

Blackout!

By, John Rocco

Background and Design Challenge: After completing a unit on electricity, there were many “I wonder” questions that emerged such as, “I wonder if I could light a small light bulb” (not LED), “I wonder if I could use lemons and potatoes together?” “I wonder if we could use any other materials?” These questions prompted me to create an inquiry lesson where you could test your questions by creating your own circuit without using batteries or electricity that could power something you might need or want during a blackout.

Criteria:

- Detailed diagrams showing your ideas for creating your final project must accompany your invention.
- Must contain notes on the problems you faced and the troubleshooting ideas you used.
- A detailed reflection of what you could have done differently.

Materials: You may select from the items below:

- | | | |
|-------------------|--|--|
| • Lemons | • Wire cutter | • Wires with alligator clips on the end (in our grade level electricity kit) |
| • Potatoes | • Small motor (in our grade level electricity kit) | • Dirt |
| • LED light | • Small incandescent light bulbs | • Cups |
| • Water bottles | • Bulb holders | • Copper and zinc strips from Enviro Battery kit |
| • Water | • Pennies | |
| • Pipe cleaners | • Galvanized nails | |
| • Brass fasteners | • Copper wire | |
| • Paper clips | | |

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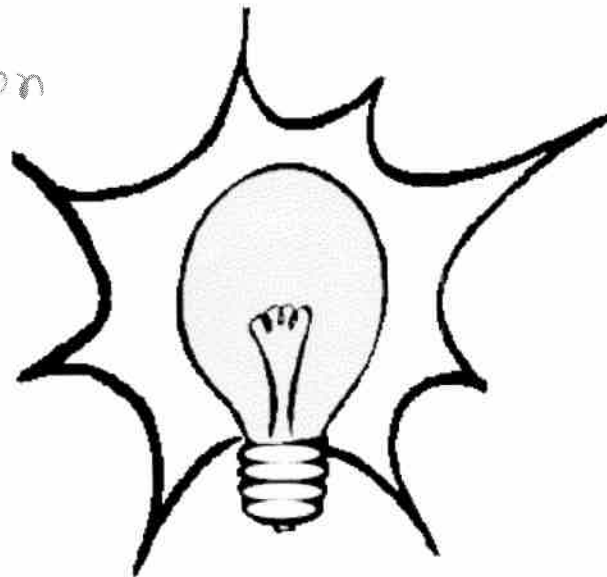
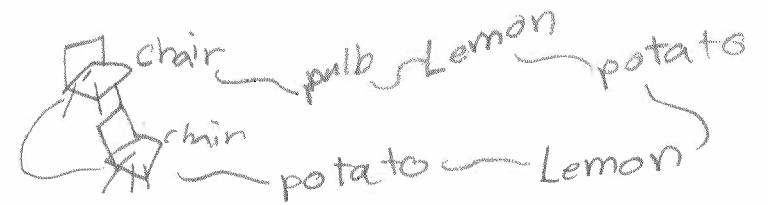
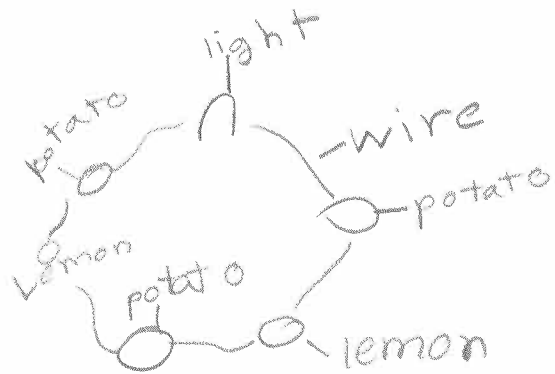
Blackout!

Group Members: Jason, Carson,
Sammantha, Kate,
_____.

What is the Problem? State the problem *in your own words*.

There is a blackout in Town. You need to create light without
batterys because they don't work and you can't use
a candle.

Brainstorm Solutions:



Create the solution you think is best. Keep notes below about any problems you have and what you tried to solve them.

The main problem all groups faced was the bulb wasn't lighting up no matter how much potatoes and lemons we use. We couldn't also find out what caused the problem. It could be the wires, zinc, copper, the bulb, or the conductors. Maybe the wires were rotten and might be the problem.

Test and evaluate your solution.

Did it work? No

Why or why not?

It didn't work because something in the circuit
wasn't working and I am not sure what it is.

Was that the best solution? Maybe

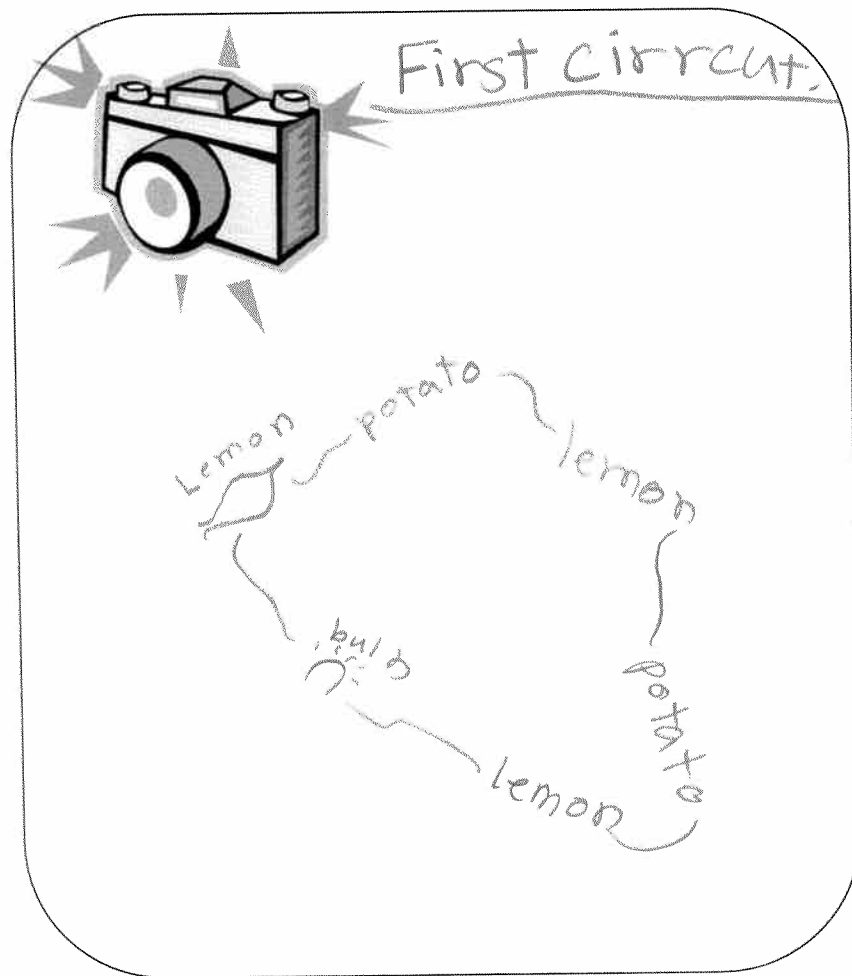
What could you have done differently?

I would probably add more conductors to the
circuit. Furthermore I would make the light take less
energy to work.

What else could you have tried? How could you have made it better?

I might have added a bag more of lemons
so the light would receive more energy.

Attach a photograph of your final project here. If you don't have one, draw a picture of your final project.



How would you make your project better? Draw a picture showing how it would look after you made the changes.

