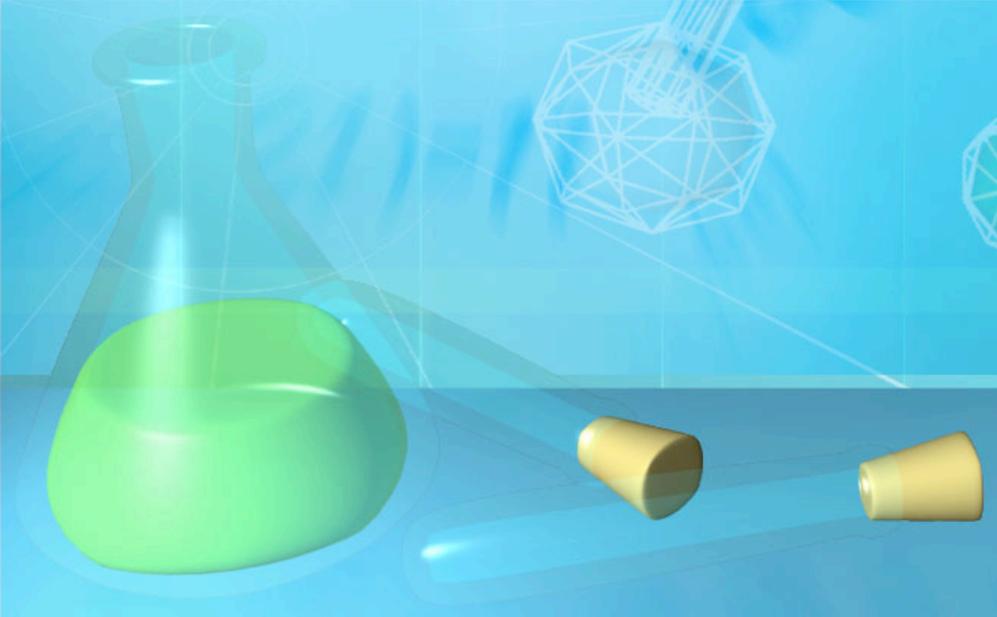


# How to do a Lab Report

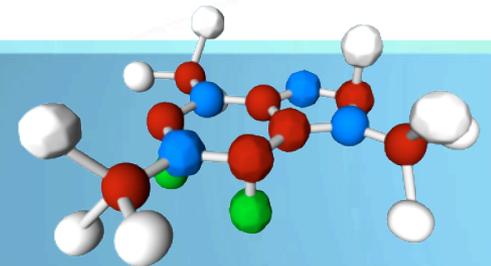
## Oceanography Tutorial



# Lab Report Rubric



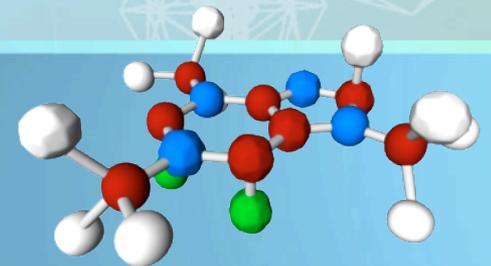
- **Introduction - 25**
- **Methods - 15**
- **Results - 20**
- **Analysis - 25**
- **References - 15**
- **Total Points - 100**



# Introduction



- **State why you are doing the project and what you hope to learn.**
- **Discuss the background of your topic based upon your research.**
- **Provide an educated guess of your results.**
- **Be specific and justify your reasoning.**



# Sample Introduction

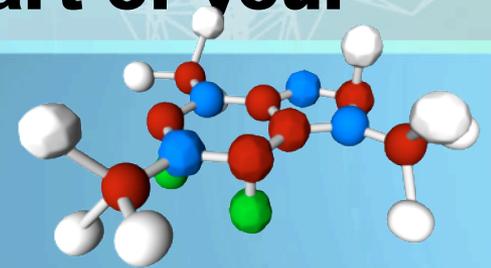
## Introduction:

The purpose of this experiment is to practice the scientific method by designing a boat to hold as many pennies as it can without sinking and then constructing it out of aluminum foil. What I hope to learn from this experiment is first of all, a better understanding of the scientific method by using it. I also hope to learn about boat designs and the affect it has on the maximum load it can support. I believe if I make a boat out of aluminum foil, then the greatest number of pennies it will carry will be forty pennies, which is approximately one hundred grams, as one penny weighs 2.5 grams.

