

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:

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- 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.
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Materials: You may select from the items below:

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- | | | |
|-------------------|--|--|
| • 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!

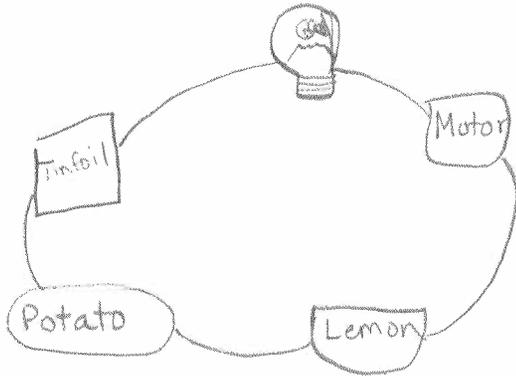
Group Members: Shreya, Aiden,
Jasper, Cameron,
_____.

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

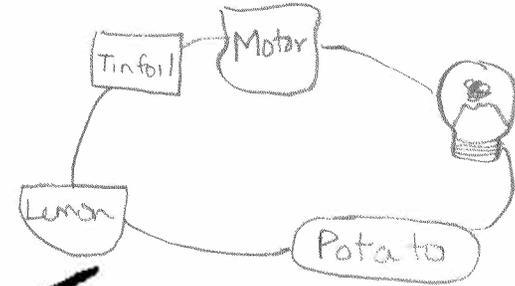
The power is gone and we need a light source! We don't have batteries and have to make a circuit without it.

Brainstorm Solutions:

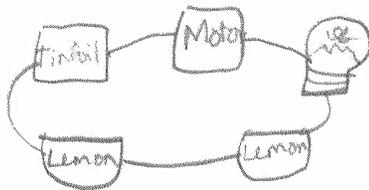
Aidan



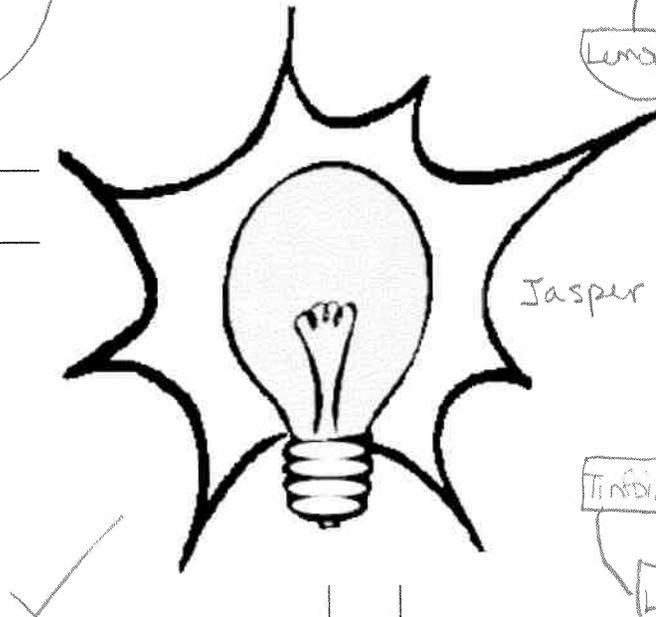
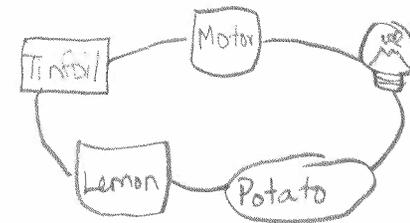
Cameron



Shreya



Jasper



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

- Use two lemons - (Maybe one potato)
- The nails were probably the problem because the pennys are copper and just maybe the nails didnt have enough zinc in them.
- I also think mabeey the wires are broken.

Test and evaluate your solution.

Did it work? no

Why or why not?

We tried many different ideas but none of
them worked.

Was that the best solution? maybe

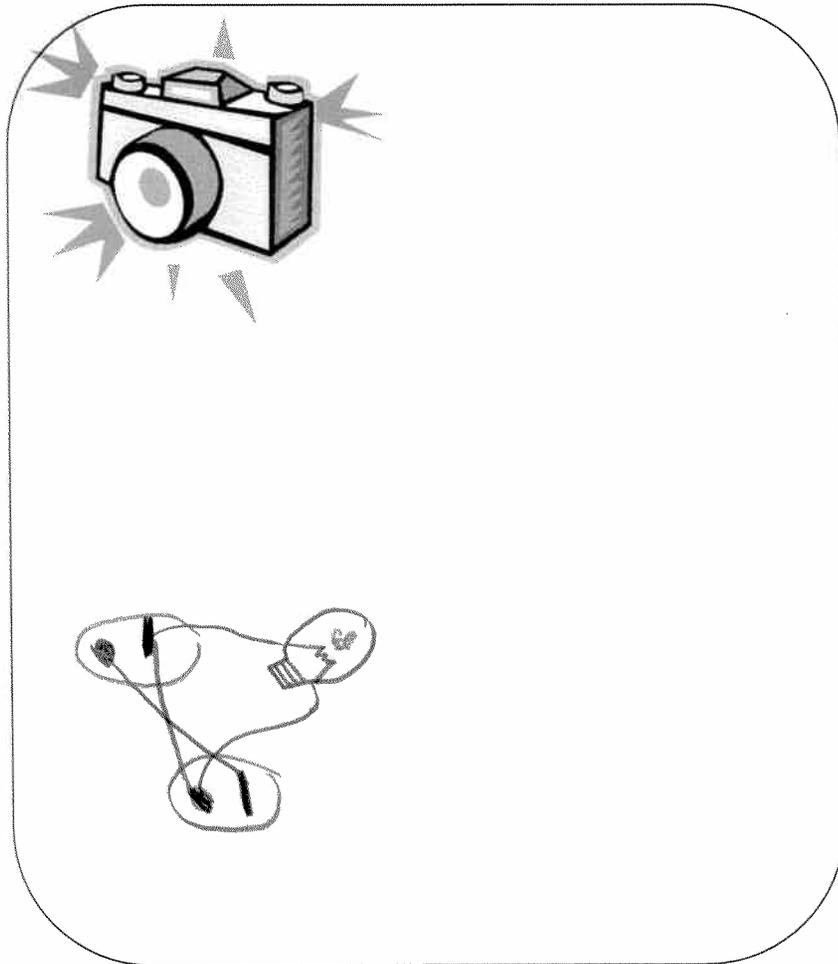
What could you have done differently?

I could have used more lemons for power. Even maybe
a battery would help.

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

I could have used copper sticks instead of pennys. Or
even use a potato for more power.

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.

