Fruit Battery Power

By,
Ciara Samuel and Julia Corbani

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Identifying the Purpose

The purpose of this project is to demonstrate how an electrical current can be generated using certain citrus fruits that are strong enough to power a small light bulb.

Materials

-any citrus fruits (lemon, orange, lime, tomato)

-2 inch copper nail

-2 inch zinc (galvanized) nail

-small colored/opaque light bulb with 2 inch lead (holiday LED light)

-copper wire (enough to connect all nails)

- electrical tape or crocodile clip

-micro ammeter

Steps 1

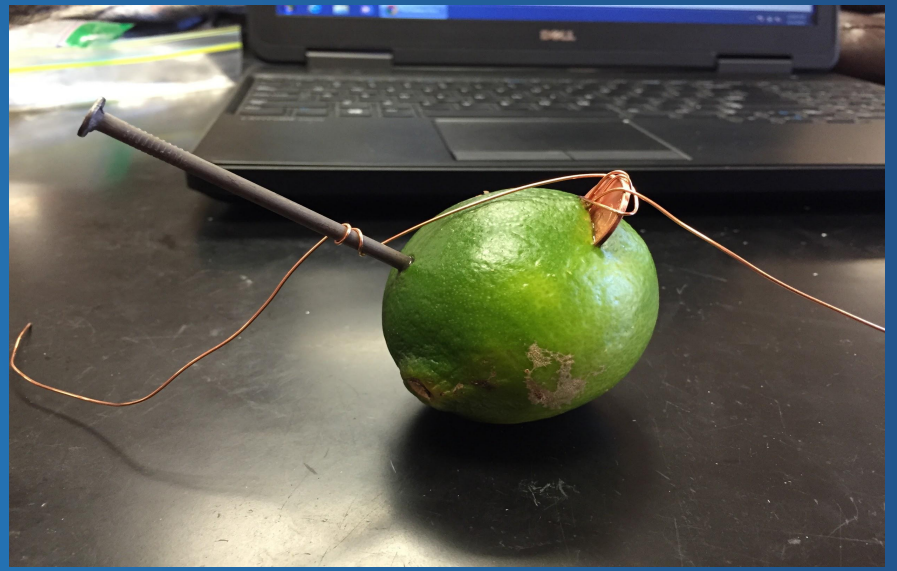
Prepare fruit for experiment by squeezing it on all sides
(not hard enough to break skin, do this to soften fruit)

Steps 2

Insert nails into fruit, approximately 2 inches apart from each other
(sharp end of nails should be in the center of the fruit but not touching each other,
do not pierce nails through other side of fruit)

Step 3

Remove insulation around the bulb wires (the lead) so you can expose enough wire to wrap around the nails

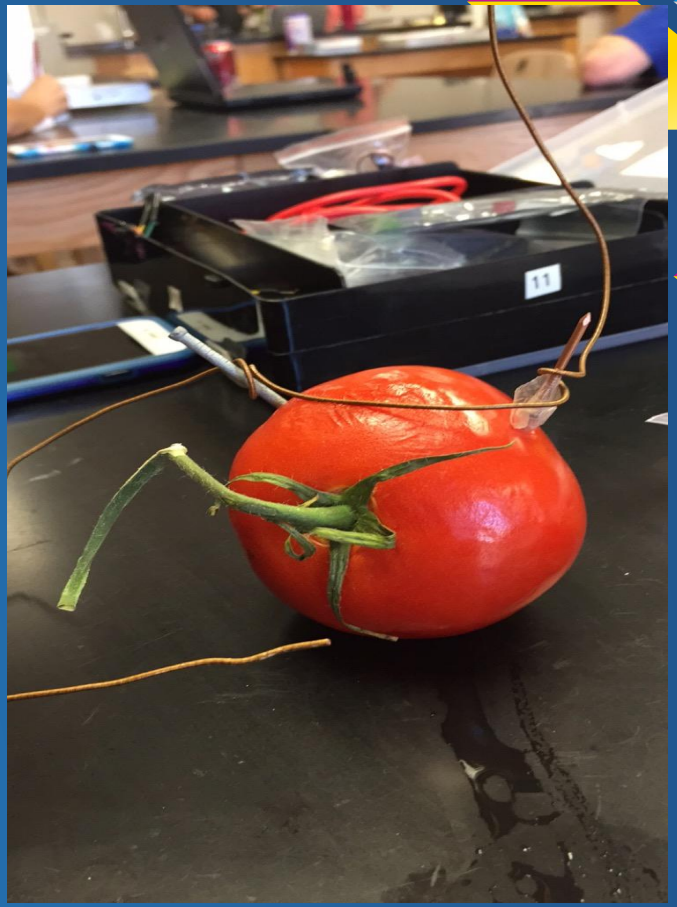


Step 4

Make one end of the exposed wire and wrap it around the zinc (galvanized) nail
If wire slips off, use electrical tape to hold together

