

Lima Bean Lab

Making Accurate Measurements

Goal: To measure the length, width, mass, and volume of 5 dry beans versus hydrated beans and graph the data.

Materials available (not all materials will be used):

| | | | |
|--------------|---------------|--------------------|--------------|
| lima beans | small cup | tap water | test tubes |
| beaker | food coloring | thermometer | paper towels |
| metric ruler | hot plate | balance | salt |
| marker / pen | dictionary | graduated cylinder | masking tape |

^ Procedure:

- ^ You will be responsible for writing up your procedure for the lab. Be as specific as possible.
- ^ Describe the steps you will take to make the measurements.
- ^ Identify the materials you used in your experiment.
- ^ Identify the equipment you need to use and explain how to properly use the equipment. Refer to the measuring devices we used in class in the first measurement lab.
- ^ Record any measurements you make (*You need to measure at least 5 beans*). Label the beans so that you can check them the next day.
- ^ You will be able to start the lab on Day 1 and complete it on Day 2.
- ^ All questions should be answered on separate loose leaf paper and the entire lab report should be submitted with a cover. Cover should be on plain copy paper and include Title of Lab, Appropriate Illustration, Name, Class

Name: _____ Date: _____ Period: _____

Lima Bean Lab

Making Accurate Measurements

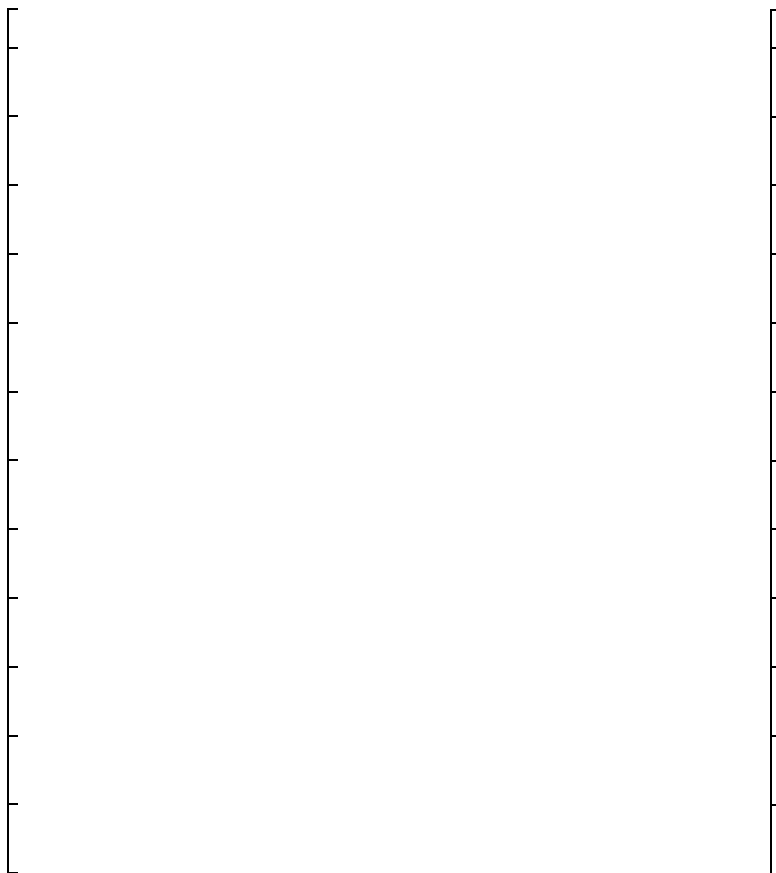
Student Lab Sheet

Purpose:

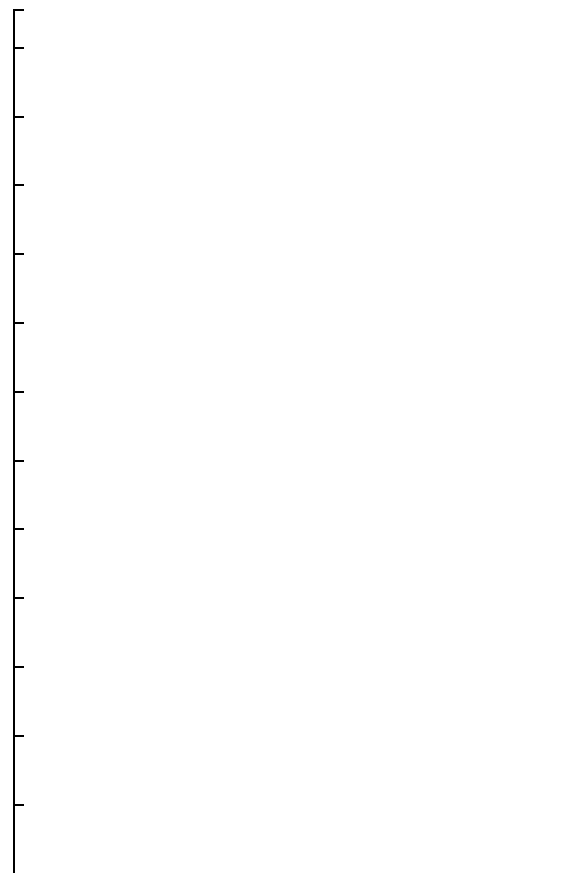
Hypothesis:

Data:

Data Table 1: Length and Width (Day 1)



