

**Pre-lab Questions:**

**Directions:** Get a computer and research the following: Provide a well written paragraph explaining your answer for each question.

1. What is sodium polyacrylate?
2. What is the difference between hydrophilic and hydrophobic? Which part of a diaper is hydrophobic?
3. What is a super absorbent polymer?
4. What is found in the normal contents of urine and what is the pH level?
5. Compare the chemical structure and polarity of sodium polyacrylate and water? How does sodium polyacrylate interact with water?
6. How much waste is created by disposable diapers each year in the United States?

\*You must have these checked and approved by your teacher before you can move on.\*

# Diaper Dilemma: Greener Globes Corporation

It's been a rough year for our economy. Several local businesses are in financial pinches. Bulldog Hospital needs to cut their budget and they want to save on their trash bill. Your company Greener Globes has been hired by Bulldog Hospital to work on reducing hospital



waste. Your boss has put you in charge of this project. You need a raise, so you are willing to perform quality work. Your company was specifically hired to look at the diaper waste in the hospital. The hospital has a lot of diaper waste when you consider all of the babies and elderly patients that wear diapers. We won't have a society if we destroy our environment. You are looking for a greener solution to the hospital's waste problem. In the words of Margaret Mead, "Never

doubt that a small group of thoughtful committed citizens can change the world; indeed, it's the only thing that ever has."

## You have the following materials:

1. 4 brands of diapers
2. Ice cubes
3. Hot plate
4. Salt water
5. Sugar water
6. Water
7. Beakers- 250mL



## Investigation:

Devise a test from these materials. Your task is to determine which diaper brand is the most absorbent, creates the least amount of waste, and is cost effective. You will present your case to the hospital so that they can purchase the most bang for their buck while protecting the environment.

\*Before you begin a test, you must have your teacher initial and approve your procedure.

**Post-Lab Questions:**

Write a formal letter with proper headings to the hospital. Explain your research conducted at Greener Globes to solve their problem and your findings. Include data and pictures. Make a recommendation based on your data as to which diaper brand the hospital should use.

\*This will be graded by rubric. Look at the rubric before you write your letter.\*

\*You will also present your findings to the class. This will be graded by rubric. Look at the rubric before you write your letter.

