PBL: How Much Sugar is in that Gum?!?! 

 Chewing gum is common place, people do it everywhere! But gum is loaded with sugar (or sugar substitutes). How much sugar are you actually eating every time you chew a piece of gum? In today’s activity, you will calculate the percent of sugar (by mass) that makes up a piece of chewing gum. You will also compare your percentage to the manufacturer’s percent of gum.

Procedure:

1. Obtain a piece of gum, record its name in your data table.
2. Mass and record the weight of the gum and its wrapper.
3. Chew the gum vigorously for 10 minutes or until the flavor seems to disappear. While chewing, weigh the empty gum wrapper and record.
4. After chewing, place the gum back in its wrapper and leave it to dry out for 10 minutes. Then weigh the gum and wrapper again.

Data:

|  |  |
| --- | --- |
| Gum: |  |
| Mass of unchewed gum + wrapper |   |
| Mass of chewed gum + wrapper |   |
| Mass of wrapper |   |
|  |  |

Analysis:

Complete the analysis. Show all your mathematical work and include units Determine the mass of the unchewed gum.

1. Determine the mass of the chewed gum.
2. Determine the mass of the sugar (sugar substitute) you ingested.
3. To calculate the percent of sugar in the gum you chewed, use the following equation.

**% sugar chewed = mass of sugar ingested × 100**

 **mass of unchewed gum**