



Nutrition Adventure: Help Marcus Save the Apple!

You need: 1 apple (or banana)
Juice of 1 lemon



1. Take the apple and cut it in half with a plastic knife (ask an adult for help).
2. Dip one of the apple halves in the lemon juice. Do not do anything to the other apple half.
3. Leave both apple halves on the kitchen counter and wait a couple minutes.



**What happened to the apple half that was dipped in lemon juice?
What happened to the apple half that was not dipped in lemon juice?**

- When you cut into an apple, its cells are torn and an enzyme called **polyphenoloxidase** is released. Enzymes speed up reactions.
- This enzyme speeds up the process of **oxidation**. Oxidation causes fruit to turn brown because the surface of the cut fruit loses electrons when it comes into contact with oxygen.
- Lemon juice (and other citrus juices) stop the fruit from browning because they have antioxidants!
- **Antioxidants** are chemical agents that stop oxidation by giving one of its own electrons to chemical compounds in the fruit.
- This is why eating fruits and vegetables with many colors is important because they can save you from oxidation with their antioxidant powers, just like the lemon saved the apple!