CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
Brook Jeang

Project Number
J1814

Project Title
In Bridges We Truss

Abstract

Objectives/Goals
to discover which type of truss bridge design is more efficient

Methods/Materials
A·2 bottles of rubber cement
A·30 ball point pins
A·1 protractor
A·1 set square
A·1 engineering scale
A·1 sheet of drawing paper
A·1 T ruler
A·1 weighing scale
A·7 manila folders
A·1 pencil
A·1 eraser
A·2 wooden blocks
A·1 pair of scissors
A·Table
A·1 ruler

Results
In the primary testing, the Pratt truss bridge was able to carry 1420 grams, approximately 3.6 pounds. The Warren truss bridge was able to carry 1238 grams, or 2.7 pounds. The hypothesis was proven correct. In the secondary testing,however, when the truss members were all made the same size, the Warren truss bridge was able to carry 2394 grams.

Conclusions/Discussion
My conclusion is that the Pratt truss is able to carry more loads and is more efficient. The Pratt truss is able to carry more loads because its diagonal members are under tension. Overall costs in making truss bridges depend on materials used, transportation of parts, and construction of the bridges.
Well-constructed trusses, in which all members and diagonals match and are in proportion, form sturdy trusses. When constructing trusses, it is important that all parts fit together and are in proportion.

Summary Statement
My purpose of my project is to discover type of truss design is more efficient and able to carry more loads.

Help Received
Father helped with construction of truss bridges; Teachers (Mrs. Williams) gave advice and support