CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
Aidan J. Morris

Project Number
36763

Project Title
Regression Analysis of Electric Output from Increasing Battery Cells

Abstract

Objectives/Goals
The objective of this experiment was to determine that if I increase the amount of cells in a battery, would the electricity produced increase in a linear relationship.

Methods/Materials
The materials I used for this experiment were 5 pieces of copper/pennies, 5 pieces of zinc/washers, 5 pieces of felt, white vinegar, and a multimeter. I tried to use a galvanometer, but it did not work. To perform this experiment, I used the materials to create battery cells and then measured the electricity produced on the multimeter. Then graphed the results.

Results
When I graphed the data points, I observed that none of the test results formed a straight line on the graph. Then, I performed a regression analysis and found the data points had a more linear than exponential relationship.

Conclusions/Discussion
I can conclude from my tests, graph and regression analysis that when I increase the amount of cells in a battery, the electricity produced by the battery will increase in relatively linear proportion.

Summary Statement
I determined that when the amount of cells in a battery increases, the electricity produced increases in a linear relationship.

Help Received
I conducted the experiment myself. I received my understanding of regression analysis in discussions with my father.