



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Jillian D. Gluck	Project Number S1006
Project Title Weighting for Strength	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My hypothesis was that right-handed, active students' weight will determine the strength in their arms. As the weight of each consecutive student increases, the strength in his or her arms will also increase proportionally. My reasoning for this is that a relatively heavier person will be a) carrying around more weight and therefore should be stronger or b) would be stronger and carry more muscle which would explain their weight.</p> <p>Methods/Materials In my experiment, I tested 16 to 17 y.o. who have had some athletic involvement and are right-handed. I first recorded all these specifics and then measured their height and their weight. Next, I had my subjects push on a countertop with their right and left hands and recorded their weights respectively. Then I divided the number of pounds that they lifted with each arm separately by their original weight to figure out the percentage difference between the strengths of their arms relative to their weight. Then I averaged the two percentages to create charts of all my findings and organized them by 1) increasing weight, 2) increasing average strength, and 3) increasing total pounds lifted.</p> <p>Results I made observations based on these charts. My experimental variables were 1) the subjects were of varying heights making the countertop at different heights relative to their own height, 2) the subjects kept shaking when they were relieving some of their weight so I was forced to average the readings, and 3) I could not minimize constants without greatly affecting my amount of test subjects. The dependant variables were represented in the charts that I made. These include their weights with the help of their left or right hands, the percentage differences of their hands, their average strength, and the total number of pounds that they were able to lift.</p> <p>Conclusions/Discussion I found that in my range of test subjects, weight (and height) is not directly related to average arm strength, though there seems to be a pattern of increasing total pounds lifted. My intended hypothesis was incorrect. What I meant by my hypothesis was that as weight increased, so would average strength. I was incorrect in thinking this. In truth, it is a valid statement to say that as weight increases, so does total pounds lifted, although this was not my original hypothesis.</p>	
Summary Statement My project compares a subject's weight with their arm strength.	
Help Received Two friends helped measure subjects' heights.	