

Ageless Apples

Section: Chemical Reactions; Topic: Reactions Rates & Catalysts

Name: _____

Date: _____

Inquiry Question

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

Procedure

1. Using the marker, add one of the following labels to each plastic bag: "lemon juice," "baking soda," and "water."
2. Pour $\frac{1}{4}$ cup lemon juice into the bag labeled "lemon juice."
3. Mix $\frac{1}{4}$ cup water with 1 tbsp. baking soda in the bag labeled "baking soda."
4. Pour $\frac{1}{4}$ cup water into the plastic bag labeled "water."
5. Have an adult cut an apple into 6-12 evenly-sliced pieces.
6. Place 2-4 apple slices into each bag, seal, and gently shake to ensure the apple slice is completely coated in the liquid.
7. Carefully remove the apple slices from each bag and place them on top of the sealed bag they came out of, or on a labeled plate or bowl.
8. Observe immediately and check in over the next few hours or day and note any changes between the apple samples.

Observations, Data Collection & Analysis

Write down your observations below.

1. At the start of the experiment, describe each liquid being used: water, lemon juice, baking soda solution. What are the physical properties? How are they similar or different?

2. Draw and label of diagram of an apple slice at the start.

3. Make a hypothesis: what effect do you think each of the liquids will have on the apple? Draw what you think each sample will look like tomorrow.

4. Describe and draw any changes you notice between the three samples over time. This can be every hour, every few hours, or over the course of a few days. What differences can you observe?

Record your observations of the reactions in the table below at different time intervals. For example, the first row of the table might read: lemon juice, 30 minutes, white.

Coating Substance	Time Passed	Color of Apple Slice

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5. What effect did bases have on the apple slices? What effect did acids have?

6. Do you think this is an example of a chemical or physical change? What is your evidence?

7. Which of the liquids used could help keep apples fresh for longer? Why?
