This year I had an amazing crop of apples and as a result have MANY MANY boxes still left in my garage. As I continue to walk by them each and every day, I often grab one to eat, BUT I began to wonder what kind of science experiment can I do with apples? Now be forewarned, there may be a few apple experiments in the weeks to come! This week, we are going to try and generate electricity or make apple batteries…Let's get started.

***Remember to ask an adult before you do any science experiment.**

Materials

galvanized (zinc) nail

sandpaper

apple

18 gauge copper wire (it comes on a small roll)

wire strippers (optional)

scissors

voltmeter

ruler

Procedure

1. Using the sandpaper, gently rub the end of the galvanized nail. Clean the surface well.
2. Measure and cut a 10cm strip of wire.
3. Strip the insulation off of each end (about 1cm). Use the wire strippers, but if you do not have them, carefully snip a little piece being careful not to go all of the way through the wire and then peel back the plastic with your fingernails.
4. Gently sand the ends of the copper wire just to clean them off.
5. Carefully push the nail into the apple. It does not have to be all of the way through about 2cm deep should be fine.
6. Push one end of the copper wire into the apple. It should be very close to the nail, but DO NOT touch the nail.
7. You now have two terminals in the apple battery!
8. Turn the voltmeter on.
9. Take the red lead from the voltmeter and touch it to either the nail or the wire. Use the black lead and touch it to the other terminal.
10. Read what the voltmeter says. Note: if it does not display anything, simply switch the leads, you have them backwards!

What is going on?

The voltage you read on the voltmeter is the amount of electricity the apple battery is producing. The juice of the apple acts as an electrolyte through which ions can flow. Although this type of fruit does not have enough power to light a bulb for instance, it is clearly producing electricity!

Note: You should be able to purchase all materials listed in this experiment relatively inexpensively at a local hardware store.

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