

Bridge Building Contest

Whose bridge can hold the most weight?

Materials:

20 large straws

Masking tape

Candy (weights)

Rules:

Make a bridge with the materials provided.

The bridge must stand 5 inches off the tabletop.

The bridge must be at least 2 spans long.

Helpful terms:

Span – the distance between two vertical support beams

Truss – latticework between beams that strengthens the bridge

Compression - a force that acts to compress or shorten the thing it is acting on

Tension - a force that acts to expand or lengthen the thing it is acting on

Beam Bridge

- can span a distance of 200 ft
- taller bridges can span a larger distance
- compression acts on the top surface of the deck and tension acts on the bottom surface

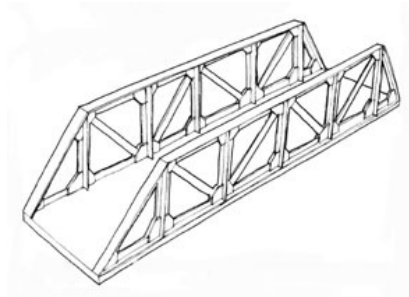
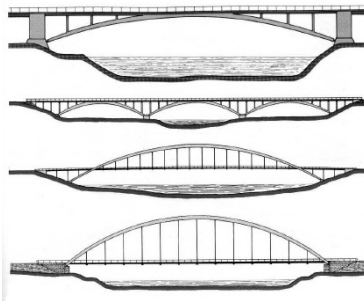


Image from www.design-technology.org



Arch bridge

- can span a distance of 800-1000 ft
- compression acts on the top of the arch
- there is negligible tension

Image from moment.mit.edu

Suspension bridge

- can span a distance of 7000 ft
- deck is hung from cables attached to towers
- compression and tension are transmitted to towers and cables

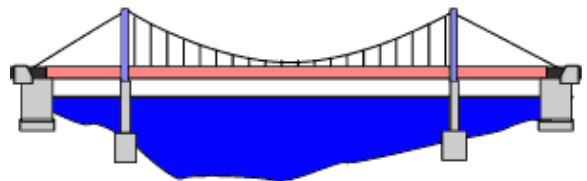


Image from matsuo-bridge.co.jp