



# Citrus Amps and Spud Sparks

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This presentation is  
about using potatoes  
and lemons as energy.

We came up with this idea at school when we were talking during an indoor recess about the science fair and then we thought about potatoes and how they conduct electricity.

# Hypothesis:

We think that the potatoes and lemons will power the LED and more potatoes or lemons will produce more light.

# Variables

Independent variables:

- Amount of potatoes

Dependent variables:

- How much light is produced

# Controlled variables:

- LED lights
- Copper wire
- Zinc coated screws

# Materials:

- 10 potatoes
- Lemons 4-5
- Copper wire





( Tip if the LED doesn't light up  
turn the LED the other way  
around before throwing out the  
potatoes and trying again. )

- Zinc coated nails and screws
- Scissors
- Pliers
- LED light ( Light Emitting Diode)
- Screwdriver

# Key words

Conducts: transmits the flow of electricity

LED: (Light Emitting Diode)

tiny light bulb that need very

little energy.

**Electricity:** Electricity is the set of physical phenomena associated with the presence and motion of matter

possessing an electric charge.

**Circuit:** A circuit is an unbroken loop of conductive material that allows charge carriers to flow through continuously without beginning or end.

Can potatoes power an  
LED?



# Procedure

Grab 3-10 potatoes. After you have all the potatoes grab copper wires and cut into 4.5 inch pieces. Stick the wire into

one side of each potato and screw a zinc coated screw into the other. When your done that connect the wire to a nail and connect the LED to the copper wires.



1st test:

It failed because the light did not light up. We think this failed because we used 3 potatoes.

# Potato test results

Four brown potatoes of various sizes and shapes, some overlapping, set against a white background. The potatoes are positioned behind the text, with one large potato on the right and several smaller ones to its left and in front.

2nd test :

This test we used 7 potatoes  
and it worked! The LED light  
lighted up!

3rd test:

10 potatoes failed. We both came up with different ideas why it failed. Gideons idea is because the original 7

potatoes were out of  
electricity. Evans perspective  
is that we added 3 more  
potatoes of a different type.

4th test:

10 NEW potatoes worked and  
the light was very bright!

5th test:

This time we did 3 potatoes  
and the light barely lit up!

# Results

The results were that it worked most of the time.



Can lemons

Power an LED?

Lemon test

results



1st test:

we squashed 4 lemmons and  
it was a 7.5 On our brightness  
scale

# 2nd test:

this time we did not squash  
the lemons and the  
brightness was a 8 on our  
scale.

3rd test:

We put the two circuits together and it was a 11 on the scale.

Research

We went on youtube and watched 6 videos here are the links.

<https://www.youtube.com/watch?v=-FiMmE69oWM>

[https://www.youtube.com/watch?v=SOsE5ECH\\_IM](https://www.youtube.com/watch?v=SOsE5ECH_IM)

<https://www.youtube.com/watch?v=VU3U0sfXNIA&t=55s>

<https://www.youtube.com/watch?v=EA7510yNLOk>

<https://www.youtube.com/watch?v=VU3U0sfXNIA&t=55s>

<https://www.youtube.com/watch?v=EA7510yNLOk>

Conclusion



Yes, potatoes can power an LED.  
Just as we predicted found out  
that more potatoes means more  
light but , like a battery they run  
out of juice.

We can improve this project by adding more potatoes.

Don't use potatoes to power anything unless you are doing an experiment .