CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)

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Project Number

38720

Project Title

Soaring High with Rockets: How Fin Length Affects a Rocket's Maximum Altitude

Abstract

Objectives/Goals

My objective for this project is to determine how a rocket's fin length affects its altitude.

Methods/Materials

Balsa wood, model rocket kit, c6-5 motors, epoxy resin, altimeter, launch pad. Launched rocket 3 times for each fin configuration and recorded the altitude reached.

Results

The shortest fin configuration yielded the highest mean altitude, but only by one foot over the medium fin configuration. the medium fin configuration yielded the two highest flights of the experiment, but one low outlier brought down the average.

Conclusions/Discussion

In conclusion, the shortest fin configuration yielded the highest average flight, but only by 1 foot over the middle fin configuration. The middle wingspan may have been the best had the 1st launch not curved at ignition (lost a fin) causing an outlier in data. The longest fin configuration was clearly the worst performer, averaging roughly 70ft lower than the short fin configuration.

Summary Statement

Through the process of launching the rocket, I determined that fin length definitely affects flight; shorter fins equals higher altitude reached.

Help Received

I received help while building, launching, and fixing the rocket, building my project board, and help from my science teacher on any questions I needed answered.