Salinity Experiment

As you now know, the ocean contains many dissolved salts. How do you think this may affect the objects within the ocean? Have you seen some objects float, while others sink to the bottom? This is directly related to density, which is a measurement of the mass per volume of an object. Density determines whether an object will float or sink. But how are salinity and density related?

In this activity, you will investigate the effects of salinity on density by observing whether an object sinks or floats in water of varying salinity.

First, determine the problem:
How does salinity affect whether a potato slice will float or sink?

Next, develop a hypothesis:
Based on what you know about density, do you know enough to formulate a hypothesis? A hypothesis is an educated guess, so you must gather information on salinity, why things float or sink, and the specific density of a potato. Include this information in the introduction portion of your lab report.

Now, design an experiment:
Develop a controlled experiment that will identify how increasing salinity influences the ability of a potato to float in water. You might want to use the following materials:

small uncooked potato
teaspoon
salt
large glass bowl
water
measuring cup
measuring spoons
metric ruler

List the steps that you need to take to test your hypothesis.
Be specific and describe exactly what you will do for each of your steps. How will you determine the density of the potato and the different water samples? Be sure to be specific enough so that someone else can duplicate your exact experiment.

Record your results in an appropriate data table and construct a corresponding graph.
Include digital pictures or drawings with your qualitative and quantitative observations. When constructing your graph based on your data, remember, a line graph is used to demonstrate change over time, and a bar graph is used to illustrate comparisons.

Determine the analysis and conclusions
Discuss the execution of your lab, your findings, and their validity. Include a statement of response to your hypothesis.