



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Erik J. Godlewski	Project Number 31880
Project Title Ri-i-i-i-i-ip! Which Paper Towels Are the Strongest and Most Absorbent?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective was to determine which paper towel brands are strongest, and which are most absorbent. Does one-ply or two-ply matter? Is name brand better than store brand? Does density or quilting affect performance? Does it matter what kind of liquid is being cleaned up?</p> <p>Methods/Materials I tested two-ply and one-ply name brand and two-ply store brand paper towels. I used water, canola oil, orange juice, Windex, and Diet Coke as "spill liquids". My procedure was to put a paper towel in an embroidery hoop and set it over a large bowl. To test absorbance, I added drops of liquid to the towel until the liquid dripped into the bowl. To test strength, a small bowl was placed on the towel after 10 ml of liquid had been applied, and coins were added to the bowl until it broke through the towel.</p> <p>Results Number of plies and texture were not as important as density for strength and absorption, though higher density did not guarantee best results. A combination of ply, density, and texture seemed to make the most difference. Name brands performed better than store brands with some exceptions. Paper towels soaked with canola oil were almost as strong as dry towels, and much stronger than towels wet with other liquids. Paper towels did not absorb canola oil as well as other liquids.</p> <p>Conclusions/Discussion In conclusion, for both strength and absorption, the best performers were Bounty and Brawny. For strength, the store brand Thirsty was almost as good, and for absorbance, dense (but one-ply) Viva performed well.</p>	
Summary Statement Determine which properties of paper towels contribute to strength and absorbance using various liquids.	
Help Received My parents helped with photos and my sister helped with typing. My father helped with graphs.	