

## Exploding Bags

Section: Chemical Reactions; Topic: Acids & Bases

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Inquiry Question

Write down what you'll be learning today! What do you want to understand?

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### Procedure

1. Scoop two large spoonfuls of baking soda to the center of a square of Charmin® toilet paper.
2. Wrap the toilet paper around the baking soda.
3. Wrap a second square of Charmin® toilet paper around the first so the baking soda is held in the paper.
4. Have one student hold the plastic bag open, and another student add  $\frac{1}{4}$  cup vinegar and  $\frac{1}{4}$  cup warm water to the bag.
5. Seal the bag almost entirely closed and hold the wrapped baking soda over a small opening in the corner.
6. Have one student drop the baking soda into the bag and another student quickly seal the bag.
7. Gently swirl the contents of the bag so the toilet paper soaks up the liquid, then place the bag on the table. Watch as the bag inflates and pops!

### Observations, Data Collection & Analysis

Write down your observations below.

1. Describe the baking soda.

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2. Describe the vinegar.

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3. Take notes on the content of the bag prior to and after adding the baking soda. Are they the same or different? What are the physical properties?

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4. What are the reactants in this experiment? Can you write their chemical formulas?

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5. What happens when the baking soda and vinegar interact?

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6. Make a prediction about the temperature of the product: will they feel warm or cold? After a few minutes, feel the bottom of the bag with your hands. Was your prediction correct? Why does this happen? What does it mean?

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7. Draw and label diagrams showing each stage of the reaction. Why did the bag 'explode'?

8. What are the products in this reaction? Can you write their chemical formulas? What are the physical properties of the products?

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9. What gas forms during the chemical reaction? Explain.

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