Building Bridges Lesson Plan

Amount of time Demo takes: 3 mins.
Try this at home!

Materials
- 4x12 strips of poster board
- 2 cans of the same size
- Pink rectangular erasers
- Laminated paper with circles on it

Set-up Instructions
1. Lay the paper with circles on it out on the table and place the cans in the circles.
2. Place two paper strips and the erasers on the table in front of the cans.

SAFETY! Safe Demo!

Lesson’s Big Idea
- Arches are stronger than a linear design. Bridges are built with arches to strengthen them so that they can hold more weight.

Instructional Procedure
1. Give the students one strip of paper and instruct them to design a bridge that can hold the most amount of erasers.
2. Discuss what worked and what didn’t work.
3. Give them a second strip and ask them to do it again. See if a different design works better.
4. Compare how many erasers you can hold with one piece of paper versus two.

Assessment/sample questions you can ask
1. What is the best design? Why?
2. Does having a second piece of paper make a difference?

Conclusion
- Arched designs are stronger because they have two supports helping them
whereas a linear design puts all the weight in the middle.

**Clean Up**
- Clean up between demos if needed. When completely finished gather all materials listed for this demo and make sure everything is accounted for. If something was used up, broken, or damaged. Let someone know so it can get replaced or fixed.

**References**
- [http://familyengineering.org/](http://familyengineering.org/)

**Next Generation Science Standards**
- K-5
  - K-2-ETS1
  - 3-5-ETS1
- 6-8
  - MS-ETS1-2/3/4
- 9-12
  - HS-ETS1-2