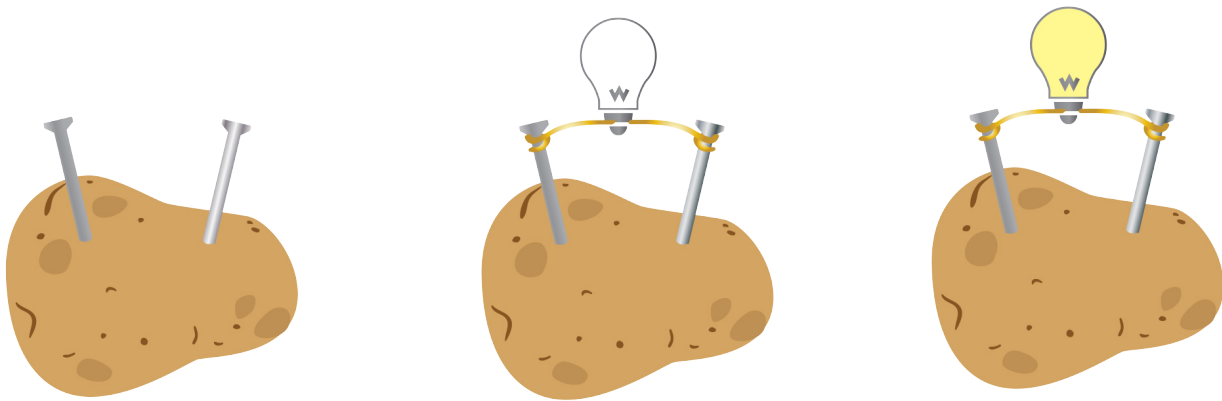


# Potato Power EXPERIMENT

Did you know that you can use a potato as a power source? With supplies that you can easily find in your local hardware store, you can impress your family & friends with your very own potato battery.

## Supplies

Potato, Copper wire, Zinc-platted (galvanized nail) , Steel nail , Small LED



## Directions

1. Push a piece of copper wire and a zinc-plated (galvanized) nail into the potato to act as the electrodes in this experiment. The two objects should be close together, but don't let them touch.
2. Connect the other end of the copper wire to one terminal of the LED and use more wire to connect the other terminal to the steel nail.
3. The LED should light up as current flows through the circuit. If it doesn't work, try swapping the terminals of the LED.

## What is happening inside the potato?

When the metals come into contact with the potato flesh, a chemical reaction occurs which releases metal ions into the potato. Potatoes contain phosphoric acid, which reacts with the zinc to form positively charged zinc ions and free electrons. At the other electrode, electrons in the copper combine with the hydrogen ions in phosphoric acid to produce hydrogen gas. The excess of electrons in the zinc electrode and the deficit of electrons in the copper electrode cause electrons to flow around the circuit, powering the bulb.



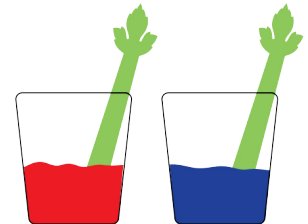
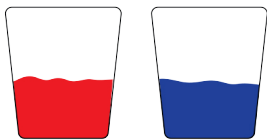


# Colorful Celery EXPERIMENT

Celery doesn't have to be green! With supplies found in your kitchen and a little bit of time, you can turn celery into pieces of art!

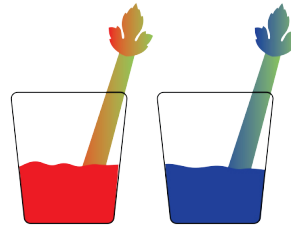
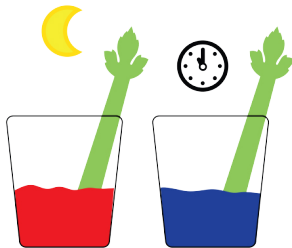
## Supplies

Celery stalk, Two glasses, Red & blue food coloring, Water, Kitchen knife



## Directions

1. Fill two glasses  $\frac{1}{2}$  way with water. Color one glass with a few drops of blue food coloring and the other glass with several drops of red food coloring.
2. Cut  $\frac{1}{2}$  inch of the celery at the bottom of the stalk and then cut the celery stalk down the middle, leaving about an inch or two at the top uncut. Keep the leaves on the stalk!
3. Place one half of the stalk in the glass with red water and the other half of the stalk in the glass with blue water.



4. Leave the glasses and celery overnight.
5. The next morning you should see red, blue, and even purple leaves!

## What's happening to the celery?

Capillary action! Water travels up the plant and out to the leaves through tiny tubes (xylem) that act like straws. It works by a capillary action. The water molecules suck up inside the tiny tubes and move up and out to the leaves as if someone was sucking on the end of the tubes. The suction actually occurs as a result of water in the leaves evaporating very slowly.

