Where Did It Go?

Use weight data to track matter during mixing.

P.5.5C.3 "Analyze and interpret data to support claims that when two substances are mixed, the total weight of matter is conserved."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each pair of before and after weights in the table. Circle the test with a lower weight afterward to help you track where matter went.

Nia's Fizz Test

1. At a school science fair, Nia mixed vinegar and baking soda. The mixture fizzed, and bubbles rose to the top. She put a small cup of baking soda inside a larger container of vinegar. She weighed the entire setup before tipping the powder into the liquid, so nothing needed to be added later.

2. Nia tried the mix twice. For one test, she snapped the lid shut. For the other, she rested its lid loosely on top. Both tests began with the same total weight, including each container and its lid. She also tested sugar stirred into water in a closed container.

WEIGHTS BEFORE AND AFTER MIXING

Mixture and setup	Before (g)	After (g)
Vinegar and baking soda, shut lid	142	142
Vinegar and baking soda, loose lid	142	139
Sugar and water, shut lid	120	120

3. The table shows the weight of each whole setup before mixing and the weight measured afterward. In the test with the loose lid, some gas escaped through the gap. No liquid spilled. A scale weighs only what remains on it. Use the numbers to decide whether the missing weight means matter vanished or traveled elsewhere.

2 ANSWER WITH EVIDENCE

Use the passage

1. What do the before and after weights in the shut-lid vinegar test show about the total weight of the setup?

2. In the loose-lid vinegar test, how many grams were not on the scale afterward? Where did that matter go?

3. Both vinegar tests began at 142 g. How do their different after weights help explain the lower reading in the loose-lid test?

4. How does the sugar and water test add evidence that mixing does not change the total weight of matter?

3 YOUR TURN

Your own words

Imagine mixing 45 g of sand and 30 g of water in a tightly closed jar that weighs 20 g. Write two sentences: predict the total weight of the setup before and after mixing, then explain how your numbers support a claim about matter.

ANSWER KEY

Where Did It Go?

PART 1 · READ AND MARK

Underline each pair of before and after weights in the table. Circle the test with a lower weight afterward to help you track where matter went. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What do the before and after weights in the shut-lid vinegar test show about the total weight of the setup?	**The setup weighed 142 g both before and after mixing, so its total weight did not change.**
2	In the loose-lid vinegar test, how many grams were not on the scale afterward? Where did that matter go?	**The scale read 3 g less afterward. That matter escaped as gas through the gap.**
3	Both vinegar tests began at 142 g. How do their different after weights help explain the lower reading in the loose-lid test?	**The shut-lid setup stayed at 142 g, but the loose-lid setup read 139 g. Gas could escape only from the loose-lid setup, so the lower reading does not mean matter vanished.**
4	How does the sugar and water test add evidence that mixing does not change the total weight of matter?	**The closed sugar and water setup weighed 120 g before and after mixing. Its unchanged weight gives another example of matter being conserved.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Before mixing, the closed jar and its contents weigh 95 g, and they still weigh 95 g afterward. The matching weights support the claim that mixing does not create or destroy matter when nothing escapes.

Accept answers that distinguish the weight on the scale from the total matter in the loose-lid test. For Your Turn, students should include the jar in both totals: 45 + 30 + 20 = 95 g.