

Unit Assessment



1. Mia, Kayla, and Eli have all set up lemonade stands in their neighborhood. Each person started with the same amount of lemon juice and then added different amounts of sugar, as shown in the table below. Fill in the table with the total weight of each person's lemonade.

	Lemon Juice	Sugar	Total Weight of Lemonade
Mia	200 grams	10 grams	<div style="border: 1px dashed black; height: 20px; width: 100%;"></div>
Kayla	200 grams	20 grams	<div style="border: 1px dashed black; height: 20px; width: 100%;"></div>
Eli	200 grams	30 grams	<div style="border: 1px dashed black; height: 20px; width: 100%;"></div>



2. Sadly, Mia, Kayla, and Eli didn't sell any lemonade. So they all decide that they will turn their lemonade into popsicles. All they do is take the lemonade they made the day before and freeze it. Circle **True** or **False** for each sentence.

- | | | |
|------|-------|---|
| True | False | Eli's popsicles will taste sweeter than Mia's popsicles or Kayla's popsicles because there is more sugar in them. |
| True | False | Eli's popsicles will weigh slightly more than Mia's popsicles or Kayla's popsicles because there is more sugar in them. |
| True | False | Eli's, Mia's, and Kayla's popsicles will all be exactly the same. |

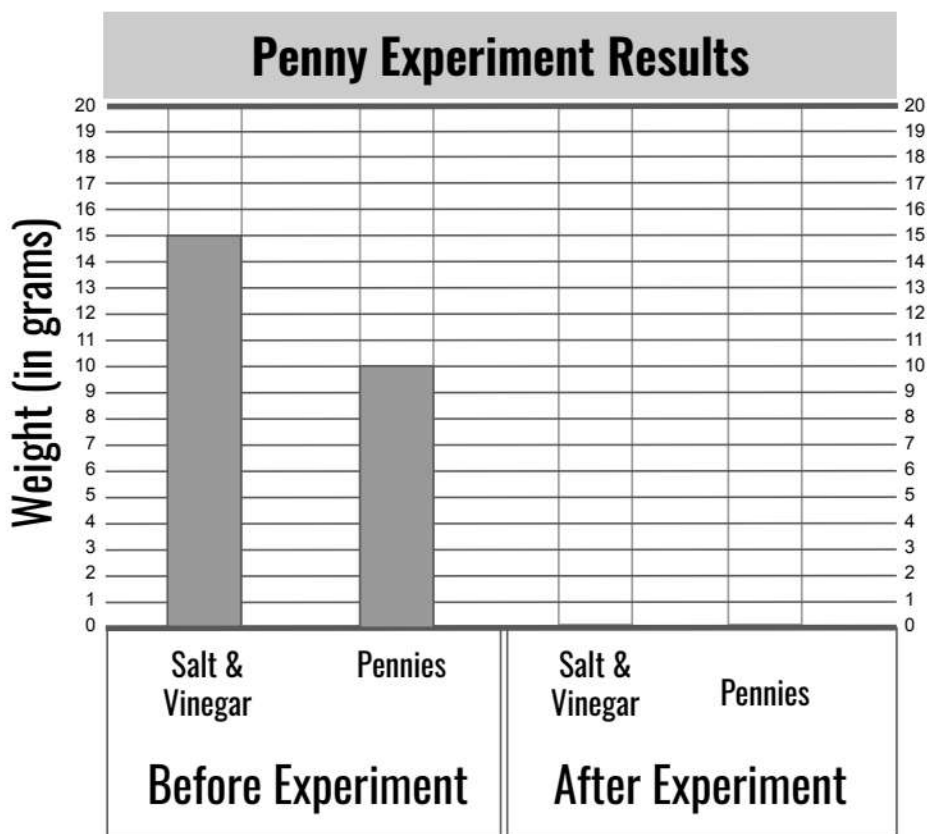
Laila empties her piggy bank and finds ten dull, brown pennies. Laila wants her pennies to look shiny, so she performs an experiment. First, she pours salt and vinegar into a container. Then, she adds the ten pennies and waits a few minutes. When she takes the pennies out of the salt and vinegar solution, they look shiny and new!

