

## **Popsicle Stick Structures**

by Kimberly Garcia

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**Educational Goals:** Learn basic principles of basic structural elements by building a structure.

**Discipline:** Structural Engineering.

**Description:** An enthusiasm-building icebreaker exemplifying how a well designed structure—even with small, light materials—can transfer forces and carry weight

**Time:** 60 minutes.

**Materials:** Popsicle sticks, Glue, Tape (with limitations), Weight (Sweets catalog, etc)

**Additional Resources:** None

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**Activity:** Group Activity

Break the team up into groups of 4-6 students, and give each group a kit of the materials listed above. Each team should have 50 popsicle sticks at least 1 1/2” long, depending on the length of the sticks (typ.3”). Using a minimum amount of tape, construct structural shapes. The shapes designs are open to whatever the teams want to make, in whatever configuration they, at whatever size they want. Mentors should be involved with the students, helping them out when they need it.

After a 30 minute design period, load each structure with a stack of books to see which one hold the most weight. Observe what happens, and solicit the students’ observations. How did a structure fail? Why did it fail? Talk to them about different basic structural elements, such as trusses, frames, cubes, prisms, and columns.