What Stayed Behind?

Use observations to compare mixtures and solutions.

P.5.5B.1 "Obtain and evaluate scientific information to describe what happens to the properties of substances in mixtures and solutions (solvent and solute)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one observation about saltwater and one about sand in water. Circle the solvent and solute in the saltwater solution, then put a star beside the evidence that tests the sign's claim.

Two Cups at the Beach

1. At a beach science table, Nia pours clear water into two cups. She stirs a spoonful of white salt into the first cup. Soon she cannot see any salt grains, but the water stays clear. The salt has dissolved. In this solution, water is the solvent, the substance that does the dissolving. Salt is the solute, the substance that dissolves and spreads through the water.

2. Nia stirs a spoonful of tan sand into the second cup. The sand swirls for a moment, then sinks to the bottom. The grains still look tan, and the water above them is mostly clear. This is a mixture, but not a solution: the sand has not dissolved. A screen could catch the sand grains, while dissolved salt would pass through with the water.

3. A sign at the table says, "If you cannot see salt, it is gone." Nia checks this claim instead of trusting it. She puts a few drops of saltwater on one plate and plain water on another. After both dry, tiny white crystals remain on the saltwater plate, but no crystals remain on the plain-water plate. The water evaporated, and the salt stayed behind.

2 ANSWER WITH EVIDENCE

Use the passage

1. In Nia's first cup, which substance is the solvent and which is the solute? What happens to the salt grains?

2. Compare what happens to the salt and sand after Nia stirs each one into water.

3. Does the evidence support the sign's claim that unseen salt is gone? Explain.

4. A classmate says both cups are solutions because both contain water. Is that correct? Use evidence from the passage.

3 YOUR TURN

Your own words

Choose two materials from home that you could mix separately with water, one you predict will dissolve and one you predict will not. In four sentences, name the materials, predict what you would see in each cup, and describe a test that could show whether the dissolved material remains.

ANSWER KEY

What Stayed Behind?

GRADE 5 · P.5.5B.1

PART 1 · READ AND MARK

Underline one observation about saltwater and one about sand in water. Circle the solvent and solute in the saltwater solution, then put a star beside the evidence that tests the sign's claim. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	In Nia's first cup, which substance is the solvent and which is the solute? What happens to the salt grains?	**Water is the solvent, and salt is the solute. The salt dissolves, so its grains can no longer be seen.**
2	Compare what happens to the salt and sand after Nia stirs each one into water.	**The salt dissolves and spreads through the water. The sand remains visible as grains and sinks.**
3	Does the evidence support the sign's claim that unseen salt is gone? Explain.	**No. White crystals remain after the saltwater dries, showing that the salt was still there.**
4	A classmate says both cups are solutions because both contain water. Is that correct? Use evidence from the passage.	**No. The saltwater is a solution because the salt dissolves. The sand does not dissolve, so its cup is a mixture but not a solution.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would stir sugar into one cup of water and dried beans into another. I predict the sugar grains would disappear from view, but the beans would stay visible. I would let a few drops from the sugar cup dry on a clean plate. If crystals remained, that would show the sugar was still in the water.

Accept other reasonable materials and tests. Responses should distinguish a dissolved substance from a visible, undissolved material and use evidence to show that dissolving does not mean disappearing.