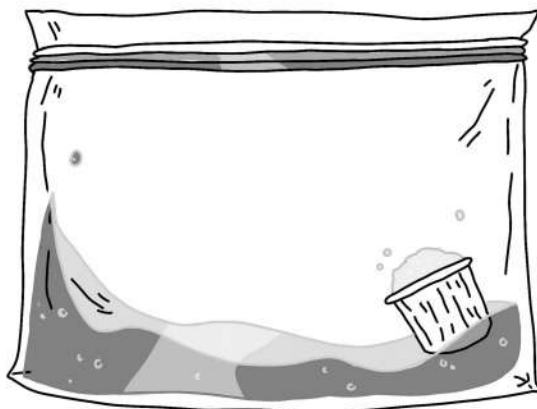


3. If Laila weighs the salt and vinegar solution and the pennies **after** the experiment, what do you think she will find?

- The solution will weigh more and the pennies will weigh less after the experiment.
- The solution will weigh less and the pennies will weigh more after the experiment.
- The solution will weigh the same and the pennies will weigh the same after the experiment.
- The solution will weigh the same and the pennies will weigh less after the experiment.

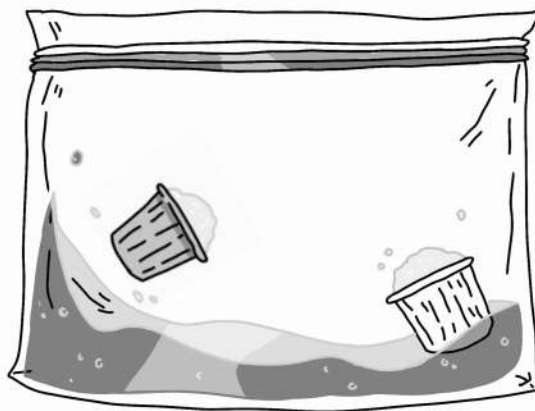
4. The graph to the right shows how much the salt and vinegar solution weighed before the experiment. It also shows how much the pennies weighed before the experiment. Laila weighs the pennies after the experiment and finds that they weigh 8 grams. Complete the bar graph to show how much the pennies weighed and how much the salt & vinegar solution weighed **after** the experiment.





5. The picture above shows a sealed plastic bag filled with vinegar at the bottom. A cup of baking soda is about to mix with the vinegar. When the baking soda mixes with the vinegar, bubbles will form and the plastic bag will start to expand. Why does the bag expand? In the picture above, draw what happens inside the bag. Use arrows and words to explain your drawing.

6. If two cups of baking soda are added to the vinegar in the bag, describe how that would change your model from Question 5.












7. Emi drops a cup of baking soda into a glass container that has vinegar at the bottom of it. Then, she quickly puts a balloon on top of the container. What do you predict will happen to the balloon?

- The balloon will get bigger because it will become filled with solid (baking soda) particles that are too small to be seen.
- The balloon will get bigger because it will become filled with liquid (vinegar) particles that are too small to be seen.
- The balloon will get bigger because it will become filled with gas particles that are too small to be seen.
- The balloon will stay the same because it will not become filled with anything.












Priya needs some baking **soda** to bake a cake. She has three white powders (salt, baking **soda**, and baking **powder**) in her kitchen, but they don't have labels. She knows that baking **soda** will bubble and fizz if mixed with vinegar, but not with water. Baking **powder** will bubble and fizz if mixed with vinegar. It also bubbles when mixed with water. Salt does not bubble with vinegar or water. Priya conducts the following two experiments in her kitchen.

