



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Liliana Tores	Project Number J0329
Project Title Wind Power: Does Fabrication Material Affect Energy Produced?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study is to determine how different materials used in the fabrication of windmills will affect the energy they produce.</p> <p>Methods/Materials Fabricated pinwheels (to simulate windmills) out of: Plastic, cardboard, paper, and aluminum. Once made, they (the pinwheels) were attached to a fabricated base made from an empty oatmeal container, a cup, a straw, string and hot glue. Completed pinwheel is then placed in front of a fan. The fan is then turned on to speed three and the pinwheel pulls up the cup with five pennies in it, while being timed using a stopwatch. This procedure is repeated ten times with each of the materials used to fabricate the pinwheels.</p> <p>Results After completing several trials on which of the pinwheels fabricated using, plastic, cardboard, paper, and aluminum, would pull a cup with equal weight up the fastest. The most efficient material was the plastic pinwheel produced more power than the cardboard, paper, and aluminum pinwheels. The plastic pinwheel consistently pulled the cup up in a faster amount of time, demonstrating a higher energy production.</p> <p>Conclusions/Discussion The plastic pinwheel the most efficient in producing wind power when compared to the other materials tested, cardboard, paper, and aluminum. By doing this project I have learned which type of material would be better to use to build a wind turbine.</p>	
Summary Statement I fabricated pinwheels (to simulate wind turbines) out of different materials and found out that plastic was the most efficient in producing power.	
Help Received I designed and built my simulated wind turbines with minimal help from my teachers and parents. My teachers, Mr. Nelson and Mrs. Lickey did help me with understanding the implications of my results, and how to compare my data.	