



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Samsara May T. Sales</b>	<b>Project Number</b> <b>J0621</b>
<b>Project Title</b> <b>Light It Up</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this project is to prove that common household materials can light up the LED string light. My Hypothesis is that the Voltage and brightness of LED light increases as the number of Zinc-Copper battery cells exposed to individual solution of table salt, baking soda, epsom salt, vinegar or Sunkist soda increases. Comparing the chemical compounds of each of the household material, I think epsom salt will have the strongest reaction.</p> <p><b>Methods/Materials</b> I made batteries out of Zinc and Copper plates in a medicine bottle separated with a rubber eraser. Submerges 4/5 of the metals in individual solution of table salt, baking soda, epsom salt vinegar or sunkist soda and measured Voltage and brightness of LED light. Measure the electric current with voltmeter and observe the light produced for every battery added to the circuit.</p> <p><b>Results</b> We can light up LED string light with Zinc-Copper plates submerged in individual solutions of table salt, baking soda, epsom salt, vinegar and sunkist soda. The light turns on when a 3rd or 4th battery is added in the series circuit. For every battery cell added, there is an increase of one volt to the total voltage of the circuit for most of the solutions. The brightness of LED increases as the voltage of the circuit increases.</p> <p><b>Conclusions/Discussion</b> The Voltage and brightness of LED string light increases as the number of Zinc-Copper battery cells exposed to solutions of common household materials like table salt, vinegar, epsom salt, baking soda or Sunkist soda increases. I also found out that epsom salt solution is the strongest solution and the weakest solution is the table salt solution.</p>	
<b>Summary Statement</b> I made a device that lights up when exposed to solution of common household items such as table salt, baking soda, epsom salt, vinegar or sunkist soda.	
<b>Help Received</b> None. I made the batteries and performed the project myself.	