CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY

Name(s)
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Project Number
S1402

Project Title
Beginning Cartography

Abstract

Objectives/Goals
The objective is to see if one could accurately measure the heights of various mountains using a transit and trigonometry.

Methods/Materials
Using a transit the angles of four different mountains were shot. Once the angles and distances (obtained from a GPS) were known, they were substituted into the formula tangent angle = the opposite leg over the adjacent leg and the heights of the mountains were then calculated. After doing the math, the approximate heights found were then compared to the known altitudes determined by a GPS.

Results
The heights of all four mountains were calculated and only one mountain was accurate, having the same known and calculated heights, the other three mountains were off by a hundred to a few hundred feet.

Conclusions/Discussion
My conclusion is that with more accurate equipment one would be able to accurately measure the heights of mountains within a 95% accuracy.

Summary Statement
This project was conducted to discover if the height of a mountain could be accurately measured using a transit and trigonometry.

Help Received
My Dad taught me how to use the transit. My Mom helped me with the layout of my board. My uncle tutored me in trigonometry.