

Name: _____

Date: _____

Period: _____

The Mystery Powders Lab: Physical and Chemical Changes

Background Information: You have learned how to describe matter based on its physical and chemical properties. You have also learned some clues that tell you whether a physical change or a chemical change is occurring. A **physical change does not change a substance's identity. A chemical change produces a new substance that was not there before—like CO₂ gas and may be indicated by any of the 4 signs of a chemical change.**

Your objective in this lab experiment will be to determine the identities of four similar looking powders by placing different liquids on them and observing a physical property, solubility and the chemical property of reactivity. You will be able to tell if a chemical change is occurring by looking for the 4 signs.

Question: What are the identities of four "mystery powders" that are similar in appearance? (Baking Powder, Baking Soda, Powdered Sugar, and Cornstarch)

Hypothesis (from visual observation): Powder A= _____ Powder B= _____
Powder C= _____ Powder D= _____

Materials:

Procedure:

- Using the appropriately labeled spoons, scoop up a tiny bit of the following powders and place them in the indicated wells in the spot plates:
Note: Be careful NOT to cross-contaminate!
- Powder "A"** and place it in **wells 1, 5, and 9** Use the "A" spoon!
- Powder "B"** in **wells 2, 6, and 10.** Use the "B" spoon!
- Powder "C"** in **wells 3, 7, and 11.** Use the "C" spoon!
- Powder "D"** in wells **4, 8, and 12.** Use the "D" spoon!
- Use an eyedropper to add **water** into the wells **1, 2, 3, 4 so that it fills most of the well.** Stir each well with a clean toothpick. Do not reuse.
- RECORD YOUR OBSERVATIONS IN THE DATA TABLE.**
- Use the dropper in the **vinegar** bottle to add **10 drops** of vinegar to the **powder** in **wells 5, 6, 7, 8.** Stir with a **clean toothpick** for each well and **record observations.**
- Use the dropper in the **iodine** bottle to add **10 drops** of iodine to well **9, 10, 11, 12.** **BE CAREFUL BECAUSE IODINE WILL STAIN.** Stir with a new toothpick for each test. **Record observations.**
- Did you **RECORD ALL OBSERVATIONS???** Double check to make sure you did!
- Compare the results with the "key" and determine the identity of each powder.

CLEAN UP: 1. Rinse spot plate with water in the sink. Dry with paper towel.
2. Place all materials in box.