Name(s)	Project Number
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Project Title

A Model Rocket's Trajectory

Abstract

Objectives/Goals
The objective of my project was to determine a possible way to calculate a model rocket#s trajectory in order to predict a possible landing zone by using mathematical models. Once a mathematical model is derived an error of margin will also be calculated if needed.

Methods/Materials
A series of six rockets were tested, each with different outer dimensions as well as different masses. Each rocket was measured for the necessary variables to calculate into the mathematical model then a trajectory was produced to match the results. Each rocket was then launched and compared to the mathematical trajectory.

Results
The mathematical model contained a margin of error of less than 5% from the each rocket#s actual flight path

Conclusions/Discussion
I conclude that a mathematical model can be used to show where a model rocket will land and in doing so many applications can be derived to provide a function for knowing where a specific model rocket will land. A couple applications examples could be: the ability to deploy an experimental device at a specific location or perhaps keeping the rocket away from a certain hazardous zone.

Summary Statement

Hypothesizing a zone of space a specific model rocket will land, within very reasonable limits, using mathematical models.

Help Received