

Produce to Produce

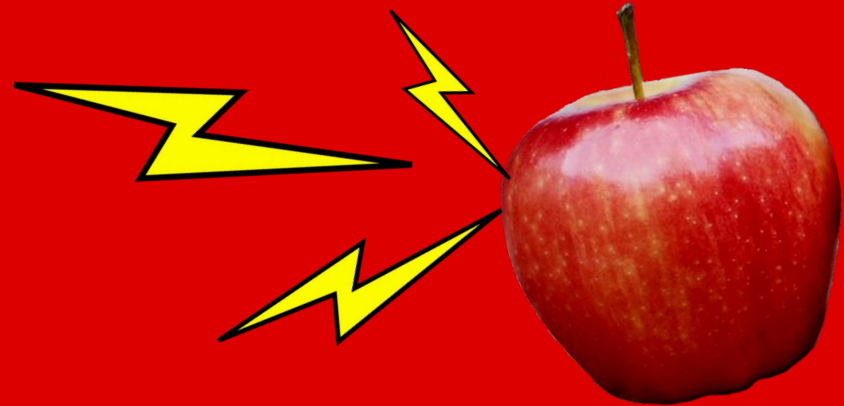
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The Question

How do different fruits and vegetables affect the amount of voltage produced from them?

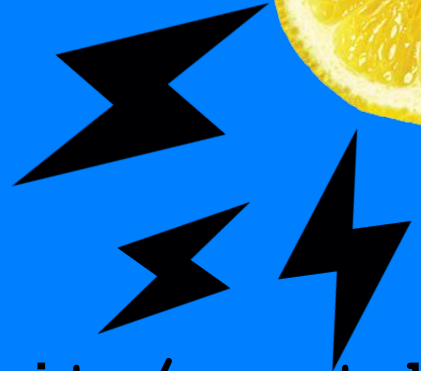


The Variables

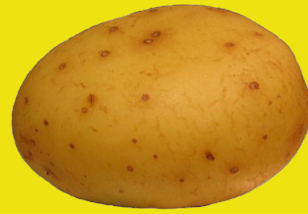
Responding: the voltage

Controlled: the temperature

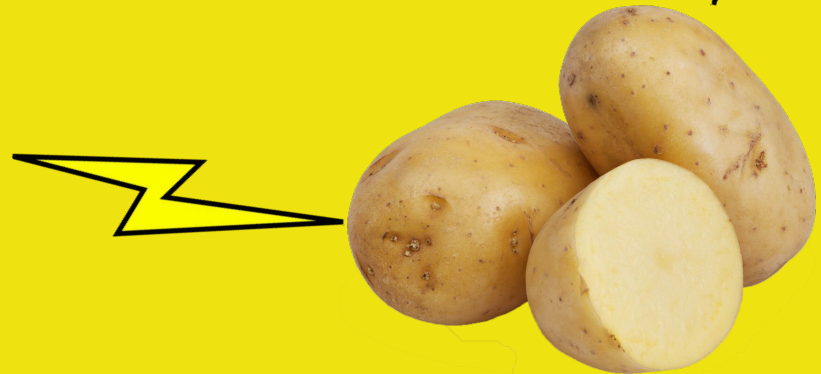
Manipulated: the combination of fruits/vegetables



Hypothesis



I predict that we can produce 3 volts of power from at least 3 fruits or vegetables using a series circuit.



Materials

- Digital multimeter
- Assorted fresh fruit and vegetables (at least 1-2 each)
- 1 Copper Electrode (penny) for each fruit and vegetable
- 1 Zinc Electrode (nail) for each fruit and vegetable
- Insulated copper wires
- knife





The Procedure

1. Slit a side of produce just enough so half of the penny can fit in it.
2. Attach a copper wire to the penny(Copper Electrode).
3. Put a nail into the other side of the produce.(make sure they do not touch)
4. Attach a copper wire to the nail(Zinc Electrode).
5. Connect the wire that is attached to the penny to the red wire on the digital multimeter.
6. Connect the wire that is attached to the nail to the black wire on the digital multimeter.
7. Turn the multimeter to volts and record data.
8. If doing this with multiple pieces of produce create a series circuit where the nail on one fruit connects to the penny on the other.

Data table

Type of produce	Voltage produced
1 Potato	0.53 v
1 Apple	0.41 v
1 orange	0.45 v
1 Lemon	0.54 v
1 lemon, 1 orange	1.13 v
1 lemon, 1 Apple	1.111 v
1 Apple, 1 Potato	1.04 v
2 Lemons, 5 Potatoes	3.07 v



Conclusion



The purpose of my experiment was to see which fruit or vegetable produces the most energy. My hypothesis was to determine if i can produce minimum 3 volts of energy when I connect different produce to copper and zinc electrodes? The results of my experiment showed my hypothesis is correct.

When I tested the fruits and vegetables to see how much energy they produced, the results were amazing. Zinc and copper worked great for all of the fruits and vegetables. When I connected the lemons, oranges , potatoes and apples to the zinc and copper electrodes, the voltage varies and started at 0.5 volts and went up as high as 3.07 volts by adding the produce together. The combination of zinc nails, copper pennies, lemons and potatoes produced the most energy.

Pictures

