

Name: _____ Date: _____ Period: _____

Scientific Inquiry Lab: Comparing Paper Towels

Objective: Apply scientific inquiry to determine which paper towel can hold the most water.

Materials:

Paper Towel A, B, C, D, eye dropper, paper plate, cup of water

Scenario:

Ms. Gerber is tired of buying paper towels that fall apart when she cleans her house. She would like to know what paper towel can hold the most water and therefore save her money by using less paper towels. Are you able to help her solve this problem?

Assignment:

Use scientific inquiry to answer the question: Does paper towel A, B, C or D hold the most water?

Procedure:

1. Get in your lab groups and have one person obtain all materials.
2. Record the question to be answered on your Student Activity Worksheet.
3. As a group, form a hypothesis to the question (remember, a hypothesis includes a predicted answer AND an explanation for that predicted answer in If...then format). Record your hypothesis on the Student Activity Worksheet. Also, identify the variables of the experiment on your Student Activity Worksheet.
4. Test your hypothesis by completing the following experiment:
 - a) Take paper towel brand A and have two scientists hold the piece flat over the paper plate
 - b) Another scientist will count as he or she places drops of water on the center of the paper towel.
 - c) Record the number of drops the paper towel absorbs until it begins to leak onto the paper plate in your chart on the Student Activity Worksheet.
 - d) Repeat steps a-c three more times.
 - e) Complete steps a-d for paper towel brands B-D.
5. Calculate and record the average water drops held for each paper towel on your Student Activity Worksheet. Use the following formula:
(Sum of Drops for Brand A)/4
(Sum of Drops for Brand B)/4
(Sum of Drops for Brand C)/4
(Sum of Drops for Brand D)/4
6. Construct a bar graph that compares the **average** number of drops held for each paper towel. Use colored pencils, a ruler & the following information:
 - a. Graph Title: Paper towel brand versus Average drops of water held
 - b. X-axis Label: Paper Towel Brand
 - c. Y-axis label: Average drops of water held
7. Complete the Analysis on your Student Activity Worksheet

Analysis (complete sentences required):

1. What paper towel brand holds the most water?

2. What are the two parts of a hypothesis?

3. Was your hypothesis supported or refuted? Why or why not? Use actual data (real numbers) to provide evidence for what you say.

4. Identify any errors in your experiment. Why might you have gotten different results for each trial?

5. Why might other groups in the class have different results than your group? Explain.

6. What parts of the scientific inquiry process did you use in this experiment? Provide an example of each part.
