CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
Tom C. Anastasio

Project Number
J0101

Project Title
Rocket Science

Abstract

Objectives/Goals
I originally wanted to look at the effect of fin design on model rocket performance, but when I did my research, I found out that it would be really hard to measure the effect of fin design because it affects stability, and stability is also affected by a lot of other variables. I decided to study the effect of nosecones because nosecones only generate drag, which is easier to measure. It is also easier to control because the drag variable primarily affects altitude.

Methods/Materials
I started by getting three identical model rocket kits (Estes Viking), and I built them according to the constructions, making them the same as possible. I picked four different shapes of nosecones - parabola, pointed cone, domed, and flat. Each one had a different drag coefficient that had been measured in a wind tunnel and given in a book on model rockets. I based my hypothesis on the drag coefficients.

Results
After twelve tests and several lost rockets, I found that my hypothesis was proven correct. I also found out the nosecone shape affected rocket stability more than my research said it would. I also discovered that flying model rocket is truly rocket science and is a lot harder than I thought it would be.

Conclusions/Discussion
After twelve tests and several lost rockets, I found that my hypothesis was proven correct. I also found out the nosecone shape affected rocket stability more than my research said it would. I also discovered that flying model rocket is truly rocket science and is a lot harder than I thought it would be.

Summary Statement
It tested which nosecone will fly the highest under certain conditions.

Help Received
Mother helped type report, Dad Made Nosecones out of balsa.