Vinegar Experiment

	+		=	
Powder A		Vinegar		
	+		=	
Powder B		Vinegar		
	+		=	
Powder C		Vinegar		

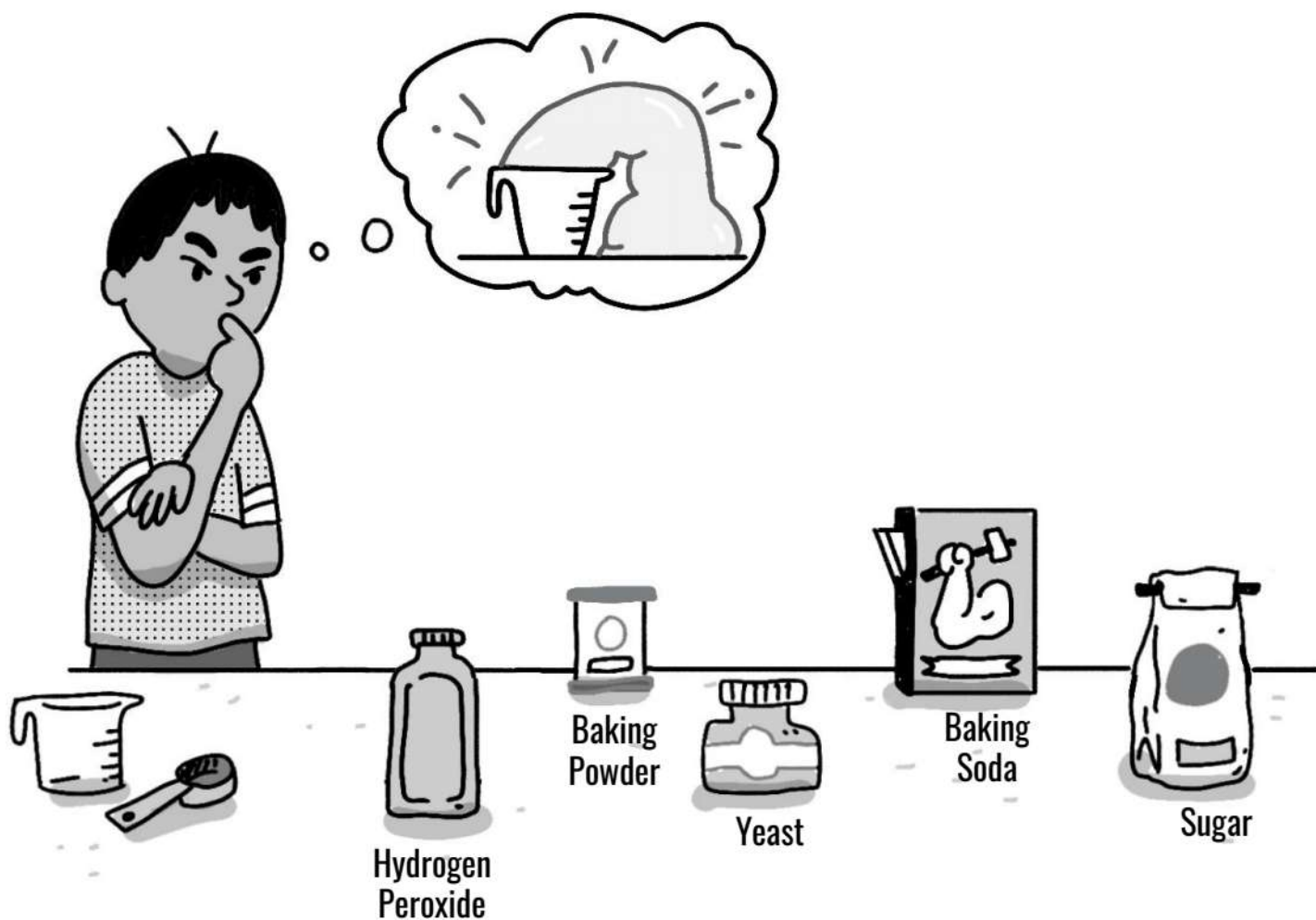
Water Experiment

	+		=	
Powder A		Water		
	+		=	
Powder B		Water		
	+		=	
Powder C		Water		

8. If Priya only looks at the results of the Vinegar Experiment, what can she figure out?

- Either B or C is the baking soda. A must be the salt.
- Either A or B is the baking soda. C must be the salt.
- Either A or C is the baking soda. B must be the salt.
- Priya can't figure anything out if she only looks at the Vinegar Experiment.

9. Which of the three powders (Powder A, Powder B, or Powder C) do you think is the baking **soda**? Why do you think that? Support your answer with evidence from the experiments.



10. Samuel wants to make something called “elephant toothpaste.” It’s a chemical reaction that creates lots of white foam that looks like toothpaste for an elephant! Samuel knows that the reaction happens when two ingredients are mixed together. He also knows that one of the ingredients is hydrogen peroxide. Samuel doesn’t know what the other ingredient is. Using the ingredients shown in the picture above, describe the steps of an experiment that Samuel could perform to figure out what he needs to make “elephant toothpaste.”