Step 5

Wrap other end of exposed wire around the copper nail

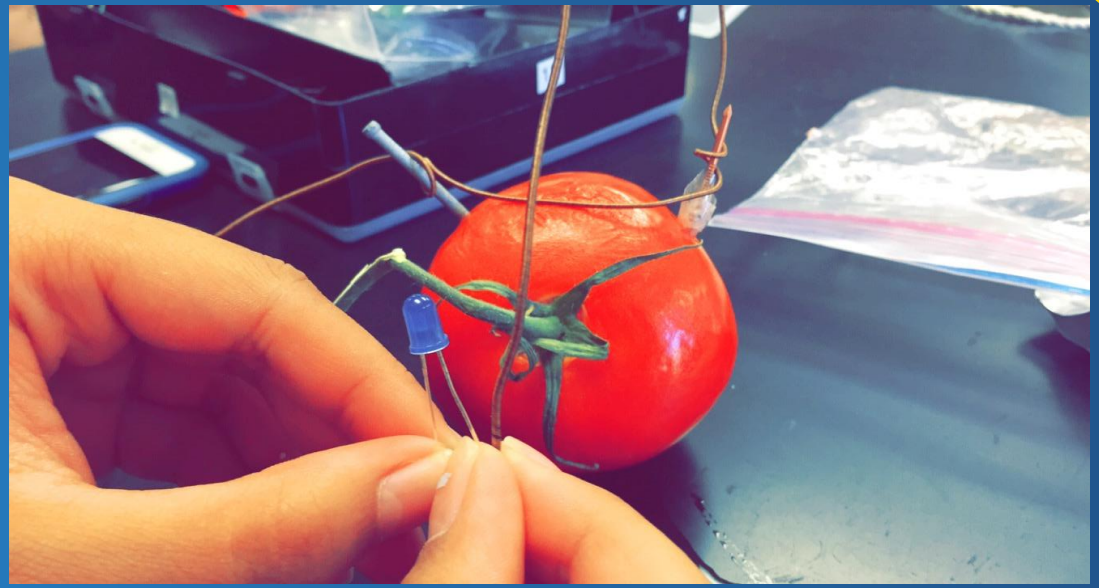


Step 6

Take second wire, wrap one exposed end around the copper nail

Step 7

Take the other end of second wire and attach to the light bulb



Day 1-3

We researched the different steps and materials needed to make and effective fruit battery. We checked many websites for the simplest design.

Day 4-5

We gathered the all of the materials needed to make the completed circuit. Also, we started our power point so the only part of it that we would need to complete was adding pictures.

Day 6-8

We worked both in and out of school testing out all of the different fruits several times each to find which one worked the best.

How a Fruit Battery Works:

Batteries usually are comprised of two different metals suspended in an acid solution. When doing a fruit battery, the two metals mainly used are zinc and copper. The zinc is in the galvanization, the process of applying a protective zinc coating over steel or iron, and the copper, a penny or nail, is actually copper-plated zinc. The acid needed comes from the citric acid inside a fruit, such as a lemon.

Thank You For Watching!

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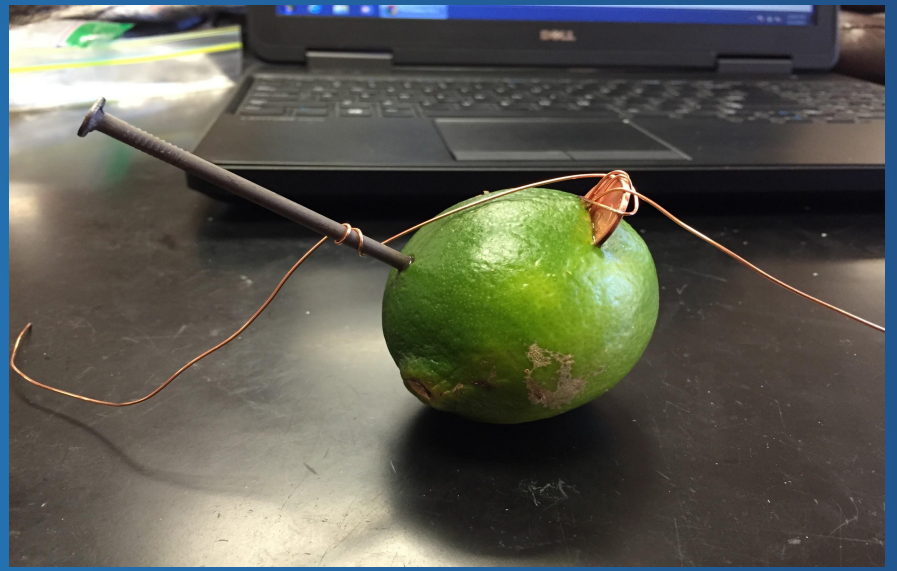

