

## Testing Beam and Arch Bridges Lab Procedures

Materials needed for each group:

- 2-4 bricks
- Corrugated card board
- Weights

Procedures:

1. Place two bricks 20 cm apart.
2. In order to make a higher structure, place the second set of bricks on top of the first layer of bricks.
3. Place a piece of corrugated cardboard between the two bricks.
4. Gradually place weights in the center of the cardboard until it begins to sag in the middle.
5. Record the amount of weight the bridge held before it began to sag.
6. Rebuild your bridge as stated in steps one and two above.
7. Place an arch between the two bricks by carefully bending a piece of corrugated cardboard in the form of an arch. Make sure that it fits snugly between the bricks that are 20 cm apart.
8. Place a piece of cardboard on top of the arch between the two bricks.
9. Gradually place weights in the center of the cardboard until it begins to sag in the middle.
10. Record the amount of weight the bridge held.

Observations:

1. What type of bridge did you build at the beginning of the activity?
2. What type of bridge did you build the second time?
3. What effect did adding the arch to the bridge have, if any?
4. Which bridge would you rather cross? Why?