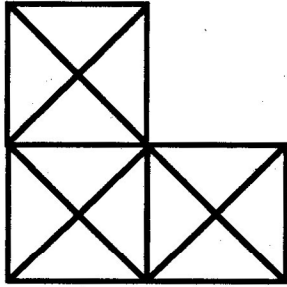
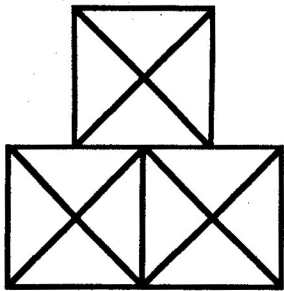


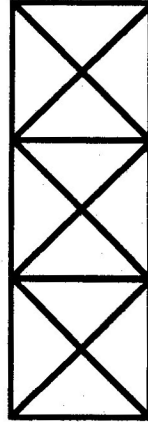
Correct



Incorrect



Incorrect



Correct

DIAGRAM B

Required Contest Personnel

- A. Contest Coordinator
- B. Judges - a minimum of three (3) per level
- C. Timekeeper/Monitor

Required Materials and Supplies

- A. Table and chairs for judges.
- B. Tables and chairs for contestants. Tables should be suitable for cutting and gluing. Allow table space of six (6) sq. ft. per team (2' x 3').
- C. Stopwatch or clock for timekeeper.
- D. Room - must be securable for equipment and entries.
- E. Construction materials
 1. Adhesive (Aliphatic resin - Elmer's carpenter glue or Titebond tinted with two ounces of food coloring per gallon.)
 2. Balsa 1/8" x 1/8"
- F. Construction tools
 1. Grid paper, 1/4" squares, 11" x 17"
 2. Fiber board, 1/2" x 12" x 12"
 3. Cutting board, 12" x 12"
 4. Single-edge razor blade
 5. Straight pins
 6. Ruler
 7. Tape

G. Testing equipment

1. PITSCO Bridge Testing Device
 - or
 - 1a. Testing block set
 - 1b. Testing hook
 - 1c. Two 5-gallon containers per testing station
 - 1d. Lead shot weight
2. Scales
3. Calculator

H. Evaluation sheet

Criteria for Judging

- A. Bridge efficiency shall be determined by the following formula:

$$\text{EFFICIENCY} = \frac{\text{Load (lbs.)} \times 4.45 \text{ (g/lb.)}}{\text{Mass of Structure (g)}}$$
- B. An increasing load will be applied to the bridge via the test hook until the bridge fails. The load will be weighed and entered in the formula as "Failure Weight."
- C. The structure will be weighed and the weight entered into the formula as "Weight of Structure."
- D. The bridge with the highest number is the winning bridge.

Note: Teacher's that desire information about the Technology Student Association (TSA) should call 1-703-860-9000 or request information by writing:

TSA
1914 Association Drive
Reston, VA 22091.

Most States have TSA chapters which conduct contests in Structural Engineering and more than twenty other areas.