Contest Objective

To design the lightest possible bridge to span a 24" gap with minimal deflection (bend). The bridge will be loaded until failure and the bridge with the highest load-to-weight times deflection ratio will win the contest (see Item 7 below). Maximum design dimensions and support conditions are in the accompanying diagrams.

Rules of the Competition

1. Each entry may be an individual or team effort (maximum of three team members).
   Note: Team entries will be required to divide all prizes awarded.

2. Only two materials are allowed in the construction: Elmer’s yellow wood glue and wooden Popsicle® sticks. The maximum number of sticks is 200, but remember the lightest bridge holding the maximum load with minimum deflection will win.

3. Bridges cannot be painted or coated with any materials.

4. Each bridge must span a 24” gap during testing. So the bridge must be longer than 24”. The bridge can be no taller than 12” and no wider than 6”.

5. The bridge must be open to allow a 3”x3”x3” cube to pass through the bridge (see drawing). A deck bridge structure can be used with a minimum 3” width (structure below the deck). The bridge must have at least two parallel trusses.

6. Each bridge must allow a minimum opening of 2”x2” square at the top to allow the test load to be applied on the deck of the bridge.

7. The failure load is determined when the bridge breaks, the load breaks through the deck of the bridge, the bridge deflects (bends) more than 3° from horizontal, or until the maximum load is reached. The ratio of the failure load divided by the deflection, and that divided by the weight of the bridge will be used for scoring.

   EXAMPLE: 100 pounds failing load, deflection of .250 inches, and bridge weight of 2 pounds equals a score of 200 points. 100/.250/2 = 200

Highest Point Score Wins

Judging will be conducted by a panel established by the Student Bridge Design Committee. All decisions are final. Each applicant will be notified of his or her time for prejudging and testing. The testing will be done in two-hour blocks during the last Saturday of Engineers Week. Visit www.etcs.ipfw.edu/EweekBridgeContest for details.

The contest is FREE but all participants (including all team members) must register online at etcs.ipfw.edu/EweekBridgeContest