ELECTRICAL ENGINEERING | LEMON BATTERY

Description

SKILL LEVEL: BEGINNER

In this craft, you will be using principles of electrical engineering to make a lemon battery! This activity will work great when done in groups or as a class. Teacher or adult supervision may be required.

How does it work? The lemon battery is able to conduct electricity because of an electrochemical reaction that takes place in the lemons. Lemon juice acts as an electrolyte (a substance that can conduct electricity) and carries electrically charged ions between the screw and penny. The ions keep travelling to the next lemon through the connecting wires. This process continues until there is enough electricity to power an LED!

Materials Needed

- 5 lemons
- 6 alligator clips
- 5 pennies
- 5 zinc screws
- 2 volt LED light
- Knife

Directions

1. Cut a slit at one end of the lemon and push a penny inside
2. Push the zinc screw into the other end
3. Repeat for each lemon
4. Attach one end of the alligator clip to a penny and the other end to the next lemon's screw
5. Repeat until all lemons are connected; two alligator clips will have one end unconnected
6. Connect the free ends to the LED light

Video Instructions

Supply Links

Alligator clips:
https://www.amazon.com/gp/product/B06XX25HFX/ref=ppx_yo_dt_b_asin_title_o03_s00?ie=UTF8&psc=1

LED lights:
https://www.amazon.com/gp/product/B06XPV4CSH/ref=ppx_yo_dt_b_asin_title_o01_s00?ie=UTF8&psc=1

Troubleshooting

Lemon battery not conducting electricity?
Make sure that the penny and screw are on opposite sides of the lemon. If they are touching at any point, your battery won't work.

Everything plugged in correctly but the LED still won't light up?
You might need to add more lemon batteries in order to get to the right voltage. Ours needed 5 lemons, but you could have to use 6 or 7 depending on how well your batteries conduct electricity.