CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)

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Project Number

J1718

Project Title

Predicting Phenomenon

Abstract

Objectives/Goals
The purpose of this science experiment was to study group accuracy, and how a group#s average compares to expert judgment.

Methods/Materials
Four containers were filled with beads, jolly rancher candies, and marbles, and fifty people from a shopping center were asked to randomly guess how many of each type of item was in each container. I then asked a math teacher to use a measuring method of their choice to determine the number of items in the containers. I performed three trials with the marbles, jolly rancher candies, and the marbles, with the same expert each time and different people each time.

Results
Surprisingly, the results turned out that the #group accuracy# was not accurate in some trials. In the bead trials, the group average was surprisingly less accurate on the low side than the expert, but in the Jolly Rancher Candies trial the group was extremely accurate in some trials. My results show that a large number of a substance negatively changes the accuracy of the group as shown in the bead trial as opposed to the group#s judgment of the smaller number of Jolly Rancher Candies which was extremely close.

Conclusions/Discussion
My conclusion is that an expert is best used when there is a wide range of possibilities and a large group#s averaged judgment should be used when there is a smaller range. The shape of the object also makes a difference, because the regular shape of the marble makes it easier to predict how many can fit in a container, versus an irregular object such as the jolly rancher candy.

Summary Statement
The study of whether or not the average of a group is more accurate than an expert using a method to find an answer to a problem.

Help Received
My science teacher held meetings and help sessions for the county fair; UCSB students came and gave us suggestions for the boards.