



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Emily M. Wong	Project Number 31319
Project Title Blown Away: How Altitude Affects Electricity Production	
Objectives/Goals My objective is to test if altitude affects the amount of energy (in watts) a windmill creates. If my experiment works properly, I believe we may be able to create more windmills in the areas that create more efficient electricity, and produce cleaner energy. Abstract Methods/Materials To test if altitude affects the amount of electricity a windmill creates, I got a fan and a windmill model. The model was connected to a multimeter, which measured the amperes and volts, which could be multiplied to get watts. I measured the watts at two, four and eight inches away from the fan. I also measured the wind speed with an anemometer at those distances. I tested this at four different elevations: 0 feet, 1500 feet, 4000 feet and 7500 feet. I graphed and charted the results. Results I observed that energy produced in watts at 0 feet elevation was 28% higher than at 7500 feet, although 4000 feet was different than expected, possibly due to a mistake in my operation. Results were similar regardless of distance from the fan. Conclusions/Discussion I can therefore support the idea that all things being equal, windmills will create more electricity at lower elevations rather than higher ones.	
Summary Statement My project tests how elevation affects the amount of electricity a windmill creates.	
Help Received Parents helped type report, drive me to places, and encouraged me.	