Name Period Date

Does Your Chewing Gum Lose its Sweetness?

Have you ever wondered why gum loses its sweetness so quickly? Does it seem like the gum gets smaller after you chew it? Today we are going to conduct a scientific experiment to test a hypothesis.

**Hypothesis:**

**Procedure for Part 1:**

1. Make a small weighing boat out of a few square inches of foil. This can be made by folding two or three layers of aluminum foil into a 1-2 inch square, and then turning the edges up to make sides about ¼-½ inch high.
2. Use a permanent marker to label your boat with your name or initials, and the date.
3. Obtain a piece of gum from the teacher.
4. Use your weighing boat to find the mass of an unwrapped but unchewed piece of gum. Measure to the nearest 0.1 g. DO NOT THROW AWAY YOUR WEIGHING BOAT! Remember to record the measured mass.

***Mass of pre-chewed gum***

1. Chew the piece of gum for exactly 15 minutes. By this time the gum should have little or no sweetness left in its flavor.
2. Put the gum back on your weighing boat and put on the class tray. The gum needs to dry for at least two full days, and preferably three or four days.

**Procedure for Part 2: After several days have gone by.**

1. Find and record the mass of your piece of dried, chewed gum.

***Mass of chewed and dried gum***

1. Compare the unchewed and chewed masses to determine the amount of mass lost due to chewing, and calculate the percent of mass lost. Here are the equations you will need for your calculations:

Amount of mass lost due to chewing = unchewed mass – chewed mass

Percent of mass lost = amount of mass lost due to chewing divided by the unchewed mass x 100

***Amount of mass lost due to chewing***

***Percent of mass lost***

1. Using the nutrition information about the gum you chewed, calculate the percentage of sugar in the gum.

***Percentage of sugar in the gum***

1. Is this percentage of sugar close to the percentage you lost when chewing the gum?

**Questions to Ponder:**

1. Was there a control for the experiment?
2. How do we know that an unchewed piece of gum wouldn’t lose just as much mass by sitting and drying for the same amount of time in the same place that a chewed piece did?
3. What should the control have been?
4. Which variables were kept constant and which were not?
5. What happened to the sugar that was lost in the chewed gum?