



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Rylan T. Pickett	Project Number J0126
Project Title Water Wheelin': The Effects of Turbine Blade Size on Power Produced by a Micro-Hydro Water Turbine	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of this project was to investigate the effect of turbine blade size on power produced by a micro-hydro water turbine. I hypothesized that the smallest blade size would produce the most power.</p> <p>Methods/Materials I assembled a micro-hydro water turbine out of an antifreeze bottle, magnets, copper wiring, paperboard, duct tape, wood, cork, vinyl, and acrylic. I assembled the machine so that the hubs that held the blades were interchangeable so as to test the different blade sizes (6.3 square cm., 9.4 square cm., 12.5 square cm., and 15.6 square cm). I ran a fixed flow of water through the opening at the top and recorded the output at three different intervals in millivolts, which is proportional to power.</p> <p>Results The smallest blade size produced the largest output in millivolts while the largest produced the lowest voltage.</p> <p>Conclusions/Discussion I concluded that when building a water turbine, optimizing blade size is a very important part of the process, and that in this case, the smaller sizes proved to be the best.</p>	
Summary Statement To determine which blade size produces the most power in a micro-hydro water turbine.	
Help Received Dad gave me building and electrical concept advice.	