



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Armen S. Arslanian	Project Number J0201
Project Title Is Plywood Stronger than Solid Wood?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment was to prove that solid wood is stronger than plywood.</p> <p>Methods/Materials An experiment was designed, consisting of two tests, Torsional Resistance and Cantilever Deflection , with ten trials for solid wood and ten trials for plywood. In the Torsional Test, the angle and weight at which the wood was broken were measured, while in the Cantilever Deflection, the amount of deflection and the amount of the weight which caused the wood to be broken were measured. Both tests relied on an experimental setup consisting of test bars and a clamp that held wood samples to the test rig. The wood samples broke according to the amount of weight applied, measured by the spring balance.</p> <p>Results The data for both tests indicated the same result, that solid wood is stronger, requiring more weight to break.</p> <p>Conclusions/Discussion Anything using solid wood would be stronger than plywood and less likely to break. Solid wood is more homogeneous and therefore has higher resistance to torsion and deflection. Some factors could have affected my results such as the irregularities in the formation of the plywood. If I were to modify this project, I would use shorter samples so that they fail at a smaller angle of torsion and smaller deflection. I would also use multiple kinds of composite wood.</p>	
Summary Statement Solid wood is stronger than plywood.	
Help Received Dad helped with the setup.	