

A PASTE WITH A TASTE

Title: **A Paste With A Taste**

Level: **K-12**

Day/Time:

[Academic Expectations](#)

[Core Content for Assessment:](#)

Objective: To allow students to produce a "marketable" product used by most people every day, that is made from minerals. Both the abrasive and cleansing compounds, calcium carbonate and sodium bicarbonate found in toothpaste, are minerals.

Materials (for 8 groups of 4):

Calcium carbonate (finely powdered unflavored TUMS will work)

Sodium bicarbonate (baking soda)

32 small plastic cups

32 Popsicle sticks for stirring

8 eye droppers

8 plastic spoons

Water

Assorted food colors and flavorings

Have some commercial toothpaste samples available.

Activity:

Basic recipe for toothpaste is:

1/2 teaspoon calcium carbonate, 1/4 teaspoon sodium bicarbonate in a small plastic cup, add just enough water (with eye dropper) to make a paste.

Have the students taste the basic recipe and discuss possible improvements. Divide the class into groups of 4 and let them come up with some solutions to make the basic recipe more appealing to other children. Remember, the purpose is to produce the most "marketable" toothpaste. Each group can decide on 4 samples with each member of the group responsible for one, or it can be done as a group project with one sample per group. (As the samples are quite small, only small amounts of color and flavoring are needed.) Students or group will have to keep a record of their recipe and submit it with the sample for judging.

Each group will be responsible for submitting one sample to the panel of judges, which can be another class, parents, etc, for determining the winner. Have a prize for the winning sample.

Discussion:

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How did the home made toothpaste compare to commercial products? What other mineral is added to toothpaste to fight cavities? How many of the commercial toothpastes had minerals in them? Have the students compare the prices of commercial toothpaste in relation to the number of mineral ingredients? Which were more expensive? Have the class develop an advertising campaign for the winning toothpaste.

Provided by Women In Mining