

# Investigation Procedures

1. Record the material your group is testing in column A of your data table. Adjust your push-pull spring scale so it reads 0 N when no force is applied to it.
2. If you are testing two layers, tape the edges of your two layers together. Use a pencil to mark the center point of your object where you will apply a force using the spring scale.
3. Place your material between two bricks with 1" of each edge of the material overlapping the brick. Tape down one end of the material to the brick surface.



4. Measure the height of the center point of your object above the table. Record this in *Column C*, row 1 of the data table in the *Results* handout.
5. One member of the group should place a spring scale against the center point of the object and push down with 1 N force and hold it at that level. Another group member should measure the height of the beam with the force applied to it. Have a third member record that height in column D, and calculate the deformation in column E of the data table.



6. Remove the force from the object. Record whether the object returns to its original shape when the force was removed in column F.
7. Repeat the last two steps for a new data point. Some should be for different amounts of force than ones you already tested. However, reserve at least 2 measurements to repeat a previously tested amount. Don't forget to record the height before you apply the force in column C and the amount of force you are apply in column B.
8. When you have the table complete, have other members of the group record and make a copy of the data in their own data tables.
9. Label the x-axis of your graph with the independent variable for this experiment. Label the y-axis of your graph with the dependent variable for this experiment. Label the graph title with the type of material and thickness (1 layer thick or 2 layers thick) you tested.
10. Use the symbols in the key to plot this data:  
**(value from column B, value from column E).**