

Structures and Designs

Lab #2 Columns

NAME: _____

Due: _____

Purpose: To discover what is the strongest pillar shape.

Hypothesis: _____

Procedure:

- 1) Build three shapes out of three separate pieces of construction paper.
- 2) Make sure that they all stand the full length of a sheet of paper.
- 3) Stand up the square pillar and place a thin book on the top of the pillar.
- 4) Remove the book and use a balance to find the mass of the book.
- 5) Replace the book on the pillar and add weights until the pillar collapses.
- 6) Record the mass that the pillar held up prior to the collapse. (Don't include the last weight that broke it.)
- 7) Repeat steps 3 to 6 with the rest of the shapes.

Data:

	Mass (units)? _____
Rectangle	
Triangle	
Cylinder	

Analysis Questions: (answer on loose leaf)

1. Draw each shape and show the thrust line on each shape using arrows.
(Note: Most objects transmit the force to the corners of the object)
2. Explain why the _____ out performed the other shapes.
3. What type of stress did we put on our shapes?
4. Would we get the same results if we tested a different type of stress?

Sources of error: (answer on loose leaf)

Conclusion: (answer on loose leaf)

<input type="checkbox"/> Incomplete or not handed in by due date <input type="checkbox"/> Messy or missing data <input type="checkbox"/> Poor knowledge exhibited in analysis questions <input type="checkbox"/> Few or weak sources of error <input type="checkbox"/> Incorrect or unclear conclusion <input type="checkbox"/> Redo and parent signature required	<input type="checkbox"/> Complete by due date with accuracy <input type="checkbox"/> Accurate data <input type="checkbox"/> Good knowledge exhibited in analysis questions <input type="checkbox"/> Credible sources of error <input type="checkbox"/> Conclusion needs support <input type="checkbox"/>	<input type="checkbox"/> Completed by due date with detail <input type="checkbox"/> Accurate & clean data <input type="checkbox"/> Excellent knowledge exhibited in analysis questions <input type="checkbox"/> Insightful sources of error <input type="checkbox"/> Supported conclusion <input type="checkbox"/>
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