CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)

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Project Number

J0102

Project Title

Need for Speed

Abstract

Objectives/Goals

The experiment is "How will the shape of a car effect its speed down a straightaway track" and "How will the addition of a spoiler on the back of the car effect its speed down a track." It is hypothesized that the streamlined shape would move faster. This is thought to be true as it produces the smallest drag coefficient and has a smaller frontal area than the other shapes.

Methods/Materials

In short the experiment starts with cutting five differently shaped cars as noted in the procedure, and one spoiler. The first half of the experiment starts with sending each car with no spoiler down the track. The time is recorded after each run in seconds and the speed is calculated in meters per second, and then the average of both is found for each car. The second half is repeating the first but adding a spoiler for each run. Every car should have a total of five trials with and without the spoiler.

Results

After calculating the average speeds of all the cars with and without the spoiler we observed a few results. First of all the wedge shaped car never finished a run. Disregarding the wedge from fastest to slowest was the oval, followed by the rounded, then the streamline, and then the rectangular. When we attached a spoiler and tested the cars the oval, rounded, and rectangular cars all experienced a slight increase in speed while staying in relation to each other. The streamline car although experienced an unexpected decrease in speed due to it's weights hitting the floor and slowing it down.

Conclusions/Discussion

The ending result is inconclusive. No conclusion could be made because the wedge never finished a run and the streamline experienced difficulties in maintaining a consistent friction with the track. This made the collected data incorrect.

Summary Statement

My project deals with how the shape of a car and the presence of a spoiler effects it's speed.

Help Received

Mother drove to get materials; Carpenter helped shape and cut cars; Neighbor loaned track