# Methods



- **Also known as the Procedure...**
- **Provide a step by step explanation of your experiment in addition to the rationale for your design.**
- **Include all the materials you used to create and implement your experiment.**
- **If necessary, use the drawing tools to describe how you set up an apparatus or conducted a specific part of your experiment.**



# Sample Methods

## Methods:

### Materials:

- salt
- potting soil
- coffee filter
- paper cup
- metric ruler
- black paper

Mix together a  $\frac{1}{4}$  cup of salt and a  $\frac{1}{4}$  of potting soil to make a mixture of half soil and half salt.

Take a paper cup, and using a pencil, punch out five small holes from the bottom of the cup.

Place the coffee filter inside the paper cup and place a couple of tablespoons of the salt-soil mixture into the coffee filter.

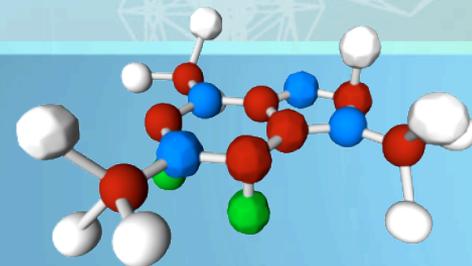
Hold the cup 2 cm above a sheet of black paper. Add one cup of water and allow the water to drip onto the paper.

Once all the water has dripped onto the paper, allow the paper to sit out in the sun to dry.

# Results



- **This portion is the bulk of the lab.**
- **You should provide data tables as necessary and substantial paragraphs which describes your qualitative and quantitative observations.**
- **It is also a good idea to add digital pictures or drawings to indicate what you found**



# Sample Results

## Results:

### Observations:

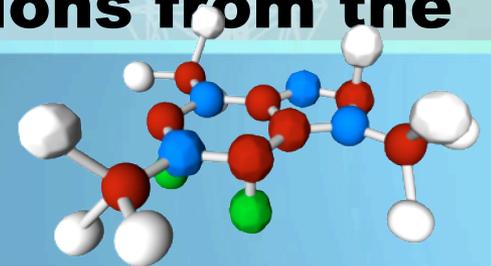
- The potato cubes placed in Cup A sank directly to the bottom, as did the slice.
- The potato cubes placed in Cup B neither sank to the bottom or floated to the top, but just floated around in the middle. The potato slice, did however float higher than the cubes, but it didn't float all the way to the top.
- In Cup C, the potato cubes did float to the top but didn't have any part of it go over the top of the water. The potato slice floated as well, and part of it did pop up from the top of the water.
- In Cup D, the potato cubes and slice did float, of course, and all three potato pieces were partially above water.

Name of Cup	Potato Cube 1	Potato Cube 2	Potato Slice
Cup A	sink	sink	sink
Cup B	Floated in middle of cup	Floated in middle of cup	Floated in middle of cup
Cup C	float	float	float
Cup D	float	float	float

