PHYSICAL SCIENCE CONSTRUCTION CHALLENGE!

CHALLENGE: To construct the tallest tower you can in the time allotted while using only the materials supplied. This tower must be able to support the weight of a 25 gram mass (approximately 10 pennies).

MATERIALS: Two sheets of newspaper, 50 cm of masking tape, scissors

TIME LIMIT: 30 minutes. We will have a PRACTICE DAY and the following day will be the Build and Test Day.

RULES:

- Again, you can only use the materials given.
- We will work with partners on this.
- Your structure must be free-standing (no taping it to the table top or floor).
- The height of your tower will be determined by the vertical distance it extends from the top of the table (or floor) to the "platform" where the mass will be placed. This measurement will be made before the 25 gram mass is placed on the platform.
- The tower must hold the mass for a minimum of 10 seconds to qualify.

Points will be awarded based on the formula below

ITEM	POSSIBLE POINTS
Tower Height	Top 1/3 - 15 pts
	Middle 1/3 - 12 pts
	Bottom 1/3 - 9 pts
Support Mass?	YES! - 5 pts
	No - 0 pts.
Follow Up Report	30 points
TOTAL POSSIBLE	50 POINTS

NOTES:

- The idea of Practice Day is just that - to try different designs based on good engineering principles.
- It would be an EXCELLENT idea (in other words, DO IT!) to research various designs before we come in for Practice Day. Also, it wouldn't hurt to actually PRACTICE at home too.
- On Build and Test Day, you will only have 30 MINUTES to make it happen. Make sure you have your act together!
    - K.I.S.S. rule!
- We will start from scratch on Build and Test Day. Even if you build an "awesome" tower on Practice Day, you can't use it on B/T Day.
- The “Big Money” on this project is the write up!

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FOLLOW UP REPORT

Directions: Answer each question below with one or more well-written sentences. The report should be typed and each student is required to submit. *<u>Electronic Submission (e.g. Google Docs) is preferred!</u>*

1. What designs ideas did you try out on the “practice day”? Were they successful?

2. How did you come up with the design you used on Build and Test day? Was it mostly trial and error or did you do some research? LIST the sources of your information.

3. Did you practice building this tower at home? If so, how much?

4. Were you satisfied with the design and performance of your tower? If you had 6 hours to build this tower, once again using only the materials supplied, what would you do differently?

5. Did your tower support the 25 gram mass? If so, why? If not, why not?

6. How was the best performing tower in the class different from yours? Why do you think it performed better? If yours was the best, describe what made yours more successful than the others.

7. Did you learn anything about forces and equilibrium from this project? Describe.

8. Did you learn anything from the "Anatomy of the Collapse" movie? Did this help you as you constructed your tower? Describe.

9. What did you like about this project? What did you dislike? What suggestions would you make to improve this project for future Physical Science classes?