



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Priscilla Y. Lok	Project Number J1814
Project Title A Matter of Glues	
Abstract Objectives/Goals The purpose of my experiment was to find out if Super Glue, Tacky Glue, Krazy Glue, Elmer's White Glue, or Wood Glue worked best on wood, and if sanding the wood surface before gluing would help the glue stick better. Methods/Materials First, I obtained commonly used commercial brand glues including Super Glue, Elmer's White Glue, Wood Glue, Tacky Glue, and Krazy Glue. With five pairs of chopsticks for each type of glue, I glued the end parts overlapping each other at three centimeters length and let them dry for a week. Before I glued the other five pairs of chopsticks, I sanded off a layer of wood on each chopstick and then glued them in the same following manner. After a week, I attached the glued pairs of chopsticks on a bench so that the end of one chopstick was against the edge of the bench and a helper holding down the chopsticks to insure that the chopsticks did not move. I attached a bucket to the chopstick against the edge of the bench at eight centimeters length and gradually started pouring sand into the bucket until the bonding of the glue breaks. I repeated the same process with remaining chopsticks. Results Two types of Statistical Analysis were used to determine if there was a significant difference between each type of glue. Analysis of Variance was used to determine if there was a significant difference between each type of glues. There was a significant difference between every type of glues except Wood and Krazy glue in the sanded and non-sanded results. The t-test was used to compare the sanded and non-sanded results for each type of glue. There was a significant difference in Super and Elmer Glue results but no significant difference in the Wood and Krazy glue. Tacky glue was hard to determine because almost all the chopsticks broke in the non-bonded area. Conclusions/Discussion In conclusion, my hypothesis that Super Glue would be the strongest glue whereas Elmer's Glue would be the weakest glue was not supported. Although Elmer's Glue was the weakest glue in the sanded results, Super Glue was the weakest Glue in the non-sanded results and Tacky Glue was the strongest glue overall. My project expands the knowledge of chemistry because it demonstrates some factors that can affect how well a glue sticks to a surface such as the roughness of the surface of the wood.	
Summary Statement My project is about trying to find out which of the commercial brand glues works best on wood and if sanding the wood would help the glue stick better than just instantly sticking the wood together.	
Help Received Friend helped to fasten chopsticks onto bench; Instructor helped me learn mathematical formulas of statistical analysis	