Brown Out

INTRODUCTION

Ever bite into an apple and hit a brown spot? Did you spit the brown out?
What causes apples, potatoes, pears, and other foods to turn brown? Can it be prevented?

OBSERVATIONS

1. As a team, generate a list of differences you can observe among the apple slices.

2. In what order were the slices most likely cut?

3. Which slices are similar in color?

4. How uniform is the color?

5. How deep is the color in the apple?

6. How can this browning be prevented? (Think of your personal experiences with apples and the variables that affects the browning)

As a team, think of factors which explain the browning of the apples and what causes it,

Hint #1: the browning is a chemical reaction controlled by an enzyme.
Hint #2: consider all of the variables that you predict may affect this chemical reaction

then, come up with a testable hypothesis and design an experiment to test your hypothesis about what causes the browning and how it can be prevented. You should quantify and control your experiment as much as possible. (i.e. you should use exact numbers and list all variables as well as experimental and control groups.)
REMINDER: experiments that disprove a factor are just as valid as experiments that prove a factor.

Check with your teacher before formulating a hypothesis AND before you will start developing a controlled experiment.

HYPOTHESIS

PROCEDURE

1. Describe your experimental design in detail. Be sure to include:
    a. Materials list—all the materials you would need for the experiment.
    b. Detailed description of your procedures and experimental setup. (Use drawings if they are helpful.)
    c. Variables and two groups
2. Conduct your apple experiment.
3. Make appropriate data tables and record the results from your experiment.
4. Write up your complete experiment. Include all the information from above. Discuss any unusual results or discrepancies as they relate to your original hypothesis.
5. Continue work with additional experiments or literature research.