

CHAPTER 6

# MiniLab

## Investigate Enzymatic Browning

**What factors affect enzymatic browning?** When sliced, an apple's soft tissue is exposed to oxygen, causing a chemical reaction called oxidation. Enzymes in the apple speed this reaction, producing darkened, discolored fruit. In this lab, you will investigate methods used to slow enzymatic browning.

**Procedure** 

1. Read and complete the lab safety form.
2. Predict the relative amount of discoloration each of these apple wedges will show when exposed to air. Justify your prediction.

Sample 1: Untreated apple wedge

Sample 2: Apple wedge submerged in boiling water

Sample 3: Apple wedge submerged in lemon juice

Sample 4: Apple wedge submerged in sugar solution

3. Prepare 75 mL of each of the following: **boiling water, lemon juice, and sugar solution** in three 250-mL beakers.
4. Slice an **apple** into four wedges. Immediately use **tongs** to submerge each wedge in a different liquid. Put one wedge aside.
5. Submerge the wedges for three minutes, then place on a **paper towel**, skin side down. Observe for 10 min, then record the relative amount of discoloration of each apple wedge.

### Data and Observations

### Analysis

1. **Analyze** How did each treatment affect the chemical reaction that occurred on the fruit's soft tissue? Why were some of the treatments successful?

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2. **Think Critically** A restaurant owner wants to serve fresh-cut fruit. What factors might be considered in choosing a recipe and preparation method?

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