Name(s)	Project Number
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Project Title

Parachutes and Drag

Abstract

Objectives/Goals

The goal of this project was to find out what really is the best material for parachuting by calculating its drag. This project involved 8 trials in which a Polyester, Silk, Cotton, and two nylon parachutes were dropped. The drag of it was calculated by timing the drops, finding the velocity, then using the drag equation. All tests were controlled except the variable of weather.

Methods/Materials

In this experiment, I used 5 varieties of cloth, Sewing machine, Strap material, A tall building, 50g weights, Duct tape, Altimeter, and a Stop watch.

Procedure
First, I gathered the materials and made 5 different parachutes. I acquired a cotton parachute, silk parachute, polyester parachute, and got 2 premade parachutes made out of nylon.
After the prep, I figured out all the equations needed for the experiment. Which were the Drag Equation, Tangent equation for height, Velocity equation, Coefficient of Drag Equation, and the Surface area of a circle equation.
Then I chose and measured a building by taking the angle from where we would observe the drops and applying the tangent equation of height . The height was 20.7 m
I then timed and took pictures of dropping the parachute with five trials for each type
I then analyzed the times applied the data I had into the previously mentioned equations to calculate drag.

Results

The results of the experiment turned out well. The polyester parachute was bottom with worst time, velocity, and drag. The Nylon Blue and yellow and the cotton parachutes were in the middle, and the silk and nylon black and white parachute topped. Timings went smoothly as no wind had been encountered during most of trials. As expected however, silk was dominant.

Conclusions/Discussion

According to the data, the silk and nylon proved to be the most efficient. The silk had not only had the most hang time, but drag was not as present as say polyester which had the most drag. Nylon was very close to silk with .01 seconds different from the silk. In conclusion, my data proved the silk and nylon are the best material out of the five. Even centuries ago, people used silk for parachutes not even mathematically knowing its advantage, yet for them just felt effective, which it is.

Summary Statement

This project is figuring out the best material for parachutes by calculating its drag