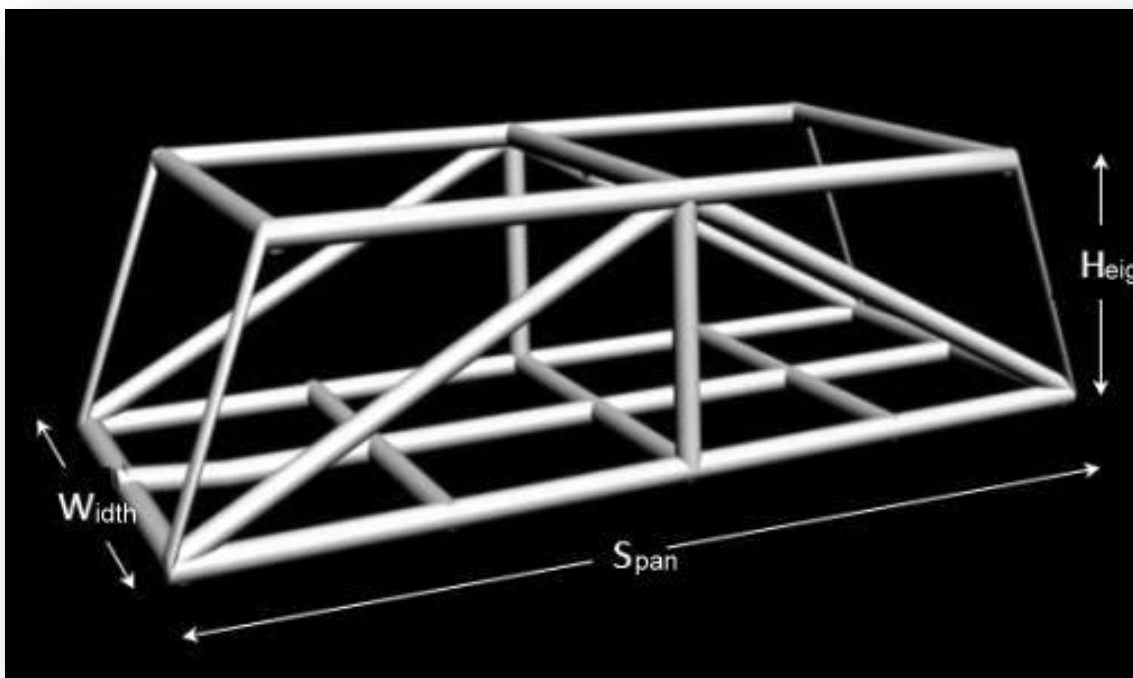


PROBLEM STATEMENT

Design a three dimensional self-supporting model bridge. The physical constraints of the bridge are according to the following specifications:

- Span 500 mm
- Height 100 mm (minimum)
- Width 120 mm (minimum)

The sample figure is shown below :



DESIGN CONSTRAINTS/SPECIFICATIONS

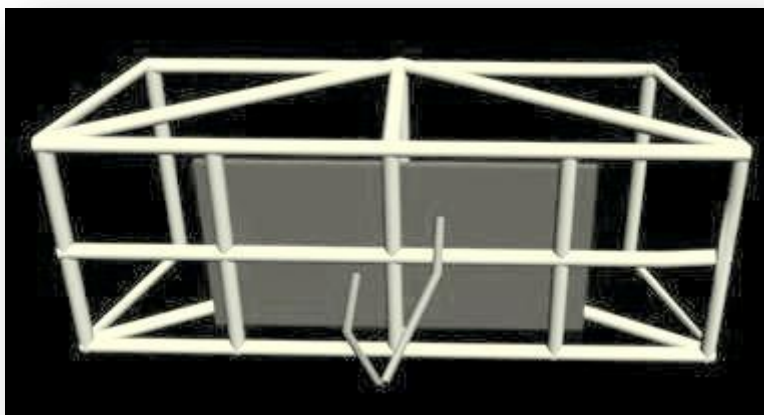
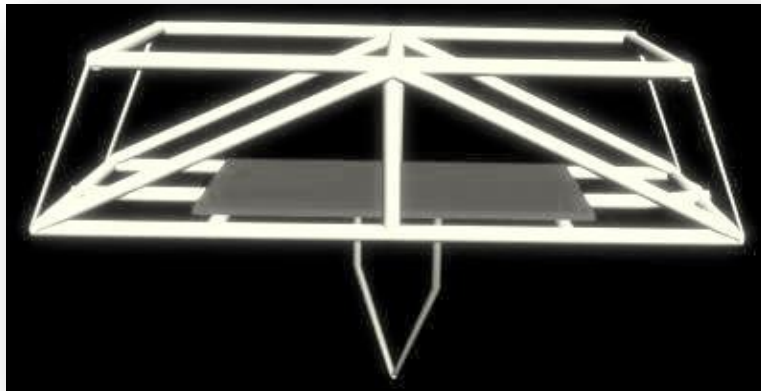
1. The bridge should permit unobstructed movement over its deck (there should be no members inside the bridge)
2. No part of the deck should be more than 50 mm above the abutments (support level)

LOADING SPECIFICATIONS (FOR TESTING)

1. The rate of loading shall be specified during the time of the contest.
2. Holding the load-carrier during loading is not allowed.
3. The bridge will be loaded by hanging weights from a 5 mm thick mica board of size 180 mm x 80 mm, through a V-bolt attached to it with spacing(l) between legs being 120 mm.

FAILURE LOAD IS DEFINED AS:

Maximum load carried by the bridge before it fractures



MATERIALS PROVIDED

- 500g of spaghetti
- 100g of epoxy-resin
- Mini hand saw
- Cellophane tape
- Ruler
- Pencil
- Sand paper
- Butter paper
- Instant glue (fevi quick)
- Eraser
- Drawing sheet

FABRICATION SPECIFICATIONS

1. The whole bridge must be fabricated by using provided materials only; use of any additional material is not allowed.
2. The model will be made from spaghetti sticks and joining them by epoxy, however you can use instant glue or cellophane tape for keeping spaghetti sticks, etc., in place temporarily.
3. You can combine spaghetti sticks as per your design by gluing them together
4. The cellophane tape must NOT be part of the final structure.

MATERIAL PROPERTIES

- **Spaghetti stick:**
 1. Young's modulus of elasticity ~ 4 GPa
 2. Diameter: 1.78 mm
 3. Breaking stress in tension ~ 18 Mpa

