



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Matthew A. Soderstrom</b>	<b>Project Number</b> <b>J0729</b>
<b>Project Title</b> <b>Battle of the Batteries</b>	
<b>Abstract</b> <b>Objectives/Goals</b> This project will determine if the less expensive Costco Kirkland Signature Alkaline AA batteries and the Walgreens Ultra Alkaline Supercell AA batteries will prove to be a better value than the more expensive Duracell Coppertop, Energizer Max, and RadioShack Alkaline Enercell brand AA batteries. <b>Methods/Materials</b> A light box was constructed to simulate a load on the test batteries and to allow measurements to be taken. An ammeter was used to measure amps, a voltmeter for volts, and a light meter for light output. The tests were conducted using two sets of two batteries for each brand. Readings were taken and recorded on 30#minute intervals, for a total of four hours, for each two-battery set. The data was then analyzed by calculating and graphing the following for each brand of AA batteries: amps, volts, power, and light output over the four hour test as well as average amps, average volts, average power, average light output, and cost per battery. <b>Results</b> The results show that the less expensive Costco Kirkland Signature Alkaline AA batteries and the Walgreens Ultra Alkaline Supercell AA batteries prove to be a better value than the Duracell Coppertop, Energizer Max, and RadioShack Alkaline Enercell AA batteries. <b>Conclusions/Discussion</b> The hypothesis was supported by this experiment. Further experiments might be conducted to compare how the value of AA rechargeable batteries compare to the alkaline batteries previously tested. Additionally, experiments could compare the battery performance when used with other types of loads, such as; toys, radios, cameras, etc. Further study could also compare #high-performance# batteries such as the Energizer E2 Lithium, Energizer E2 Titanium, and Duracell M3 Ultra to standard alkaline batteries.	
<b>Summary Statement</b> To determine if Costco Kirkland Signature Alkaline AA batteries and Walgreens Ultra Alkaline Supercell AA batteries are a better value than more expensive brand AA batteries .	
<b>Help Received</b> Mother helped type 1/2 of report and worked with me on board display, and Father taught me how to graph results in Excel.	