

Robert Zulian

*Blowing in the Wind: The Effects of Blade Designs on Wind Turbines*

My science experiment was to find what type of blade design could be most efficient for a wind turbine. A wind turbine is a machine that uses kinetic power to create energy from the wind. To test my hypothesis, I constructed a small-scale wind turbine with three different blade designs. To test my experiment I placed square blades onto the turbine and connected a digital multi-meter to it and then placed it outside a window of a car and drove 10 mph for 10 seconds. Once the meter registered the volts and they were recorded, I switched to the rounded blades and drove the same speed and for the same time, and finally I repeated the test again with the triangular blade. I once again repeated the time and speed. To measure all of the results I used a digital multi-meter to read how much energy was outputted from the turbine. By changing the blades I was able to vary how much energy was being distributed from the turbine, so I could find which blade could create the most energy. My results show that rounded blades on a wind turbine do better than triangular blades and square blades, because rounded blades have more surface area to catch the wind. Throughout my experiment I analyzed my results and came to the conclusion that my hypothesis originally created was not accurate.