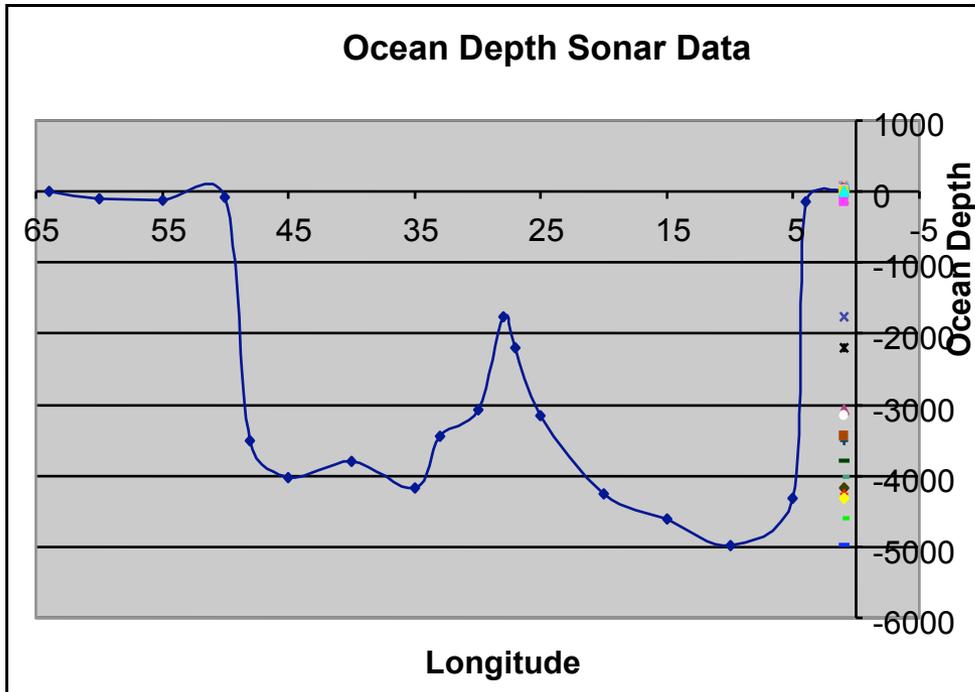
# Analysis



- **Provide sufficient reasoning for the data.**
- **Construct graphs which illustrate the major changes in the experiments.**
- **Include what you would do differently if asked to perform the experiment again.**
- **Explain what you learned and how well the data supported your hypothesis.**
- **Answer all analysis questions from the lab**



# Sample Analysis



Analysis:

1. From what point do oceanographers measure depth?
  - Oceanographers measure depth from sea level.
2. At which station(s) is the ocean most shallow?
  - The ocean is the shallowest at station 4.
3. Label the abyssal plain on your graph. How would you expect the ocean floor to look there?
  - I would expect the ocean floor to look flat, with possibly small hills and seamounts.
4. What large ocean floor feature is evident in the cross-sectional map? Label this feature on your graph. Describe the process that is occurring there?
  - The large ocean floor feature which is evident in the cross-sectional map is a seamount. The process occurring there is that there are two plates

# References



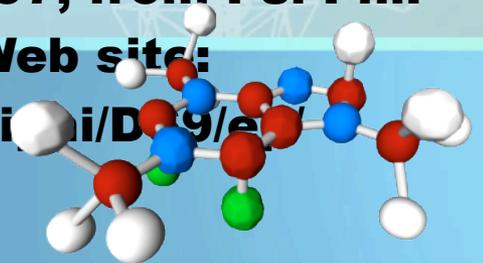
- **List your primary and secondary sources.**
- **Use APA format - A good website to look at for directions is:**

<http://www.liu.edu/CWIS/CWP/library/workshop/citapa.htm>

- **The most common references you will need to make are from webpages.**

**Follow this format:**

- **Lynch, T. (1996). DS9 trials and tribble-ations review. Retrieved October 8, 1997, from Psi Phi: Bradley's Science Fiction Club Web site: [www.bradley.edu/campusorg/psi\\_phi/DS9/e/503r.html](http://www.bradley.edu/campusorg/psi_phi/DS9/e/503r.html)**



# Sample References

## References:

"Sink or Float." Retrieved 1 Feb. 2007 from University of Arizona. <[http://sciconn.mcb.arizona.edu/Sink\\_Float\\_lesson.html](http://sciconn.mcb.arizona.edu/Sink_Float_lesson.html)>.

"What is Oceanography?" Retrieved 2 Mar. 2007 from GAVS Oceanography. Georgia Virtual School. <<https://students.ga.desire2learn.com/d2l/orgTools/ouHome/ouHome.asp?ou=17827>>.

**Any Questions?**

