

The Steel Cable Bridge

The goal here is to design and build a working model of a footbridge to span a 24" gap using cables as the primary structural elements.

The judging criterion will be **stiffness**. We will test stiffness with three tests that measure the displacement and deflection of the bridge when loaded with a set of predetermined, standard loads. The three tests will measure to what degree the bridge deforms with gravity loads, lateral loads, and uplift loads.

You can use the materials listed below, a "cable" of your choice (I recommend unwaxed dental floss or thin string; thread is probably too thin), and any glue you like. You can glue any compressive members to the cables and cables to cables, but not compressive members to compressive members.

Remember to design a scheme to resist **uplift loads**.

You don't have to use foamcore for the ground, but make sure that whatever you use, it is stiff enough to resist the overturning of the masts when gravity loads are applied to the bridge.

You can deploy up to 24, 0.1"-3 inch, "sticks" of balsa wood/basswood/plastic/metal/etc. as compression members if needed (1/4" thick).

