Writing a Good Hypothesis and Conclusion, and Identifying Variables

The problem that is stated at the beginning of the lab requires you to make a hypothesis (educated guess) about what you think the answer to the problem is. As long as your hypothesis statement is your guess for the answer to the problem, then you won't lose any points for the hypothesis.

Identify variables before doing an experimental procedure. Variables are factors, conditions, and/or relationships that can change or be changed in an event or system. In a scientific investigation there are three kinds of variables.

The independent variable is a factor or condition that is intentionally changed by an investigator in an experiment. It might be something each group in the class changes in the same way during the course of doing an experiment, or it could be something that is different for each group. If this variable is to be graphed, it is the information that goes along the x-axis.

A dependent variable is a factor or condition that might change as a result of the change being made with the independent variable. The independent variable changing is what causes the change in the dependent variable. If this variable is to be graphed, it is the information that goes along the y-axis.

A variable that is not changed is called a controlled variable. It is those factors, conditions, and/or relationships that you're trying to keep the same during the course of an experiment.

What most students tend to do, is to not fully or correctly write the conclusion for the lab. Each lab you do is specifically set up to produce results that will allow the problem to be answered. In your conclusion, you need to first state if your original hypothesis was correct or not. If incorrect, you then have to supply the correct answer to the problem. When you do this, you need to use the best supporting evidence from the lab to back up your answer. This means you must include some actual lab data that backs up the answer.

Most students lose points in their conclusion for not including actual lab data to support their conclusion. Others may lose points if they don't indicate if their original hypothesis was correct

In order for you to come to the correct conclusion, regardless of what your original hypothesis was, you would have needed to correctly follow the procedures, record your observations, and then analyze it correctly. Sometimes students have great observations but lack the ability to correctly analyze the data or vice versa.

Developmentally, it is a skill that 8th grade students like you are still working on , so you'll get better at it with practice and as time goes on.