



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Zack S. Venable	Project Number J0129
Project Title Blades of Glory	
Abstract Objectives/Goals The object of my project is to see which size blades of a wind turbine will produce the most electricity. I had three different blade sizes and tested each set of three. Methods/Materials The main materials for my project are balsa wood, DC Volt Meter, Thames and Kosmos Wind Power 2.0 Kit, house fan, and a dremel tool. I constructed the wind turbine which came in the kit. Then I carved my blades, using a dremel tool, out of balsa wood. I had a total of nine blades, three different sizes. I attached the blades to the wind turbine using straws, K'nex pieces, and hot glues. The wind source was a fan which was blown to the wind turbine. The voltage the turbine produced was read on a DC Volt Meter. Results In each test, the highest amount of voltage was recorded. There were three test for every trial, three trials in all, and then the three highs for each test were averaged for a trial average. For trial one the small size blades produced the largest average of 0.573 volts. The medium size blades were next at 0.553 volts and the large size blades were at 0.57 volts. For trial two, the small size blades produced an average of 0.633 volts, the medium size blades produced 0.573 volts, and the large size blades produced a low 0.486 volts. Although in Trial Three, the medium size blades produced the largest amount of volts at 0.586 volts. Next, the small size blades produced 0.577 volts and the large size blades produced 0.456 volts. So overall, the small size blades produce the highest average voltage. They were the most efficient. Conclusions/Discussion The hypothesis was not supported because in two out of the three trials, the small size blades produced the highest average electricity. It was hypothesized that the medium size blades would produce the most electricity, but they only did in one of the trials, the third. This shows that the blade weight is a bigger factor than blade surface area in producing electricity with wind turbines. It was initially predicted that more electricity would be produced when blade weight and blade surface area were at a balance, as with the, as with the medium size blades.	
Summary Statement Three different size blades on a wind turbine were tested and their results were analyzed.	
Help Received Borrowed fan and dremel tool, mother revised lab report.	