

## Science Curricular Extension: Apple Oxidation

### Overview / Teacher Background:

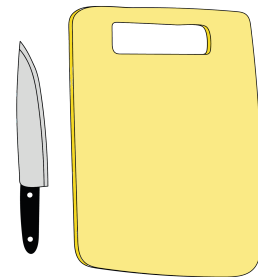
In this experiment students will learn why apples turn brown when sliced and how to prevent it.

Whole apples are protected by the skin. When apples are sliced or injured the flesh browns. This is because the flesh is exposed to oxygen, causing an enzymatic reaction that results in a brown color. This is the process of oxidation. Acidic substances, such as lemon juice, help prevent browning and keep apples fresh longer.



### Supplies

- Apples
- Knives
- Liquids such as: lemon juice, water, apple juice, vinegar, milk
- Small bowls or cups for each liquid.
- Labels for bowls/cups and for apple slices.
- Large plate
- Paper and pencils for student predictions (optional)



### Instructions

1. Give an overview of oxidation / browning of apple flesh (as appropriate for grade level).
2. Discuss the different types of liquids you will be using for the experiment.
3. Have students make predictions about what will happen to the apples when soaked in each different type of liquid. Predictions can be made as a class discussion or individually written depending on grade.
4. Students can help slice the apples and place them in bowls labelled with each type of liquid. Keep one apple slice out of liquid as a 'control'.
5. Make observations of the apples in the liquid after 5 minutes.
6. Next, remove the apples from the liquid and place them on a paper towel labelled with which liquid they came from. Continue to observe at timed intervals, e.g 5 minutes, 10 minutes, etc.
7. Make observations about which liquids worked best at preventing browning.
8. Reflect - how did their predictions compare to their observations? Why did some liquids prevent browning better than others?