



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Jason A. Lee	Project Number J0115
Project Title The Effect of Ball Diameter on the Time It Takes to Fall	
Abstract Objectives/Goals The purpose of this experiment is to investigate the effect of ball size on dropping speed in viscous liquids. Methods/Materials Basically, all that is needed is an assorted number of balls, a stopwatch, glycerin, and a cylindrical container. The container is filled with glycerin, the ball is dropped into the cylindrical container and the speed is timed. The results were then recorded on a table and graph. Results The average falling time of the 1.6 millimeter ball was 37.075 seconds, the average falling time of the 3.2 millimeter ball was 10.15 seconds, the average falling time of the 4.8 millimeter ball was 5.335 seconds, the average falling time of the 6.4 millimeter ball was 36.275 seconds, the average falling time of the 7.9 millimeter ball was 2.9375 seconds, the average falling time of the 9.5 millimeter ball was 2.345 seconds, the average falling time of the 12.7 millimeter ball was 2.96 seconds, and the average falling time of the 19.1 millimeter ball was 8.355 seconds. While the balls were being dropped, I found out that small balls left touching the glycerin will sit on its surface tension, allowing more precision on the timing. The results that came out were almost perfect, and were ripe for analysis. Conclusions/Discussion My original hypothesis was that the balls falling speed would increase with its diameter. The gain in seconds per 1.6 millimeters would be estimated to be not in definite intervals, but to be somewhat exponential. With the given results, my hypothesis was fairly correct; the larger the ball, the faster it falls, but the hypothesis of how much? was not exactly identical to the results.	
Summary Statement The project is about dropping balls of different diameter to record effect in their dropping speeds.	
Help Received Father programmed a precise stopwatch in computer to help time dropping speed of the ball; Lawrence Camilletti, a mentor from Ask-A-Scientist, assisted in picking this topic.	