



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Payal A. Patel	Project Number J0222
Project Title What's The Breaking Point?	
Objectives/Goals Which truss bridge (Warren, Pratt or Howe) will hold the most water? Hypothesis: Because of how the compressive and tension forces are handled by the vertical and diagonal beams in a Pratt Truss, I believe the Pratt Truss will hold the most weight compared to the Warren and Howe Truss.	
Abstract	
Methods/Materials Materials: Ruler; Graph Paper; Pencil; Small wood saw; Balsa wood; Hot glue or superglue; Supports; Bucket with handles; String with clips; Jug; Measuring jar (mL); Water. Method: 1. Draw a full-scale, side-view drawing (on the graph paper) of each of the three trusses (Warren, Pratt and Howe) 2. Cut balsa wood to fit onto the bridge templates 3. Connect wood pieces with glue and let dry until bridge is firm 4. Repeat steps 2-3 to make 5 of each type of truss 5. Attach one clip to bucket, slip other clip through truss then put remaining clip on bucket. 6. Pour water slowly in intervals of 20 ml (1g=1 ml) and record how much weight bridge holds until it breaks	
Results After 3 trials of testing the Warren, Pratt and Howe Truss, the averages for each of the bridges are as follows- Warren-4733 mL Pratt-4896 mL, Howe-4776 mL	
Conclusions/Discussion My experiment clearly showed that the Pratt Truss on average held the most water out of the three trusses. On average, the Pratt Truss held about 100 more milliliters of water as compared to the Howe and Warren Truss.	
Summary Statement Which truss bridge (Warren, Pratt or Howe) will hold the most water?	
Help Received Parents bought supplies. Father helped construct the truss bridges. Science teacher helped with clarifications.	