

Popsicle Stick Bridge Competition

When: Week 10

Where: DBH 1427

The objective of this competition is to design and build a Popsicle-stick bridge that will withstand the highest load. The bridge will be loaded mechanically by a 3" x 3" wooden beam placed at the mid span of the bridge. If the bridge flexes and touches the bottom surface before any fracture, the loading will stop and will be read at that point. The bridge that earns the highest score wins: [Score = P / W = Ultimate Load / Weight of the Bridge]. Materials required: Craft sticks – 4.5" L x 0.375" W x 0.083" thick and Elmer's WHITE glue. **DISCLAIMER:** Wood glue, glue containing resin, or any other cement binder is not permitted! Dimensions rules: No part of the bridge may exceed 12" above the supports or 4" below the supports. The bridge must have a minimum 4" wide roadway. The bridge width must be 5" or less. The length of the bridge must be greater than or equal to 26", but less than 30." Roadway rules: The roadway must be constructed as if wheeled traffic were to cross over its span. The roadway must be continuous along its width over the entire distance between the supports. The roadway must not exceed a slope of 2-horizontal to 1-vertical stick (approx. 26.5° from the horizontal). Construction rules: No more than 50% of any plane surface of any stick may be covered by or glued to another stick. Each stick consisted of 2 plane surfaces. Sticks may be cut shorter, but no more than 50% of the shortened plane surface may be covered. The bridge may only have a maximum of 25 cut sticks. A maximum of six sticks may be stacked face-to-face at any joint. There must be a 1-inch gap between any two gaps. Stack and gaps are illustrated below:

