Question: *What is the question that you are looking into? _____/3pts*

Knowledge Probe: *What kind of background information have you found on this subject _____/5pts*

Prediction: *What did you predict or think would happen? _____/3pts*

Investigation Plan: *What are all of the steps necessary for someone to complete this lab to the level of detail that you did yours? _____/7pts*

Observations: *have the following 2 sections*

<u>Qualitative Observations:</u> In words, describe what happened. You haven't had a chance to actually graph out your data yet, but just from observations describe what you think happened and how that relates to what you thought would happen. _____/10pts

<u>Quantitative Observation:</u> Include your data table that has all of your data. Make sure things are labeled correctly. _____/10pts

Data Analysis: *Place your data into a graph so it can visually be analyzed. You can do this on graph paper, or with the computer.*

Explanation: What did you learn? _____/5pts

Claim: What claim can you make based on your evidence? Does your claim answer your investigation question? _____/5pts

Evidence: You are making the above claim based on what evidence? _____/2pts

Reasoning: Make an argument to prove why your evidence backs up your claim. Does the reasoning link the claim and the evidence? Does the reasoning make a strong argument? Does the reasoning consider alternative explanations? _____/1pt

Evaluation: *How well did you do? Critique your own investigation in the next 7 questions.*

a. What were the sources of error within this experiment? _____/5pts

b. How would you do things differently next time? _____/5pts

c. How confident are you in your results? and explain why. Place your response and reason why under one of the following 4 responses. _____/4pts

Strongly confident

Conducted a minimum of 10 trials
minimized potential sources of error
had my results confirmed
used scientific concepts, principles, or theories

Somewhat confident

conducted a minimum of 5 trials
attempted to minimize potential sources of error
had my results confirmed
used scientific concepts, principles, or theories

A little confident

Conducted a minimum of 3 trials
considered potential sources of error
did not have my results confirmed
did not use scientific concepts, principles, or theories

Not confident at all

Conducted less than 3 trials
did not consider potential sources of error
did not have my results confirmed
did not use scientific concepts, principles, or theories

d. What could be alternate explanations for your results? _____/4pts

e. What surprised you about the investigation. _____/4pts

f. What would your prediction be in you conducted this investigation again? _____/2pts

g. What questions would you pursue next? How does this lead to further questions? _____/5pts

Application:

How might this data be used in real life application? _____/5pts

Journal:

Overall, describe the process of your investigation. Compile these 6 bullets and more into a complete written response _____/15pts

-What did you do for your experiment?
-What did you find out about your experiment?
-Was it easier, or more difficult than you thought to set up your own experiment? What were some of the struggles.
-How would you change things next time, or what are the sources of error?
-What further questions does this lead to?
-How did you like doing an investigation such as this, that was directed by you, but took much more time and thought