CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J0202

Project Title
It Doesn't Take a Rocket Scientist: Part 2

Abstract

Objectives/Goals
My goal was to learn about how far a rocket flies, depending on several variables. Do rocket trajectory angle, amount of weight, and distribution of weight affect how far a rocket flies? What happens to a rocket's flight distance when you change these components?

Methods/Materials
My materials included cardboard tubes, sheet plastic, foam tape, an air compressor, PVC pipe to make an air chamber and several other small items. First i had to make an air chamber out of PVC pipe to get a standard amount of air to launch each of my rockets. Then I made rockets out of cardboard tubes, and with plastic fins. I used foam tape to create rockets with high or low weight, and with the weight either at the top only, or distributed between the top and middle of the rocket. I launched the rockets at each of three launch angles.

Results
The rockets with the 45 angle flew the farthest. The Low / Distributed weight flew rockets flew farther than rockets with other settings of weight.

Conclusions/Discussion
In my background research, I found that thrust, drag and gravity have a lot to do with how far a rocket will fly. I was right about the 45 degree angle with the low weight being the one that flew the farthest, but i was wrong about the rocket with the weight split between the top and bottom flying the farthest.

Summary Statement
This project looks at the role of several variables in rocket launch distance.

Help Received
Dad helped to build the air chamber and supervised the launches.