



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Whittney L. Russell	Project Number J1821
Project Title Determining Glue Strength: Your Best Bet Might Not Be Perfect or Super	
Objectives/Goals The objective of my project is to test five diverse types of glue to see which one works the best on bonding oak wood and is also the most economical.	
Abstract Methods/Materials I started my project out by selecting five different types of glue and bonding 2 inch oak boards together, using each of the different types of glue. Once I bonded the wood together I then used clamps to keep the seam tight while the glue bonded. I used a jack to apply pressure to the glued wood. My jack was set on 4 balanced scales to even out the pressure points. I would then continue to apply the pressure until the wood would break at the seam. By reading all four scales when the wood would snap I was able to tell how much pressure the glue could withstand before breaking. The five glues that helped me receive data for my project was Super, Titebond II, Gorilla, Perfect, and Epoxy Glue.	
Results As a result of my project I found that Epoxy Glue was the glue that could withstand the most pressure at 913.8 pounds & economically it was the third cheapest glue at \$3.69 an ounce. Super glue was the second glue to handle pressure at 808.3 pounds, but was the most expensive glue, costing \$11.42 an ounce. Third was Titebond II it could handle 676.6 pounds of pressure and was the cheapest out of all of the glues costing only \$0.57. Fourth was Gorilla glue at 642.2 pounds of pressure and the cost of \$1.87. And the worst glue was Perfect glue it could only withstand 152.2 pounds of pressure and the cost was \$5.25 an ounce.	
Conclusions/Discussion In my hypothesis I believed that Epoxy Glue would be the number one bonding glue, and my data supported this. Super Glue surprised me by being the second best bonding glue. Titebond II Glue was the third best working glue which I thought it would be based on my hypothesis. Gorilla Glue didn't do as well as I had thought it would & Perfect glue which came in last just did not perform well at all. It is important to have knowledge of what you are using when building a structurally sound project.	
Summary Statement My project was about bonding different glues to wood to see which one could withstand the most pressure.	
Help Received My father helped me in preparing the jack and scales, he also helped watch the scales as I applied the pressure to break the wood. I also had assistance from my mentor Mr, Piercy in getting information and about using the data.	