

Global Precipitation Measurement Mission

Name(s): _____ Date: _____

Building for Hurricanes Engineering Design Challenge Capture Sheet

Using the guiding questions below and the images of various types of towers and structural elements provided, look at the materials you have available and make a plan for your tower.

- Which combination of materials will make the tower as tall as possible (measured to the bottom of the tennis ball)?
- What tower shapes could you use? Should your base be round? Square? Triangular?
- Can you be creative about using the materials in an unexpected way?
- How can you get the tower to be freestanding, not taped to the table, and yet not fall over?
- Think about the forces on the tower, wind from the side and gravity pulling down. How you will build your tower to resist them?

Tower design plan:

Global Precipitation Measurement Mission

Testing:

My/our final tower was _____ cm tall (measured to the bottom of the tennis ball)

My/our tower stood for _____ seconds at the _____ fan speed.

Other observations (e.g., points of failure or points of strength, did the tower tip over or collapse downward) _____

Analysis of Results:

How well do you feel your tower meet the criteria (i.e., tall as possible, hold up a tennis ball, withstand the wind)? _____

What were some strengths and weaknesses of your design? It may help to think about some of the others towers you saw tested for comparison. _____

What are the top two things you would improve about your tower? Why? (If time allows, make changes and retest your tower.) _____

Reflect on your overall experience building the tower. What did you find challenging? Easy? Fun? Frustrating? _____

If you had time to redesign and rebuild your tower, describe the improvements you made and how the results of the new test compared to the first. _____
