



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

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Project Title
Does Barometric Pressure Affect the Velocity of a Lacrosse Ball?

Abstract

Objectives/Goals

The purpose of this experiment is to learn if a lacrosse ball will go faster at a higher altitude due to the low barometric pressure. The experimenter also might be able to increase the velocity of the lacrosse ball in some way to help improve lacrosse players throw. One other great reason to look into this area is if you love lacrosse or weather. If the reader enjoys lacrosse this experiment can be a fun activity that can be done on free time. This experiment can be fun, exciting, and can help the experimenter's understanding of the sport and barometric pressure. This is why this experiment is such a wonderful topic.

Methods/Materials

This experiment required a machine that would launch the lacrosse balls. The lacrosse balls were launched 150 times and the hang-time and distance each lacrosse ball had was recorded. The lacrosse balls were launched at three different test locations approximately 3 inHg more than the next. Using the hang-time and distance the experimenter found out their speeds. The speeds were compared to see which location the lacrosse ball traveled the fastest.

Results

Two different measurements were used to calculate the velocity of the lacrosse ball. The two measurements were time and distance. In the Red-Tailed Roost Volunteer Center parking lot the lacrosse ball traveled in the air for an average of 1.65 seconds. In Dudley's Bakery parking lot the ball traveled an average of 1.49 seconds in the air. At the Red-Tailed Roost Volunteer Center parking lot the lacrosse ball traveled an average distance of 89 feet. In the Dudley's Bakery parking lot the lacrosse ball traveled an average of 85 feet. The average velocity at the Red-Tailed Roost Volunteer Center parking lot was 54.4 feet per second. At the Dudley's Bakery parking lot the average velocity was 56.9 feet per second.

Conclusions/Discussion

This experiment did not support the hypothesis. The hypothesis for this experiment was that the lacrosse ball will travel three feet per seconds faster in three inches less of barometric pressure. The data shows that the lacrosse ball traveled an average of 2.5 feet per seconds faster at the higher barometric pressure of 26.96 inches. Although the lacrosse ball traveled faster at the high barometric pressure level, the lacrosse ball had more hang-time and distance at the low barometric pressure level.

Summary Statement

This project is on how a lacrosse ball flying through the air is affected by barometric pressure.

Help Received

Father helped with dangerous tools and launching; Mother helped with layout of board