between your fingers.

Lesson Learned:

While brushing your teeth removes the food and bacteria that stick to the outside of your teeth, there's also bacteria and food between the teeth that brushing can miss. That's why it's so important to clean between your teeth every day as well – to remove what toothbrushes can't reach.

Additional Demonstrations:

- [Building egg-celent healthy teeth](#)
- [An apple a d\(ec\)ay](#)



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An Apple A D(ec)ay

The hard enamel surface of your teeth protects them, much like the skin of an apple protects the fruit inside. This demonstration from [Star Smilez](#) shows what can happen to teeth when a cavity develops and allows bacteria inside.

You'll need:

- 2 apples
- 2 paper bags
- A sharpened pencil
- A sharp knife

Instructions:

Using the pencil, poke a hole in one of the apples. This represents a break in a tooth's enamel.

Place the apples – the punctured apple and the control apple – in separate paper bags and leave them there for at least 24 hours.

After letting the apples sit in the bags for at least 24 hours, removed them and use the knife to cut both of them in half. The control apple should appear normal, while the punctured apple has begun to decay.

Lessons Learned:

Just like an apple's skin, enamel is an important barrier for keeping bacteria out of your teeth. When that enamel shield is broken – like when you get a cavity – it opens the door for bacteria to get inside your teeth and cause decay. That's why it's important to brush your teeth twice a day with a fluoride toothpaste to remove germs and strengthen your enamel.

Additional Demonstrations:

- [Building egg-celent healthy teeth](#)
- [\(Peanut\) butter fingers](#)



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Building Egg-celent, Healthy Teeth

Sugary drinks like soda may be tempting, but they can be harsh on the hard outer shell of your teeth (enamel). This demonstration shows what sugary and acidic drinks can do to your teeth, as well as the protective abilities of the fluoride found in your toothpaste or mouth rinse.

You'll need:

- 2 fresh eggs (make sure there aren't any cracks!)
- 1 can of cola
- Fluoride mouth rinse (you can find it in the dental aisle)
- White vinegar
- 4 small, clear plastic containers (big enough to hold an egg)

Instructions:

Place the eggs in two of your plastic containers. Fill one container with cola and the other with fluoride mouth rinse. Let the eggs sit in the liquids overnight.

Remove the eggs from the liquids and place them in the remaining containers. Fill both containers with white vinegar and observe their reactions. The cola egg should become covered in small bubbles, while there should be no reaction on the fluoride egg.

Lesson Learned:

The acids in the cola have weakened the eggshell, making it more vulnerable to the acid in the vinegar. The bubbles on the shell are caused by air escaping the egg through the thinner, weaker shell.

The vinegar's acid doesn't have any effect on the egg that was soaked in fluoride mouth rinse because the fluoride strengthened the shell in the same way it strengthens teeth. That's why it's so important that kids (and parents!) brush their teeth twice a day with fluoride toothpaste and drink water with fluoride from the tap.

Additional Demonstrations:

- [An apple a d\(ec\)ay.](#)
- [Peanut butter fingers](#)

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