Bubble Gum Lab

Background: It is often useful to know the percentage by mass of a particular element in a chemical compound. Suppose the compound potassium chlorate, $KClO_3$, were to be used as a source of oxygen. It would be helpful to know the percentage of oxygen in that compound. To find the mass percentage of an element in a compound, one can divide the mass of the element in a sample of the compound by the total mass of the sample, then multiply that number by 100.

$$\% \text{ element in a compound} = \frac{\text{mass of element in sample compound}}{\text{mass of entire compound}} \times 100$$

Materials Needed:

Electronic Balance Paper cups (one per group) Gum (one piece per person)

Target: By the end of this lab exercise you will demonstrate your understanding of percent composition by calculating the percentage of gum that is sugar.

Procedure:

1. Obtain all necessary supplies.
2. Mass the empty cup and write your mass in the table below.
3. Mass the cup with the number of pieces of gum your group will chew. Record that mass in the table
4. Chew the gum for the time specified.
5. At the end of the chewing period, take the gum out of your mouth. Try not to get too much saliva mixed in with the gum, as this will cause errors. Put ***all*** the chewed gum into the paper cup and take the mass.

Data Table:

Brand of Gum:	
Number of Pieces Chewed:	
Mass of the Empty Cup	
Mass of the Cup and UNCHEWED gum	
Mass of the Cup and CHEWED gum	
Mass of the sugar dissolved	
Percentage of sugar in gum	

Calculations: (SHOW ALL WORK - NO WORK GETS YOU NO CREDIT!!)

1. What is the mass of the sugar that was dissolved by your group's chewing all the pieces of gum?
2. Calculate the percentage of sugar in the gum.

Analysis Questions:

1. Would your dentist recommend chewing this gum? Why or Why not?
2. What assumption are you making about the mass of the sugar and the difference in the masses of the gum before and after chewing?
3. How would using more pieces of gum affect the results of this lab? Explain.