Household Materials Bridge

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Educational Goals: Learn basic principles of how to construct a bridge.
Discipline: Structural Engineering.
Description: Construct a bridge out of household materials to hold the most weight.
Time: 15 minutes reviewing per session.
Materials: Wine corks, Paper cups, Pipe cleaners, Rubber bands, Foam core, Popsicle sticks, Push pins, (2) Sweets catalogs
Additional Resources: None

Activity: Group Activity

Break the team up into groups of 4-6 students, and give each group a kit of the materials listed above. The rules are simple and few:

- Each team has 30 minutes to build their bridge.
- The form core must be used as the base of the bridge.
- Sweets catalog must fit through the bridge's width, or span.
  - The short side must fit through the bridge's width, or span.
  - Two stacked catalogs must fit under the bridge
- No glue or tape may be used.
- The completed bridge must hold at least (1) 4" x 4" square tile for at least 15 seconds.

Mentors should be involved with the students, helping them out when they need it.

After the students build their bridges, load them one at a time, so everyone can see what happens and cheer on their bridges. If a bridge fails, ask them why.

Discuss what is happening to the structure as it is being loaded and through failure.

The team that constructs a bridge that holds the most weight wins!