



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Sucharita Kumar	Project Number J0215
Project Title "Truss" That Structure	
Abstract Objectives/Goals How does the configuration of an object's framework affect its ability to withstand weight? I believe that the more supports used in the truss configuration of an object's framework, the higher its ability to withstand weight. By having different configurations in the models I will build, I believe there will be variations in the abilities to withstand weight. Methods/Materials Materials: Grid paper to design, Wax paper, Flat toothpicks 2-3 Packs(700/pack) Wood glue, Tape, Nail clippers, Cardboard, Soda can, small metal beads, Thumbtacks, Rubber bands Procedure: 1. Plan different configurations for the structure on grid papers. 2. Test each toothpick and remove the ones that are defective. 3. Tape the grid paper on your work area. 4. Tape the wax paper on top the grid paper to avoid any glue. 5. Using the grid paper diagram as a guide, build the structure for each configuration 6. Use rubber bands and thumbtacks to support the structure as you build. 7. Let the structure dry for 24-48 hours prior to testing the stability. 8. Determine the weight it will support before breaking by slowly adding weight to the structure. 9. Make two holes on each side at the top of a soda can and tie a string through the holes. 10. Tie a piece of string to a pencil to form a loop. 11. Bend a large paperclip into a hook shape. 12. Connect one end of the hook to the pencil and another end to the soda can handle. 13. Allow the can and paperclip to hang through the hole in the cardboard that is supporting the structure. 14. Add the metal balls to the soda can until the structure is pulled down and eventually broken. 15. Measure the weight that is used to break each structure. 16. Build a total 25 structures: 5 configurations X 5 structures for each. Results The bridge type with the most Truss configuration withstood more weight with an average of 825 grams before it broke. The bridge type with the least Truss configuration withstood less weight with an average of 600 grams. Conclusions/Discussion When I added weight to toothpick bridges with different configurations, the bridge with the most truss withstood more weight.	
Summary Statement How does the configuration of an object's framework affect its ability to withstand weight?	
Help Received my mom helped me with the entire process of my project and the supplies. My brother shared his toys for the experiment. They helped me add weight to the bridges. my dad reviewed my project. The engineers at #Ask a Scientist night# gave their feedback about my project. My teacher Mr. Nelson taught me how the	