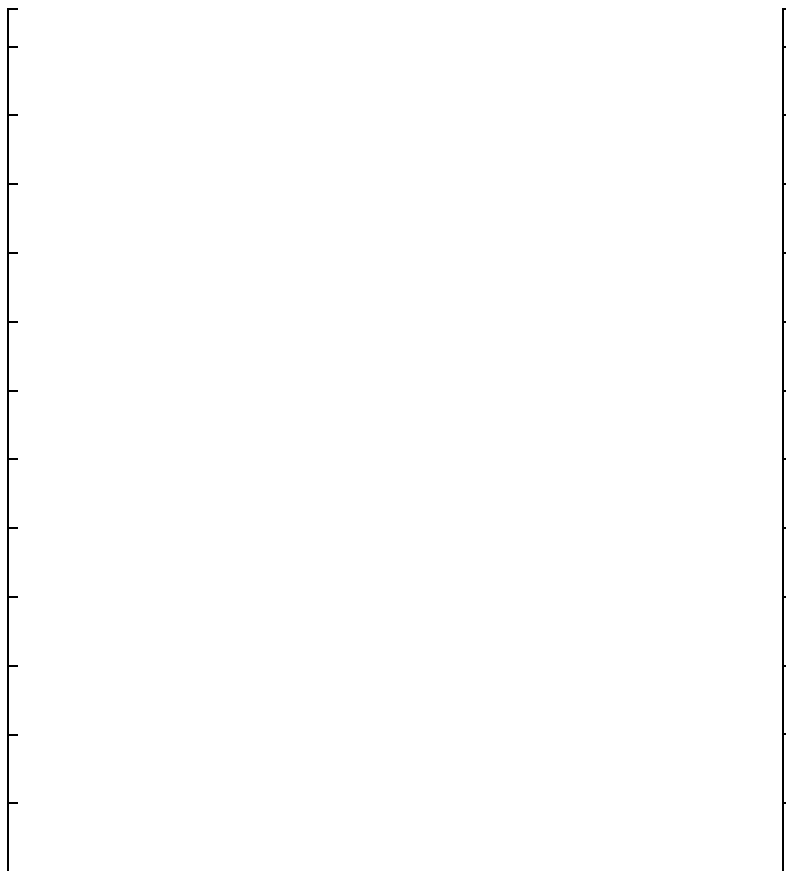
Data Table 2: Mass (Day 1)



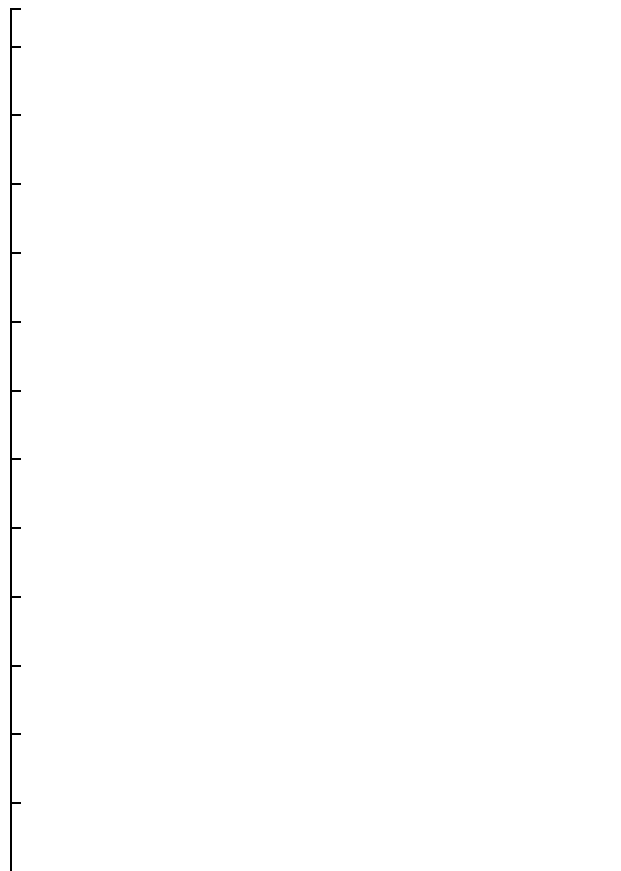
Data Table 3: Volume (Day 1)

| Initial Volume | Final Volume | Change in Volume | Average | Class Average |
|-----------------------|---------------------|-------------------------|----------------|----------------------|
| | | | | |

Data Table 4: Length and Width (Day 2)



Data Table 5: Mass (Day 2)



Data Table 6: Volume (Day 2)

| Initial Volume | Final Volume | Change in Volume | Average | Class Average |
|-----------------------|---------------------|-------------------------|----------------|----------------------|
| | | | | |

Data Table 7: Analysis

| | Average Length | Average Width | Average Mass | Average Volume |
|-------------------------------|-----------------------|----------------------|---------------------|-----------------------|
| Day 1 | | | | |
| Day 2 | | | | |
| % Change | | | | |
| Class Average % Change | | | | |

Conclusions

Questions:

1. What are some sources of error in this type of lab?
2. What other observable changes did you notice in your beans after you soaked them?
3. Why do you think the beans changed overnight like they did?
4. What do you think would happen to the beans if they were soaked for 3 more days?
5. Using the information from data table #7, graph the average change in length, wide, mass, and volume. (Make sure you select the best graph to represent the data and correctly label your graph).