



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Mark R. Tobias	Project Number J1822
Project Title Truss Me!	
Abstract Objectives/Goals The purpose of this project is to determine different strengths in truss designs and which truss design is the strongest. Methods/Materials Nine model trusses (3 models each of 3 designs) were constructed of the same size and type of wood but with different internal supports. One design had just a single central support, another design had a central support with two diagonal supports (Pratt design) and the third design had internal supports looking like a W (Warren design). The trusses were tested with an Arbor press to determine the pounds of pressure needed to break each truss. Results The truss that had the W design on the inside was the strongest. It held about 10 more pounds than the Pratt truss design, not breaking until 45 pounds of pressure were applied. The truss that held the least weight was the design with just a single support in the middle. It could only hold 15 pounds of pressure. Conclusions/Discussion The three different types of trusses held weight the way I predicted. I found that the more internal support beams used, the stronger the truss design. The Warren truss was the strongest because, by having the W shaped supports, it transferred the weight to all areas of the truss and not to just one central point.	
Summary Statement I wanted to determine whether additional supports in truss designs added building strength.	
Help Received My dad helped me build all the models and crush them. My mom helped me write up my project and proof read it.	