

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**Essential Question:**

How do you find the percentage composition of sugar in bubble gum and water in popcorn?

**Percentage Composition**

*In this experiment, you will determine the % of sugar in bubble gum and the percentage of water in popcorn.*

**BUBBLE GUM**

1. You will need one person in your group to volunteer to chew gum (must chew for 15 minutes).
2. Measure the mass of the unchewed gum still in its wrapper (note flavor).
3. Unwrap gum (save wrapper) and chew gum for 5 minutes.
4. Place gum back on wrapper and reweigh.
5. Repeat for two more 5 minute chew cycles, reweighing after each cycle.
6. Calculate the % of mass lost by the gum. This is the % of sugar that was in the gum.

$$\% \text{ sugar} = (\text{total mass lost} \div \text{original mass of gum}) \times 100$$

7. Draw a graph of mass of gum vs. time, and explain what the graph shows



8. Compare results involving various flavors of gum.
9. Complete a lab report. Write a conclusion paragraph.

**POPCORN (Use Aluminum foil to make bowls similar to jiffy pop)**

1. Mass 3 different size samples of unpopped and popped corn. Your smallest sample should be 25 kernels.
2. For each example, calculate % of mass lost by popped corn. This represents the % of water that was in the corn.  
$$\% \text{ water} = (\text{difference in mass between unpopped and popped Corn} \div \text{mass of unpopped corn}) \times 100$$
3. Calculate the average % of water in your 3 samples.
4. Complete a lab report. Write a conclusion paragraph (include an explanation of how popcorn pops and how age may affect the popping process).

**LAB REPORT FORMAT:**

Title, Purpose, Data Table, Calculations, Graph (bubble gum only), conclusion

## Percentage Composition

### Part I: Bubble Gum

Mass (unchewed gum in wrapper)	
Mass (after 5 minutes)	
Mass (after 10 minutes)	
Mass (after 15 minutes)	

% Composition of sugar:  $\frac{\text{total mass lost}}{\text{original mass of gum}} \times 100 =$

***Draw a graph of mass of gum vs time and explain what the graph shows.***

### Part II: Popcorn

Sample #	Mass (unpopped)	Mass (popped)

% Composition of water:  $\frac{\text{difference in mass between popped and unpopped corn}}{\text{mass of unpopped corn}} \times 100 =$

Sample 1:

Sample 2:

Sample 3:

Average % of water in your 3 samples: