

Station 5: How to Make a Lemon Battery

Things you need

5 lemons



5 copper pennies



5 galvanized screws



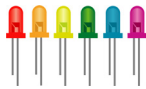
6 short electrical wires with alligator clips



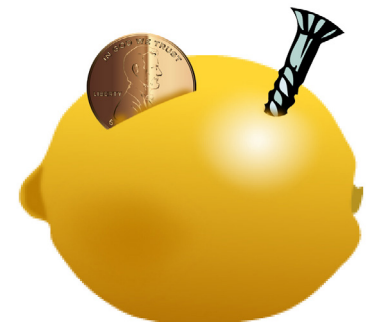
1 sharp knife



LEDs

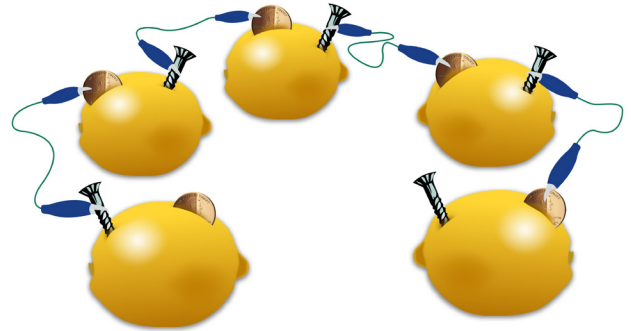


1. Roll each lemon gently on a table to break the cell walls and loosen up the juice inside. The sour juice is needed for the chemical reaction.
2. With your teacher's help, make a cut in a lemon with a knife. Cut a slit about one-half an inch from the center. Make the slit wide enough so the penny will fit and deep enough so that about half of the penny will be in the lemon.
3. Now push a penny firmly into the slit you cut.
4. Repeat Steps 2 and 3 for the other four lemons.
5. Mark a spot one-half an inch from the center on the other side, and insert a galvanized screw. Twist it in, clockwise, to secure it in the lemon flesh. Now repeat with the other four lemons.

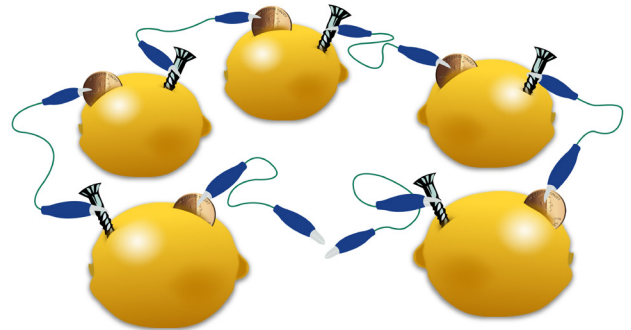


Station 5: How to Make a Lemon Battery (continued)

6. Now using the alligator clip wire, connect the screw in one lemon to the penny in the next lemon. Use four alligator clip wires to connect the five lemons. Arrange the lemons in a circle as shown.



7. Attached the additional two alligator clip wires to the penny in the first lemon and the galvanized screw in last lemon.



8. The LED has two legs that are slightly different lengths. With the free wire that is attached to the penny, fix the clip to the slightly longer leg of the LED. Connect the free wire from last lemon to the other leg of the LED. If the light does not come on, check all your connections (alligator clips) or try a different LED.