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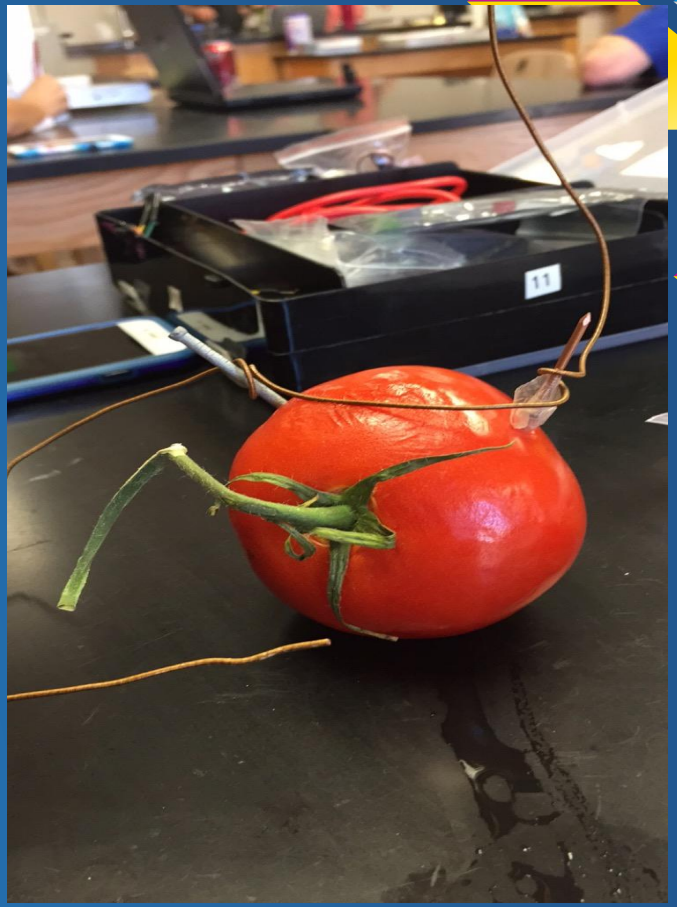

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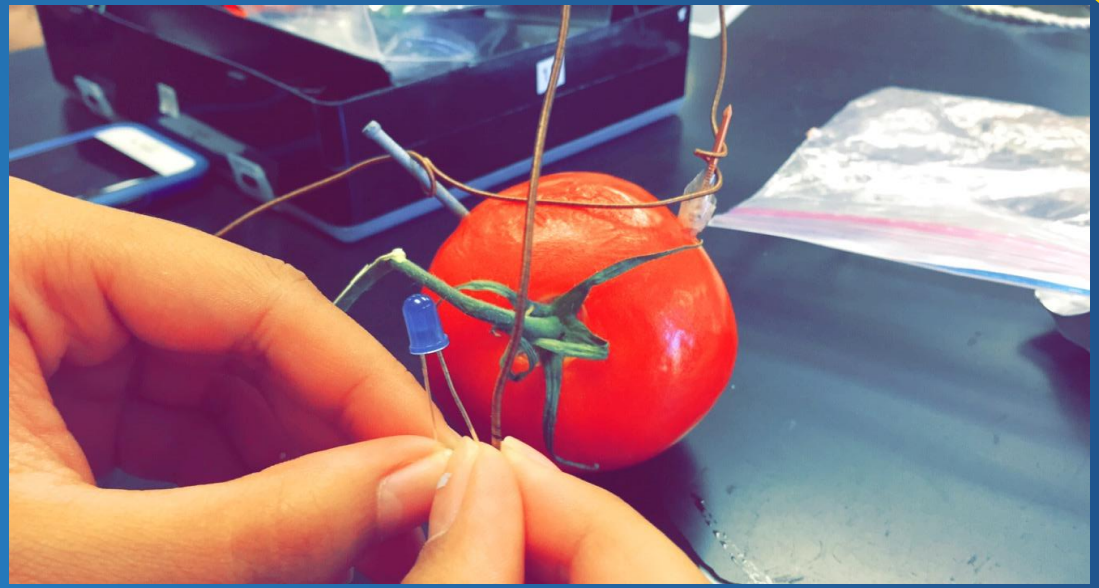

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