2025 ASCE Mid-South Student Symposium

Balsa Bridge Competition

4/4/25 – 6 pm

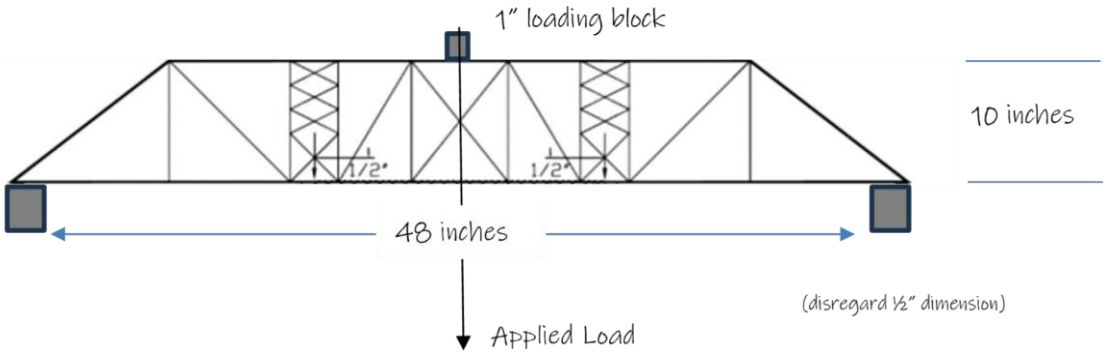
Teams will compete to construct a Truss bridge from balsa wood, as outlined below in preparation for the 2025 ASCE Student Symposium. Schools are limited to one bridge. Participation is not required. This is available to all schools.

Materials:

Only balsa wood and glue that is commercially available (Walmart), commonly referred to as "crazy glue" containing cyanoacrylate, is allowed. Individual balsa wood pieces must be no larger than 0.25 inch by 0.25 inch by 15 inches. "Lamination" of the bridge is not allowed. This includes covering the members individually with glue. No paint adhesives should be used on the bridge. Weights will be provided by host, but participants are allowed to bring weights. Samples of materials (wood and glue used) should be supplied at time of competition.

Dimensions & Design Specifications:

The bridge must span 48 inches and be no longer than 52 inches. Width of the bridge (perpendicular to span) is limited to 7 inches. Maximum height of the bridge is limited to 10 inches (from lowest part to highest part). The bridge must utilize trusses or arches to support the weight; beam bridges are not allowed. The members of the bridge must be no thicker than 0.75 of an inch. The base of the bridge may be no thicker than 0.75 of an inch, from top to bottom. All glue must be between two pieces of balsa wood. The bridge must be designed/constructed to allow loading apparatus to be placed on top with a piece of 'all-thread' or similar, to continue through the bridge. See below.



Loading:

A 1-inch square steel tube will be used to apply load to the top of the bridge as shown. Bridge must be constructed so an “all thread” rod fixed to the middle of the steel tube is able to pass through the bridge to suspend a bucket or similar loading apparatus. Bridge will be placed between two tables above the floor and the loading apparatus placed. Once loading begins, no adjustment to bridge or loading apparatus is allowed. Other than the two ends, no part of the bridge may touch the tables or floor. Load will be continuously increased until failure of the bridge occurs. Weight of the loading apparatus and accumulated load will be determined at failure to arrive at failure load.

Scoring:

Each bridge will be evaluated solely by failure load divided by weight of bridge.

Please bring the bridge ready for demonstration and testing to the 2025 ASCE Student Symposium.