CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
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Project Number
J0222

Project Title
Valley Velocity

Abstract

Objectives/Goals
As fossil fuel is starting to become non-renewable, alternate energies such as wind power are being considered as a possible way to run our nation. The purpose of my experiment is to determine where to place America's wind farms.

Methods/Materials
I tested two different geological features (in a valley, and up a mountain) to see which would create the fastest wind speed. I used a hand-held anemometer, a large fan, a yard stick; as well as glue, newspaper, and tinfoil to create my two paper mache mountains.

Results
I used the fan to simulate a wind and I took measurements in the valley and on the mountain. Through testing my hypothesis was proven correct as the valley is more efficient at creating faster wind speeds.

Conclusions/Discussion
After my testing, I figured that I could use my results to determine the cost savings possible. As the valley was proven to produce the fastest wind speeds, I used its data to find a cost reduction when a windmill is moved to a valley. I have learned through this experiment how to analyze data and display results.

Summary Statement
I searched for what geological feature would create the fastest wind speed, and I found that the valley compressed the air, creating a high pressure zone.

Help Received
I was helped with designing my experiment with Dr. Dunne and Dr. Manalis at University of California Santa Barbara.