

4.4: Procedures

You will investigate and compare the properties of paper towels.

Absorbency

1. Choose the four brands of paper towels you will be testing and obtain 2 sheets of each. Label the sheets with the brand name.
2. Draw the table for absorbency data. **Do not fill in data until you have read the instructions for obtaining that data.**

Table 4.4.1: Absorbency Data

Paper Towel Brand	Predicted Absorbency Ranking	Dry Mass (grams)	Wet Mass (grams)	Amount of Water Absorbed (grams)	Measured Absorbency Ranking

3. List the brand names of the paper towels your team chose, in your table. Number the predicted rankings for the paper towels, in your table; give a 1 to the paper towel you expect to have the best absorbency and a 4 to the paper towel you expect to have the least absorbency.
4. Cut an equal size piece of each brand of paper towel. Label these pieces with the brand name.
5. Devise a process for testing the absorbency, which includes measurements of the dry mass and wet mass for the paper towel pieces. Follow the process and complete your table.

Clean-up

- Throw away wet paper towel pieces
- Completely dry Triple Beam Balance
- Use classroom paper towels to dry the team table

Speed

6. Draw the table for speed data and list the brand names of the paper towels your team chose. Read the instructions for obtaining your *speed* data.

Table 4.4.2: Speed Data

Paper Towel Brand	Predicted Speed Ranking	Time to Absorb Water	Measured Speed Ranking

7. Cut an equal size thin strip of each brand of paper towel. Label these pieces with the brand name.
8. Number the predicted rankings for the paper towels, in your table; give a 1 to the paper towel you expect to have the fastest absorbency time and a 4 to the paper towel you expect to have the slowest absorbency time.
9. Devise a process for testing the speed at which each strip absorbs water, which includes time measurements. Follow the process and complete your table.

Clean-up

- Throw away wet paper towel pieces
- Use classroom paper towels to dry the team table

Strength

10. Draw the table for strength data and list the brand names of the paper towels your team chose. Read the instructions for obtaining your *strength* data.

Table 4.4.3: Strength Data

Paper Towel Brand	Predicted Strength Ranking	Observed Strength Ranking

- Cut an equal size piece of each brand of paper towel. Label these pieces with the brand name.
- Number the predicted rankings for the paper towels, in your table; give a 1 to the paper towel you expect to be the strongest and a 4 to the paper towel you expect to be the weakest.
- Devise a process for testing the strength of the wet paper towel pieces, using the materials provided (clothespins and/or various masses), which includes specific observations. Follow the process and complete your table.

Clean-up

- Throw away wet paper towel pieces
- Use classroom paper towels to dry the team table

Cost

14. Draw the table for cost information and list the brand names of the paper towels your team chose. Read the instructions for obtaining your *cost* data.

Table 4.4.4: Cost Data

Paper Towel Brand	Cost per Roll	Square Feet per Roll	Calculated Cost per SQ FT

15. Use the information from the packaging to calculate the value of each paper towel (SQ FT per penny), and record this value in your table.

Clean-up

- Throw away any remaining pieces of paper towels at your team table
- Discard water outside (water plants)
- Use classroom paper towels to completely dry beaker

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