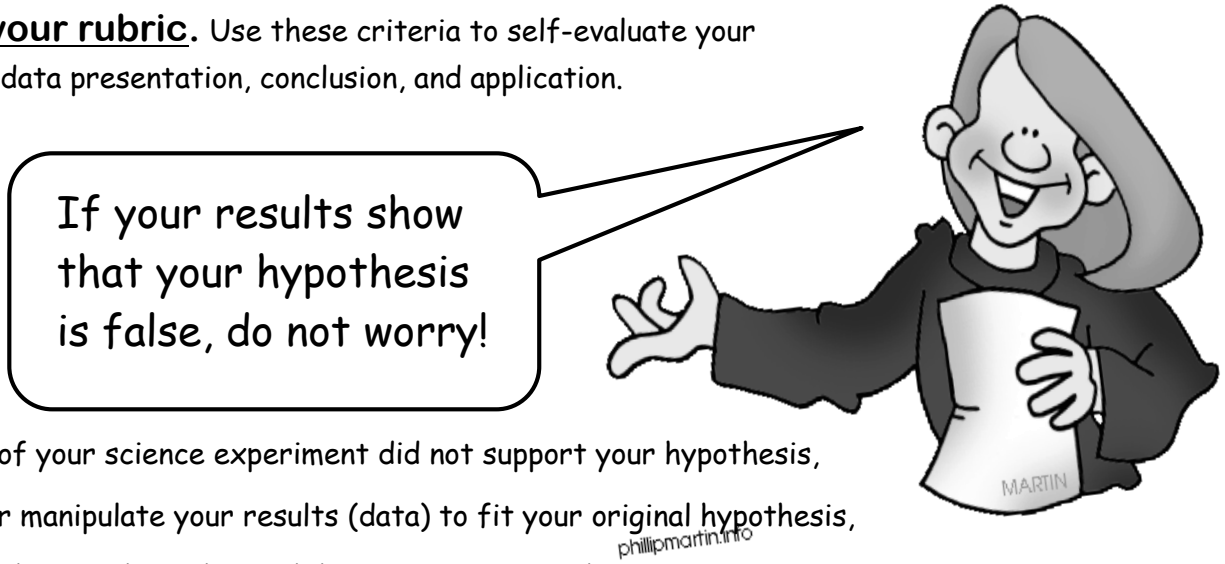
Name: _____ DUE: _____

Teacher: _____ Sent home week of Feb 15-19, 2016

How to Write a Good Conclusion?

Before you can write a conclusion you should …

1. **Organize your data in a table.** Do any calculations that are necessary for you to understand the findings and analyze the data from your experiment. Most of the time calculating the average (mean) for the trials is enough to summarize the data. Your project's experimental procedure and/or data analysis components may provide you with information about which calculations to perform to analyze your data.
2. **Display your data in a graph.** There are a number of different graphs to choose from. Which one to use depends on the type of data you collected. Your project's experimental procedure and/or data analysis components may provide you with information about which type of graph is appropriate for displaying your data.
3. **Review your rubric.** Use these criteria to self-evaluate your trial table, data presentation, conclusion, and application.



If the results of your science experiment did not support your hypothesis, don't change or manipulate your results (data) to fit your original hypothesis, simply explain why you think things did not go as expected.

Scientific experimentation is an ongoing process, and by discovering that your hypothesis is not true, you have already made huge advances in your learning that will lead you to ask more questions that lead to new experiments. Science fair judges do not care about whether you prove or disprove your hypothesis; they care how much you learned and how you share that knowledge with others.

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What Makes for a Good Conclusion?	
Did you restate your hypothesis?	Yes / No
Did you state if the data supports or rejects your hypothesis?	Yes / No
Did you use data as evidence to support or reject your hypothesis?	Yes / No
If applicable, did you identify sources of error and explain their effect on the results?	Yes / No
Did you use data and prior knowledge to defend your conclusion?	Yes / No
Did you make a proposal (suggestions) for further experimentation?	Yes / No

Use the following template to help you write your **conclusion**

I hypothesized that _____

because according to _____.

The data from my experiment [*supports / rejects*] my hypothesis.

The data that [*supports / rejects*] my hypothesis shows _____.

_____[*if applicable - identify sources of error and explain their effect on the results*] _____

_____[*defend your conclusion using data and prior knowledge*] _____

A possibility for further experimentation would be _____

_____

To help you write an **application** and earn up to 5 additional points, answer both of these questions:

- How can you apply (use) what you have learned to a real life situation?
- Who could benefit from the information in your project, and why?

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EXAMPLE of conclusion for "Marbles Roller Coaster: How Much Height to Loop the Loop?"

Write the conclusion on a separate sheet of paper or type and print.

CONCLUSION

I hypothesized that *if the height of the track is 80 centimeters then the marble will loop the loop because according to my research the greater the height (potential energy) the faster the marble will move (kinetic energy).* The data from my experiment *supports* my hypothesis.

The data that *supports* my hypothesis shows *that when the marble is dropped from 80 centimeters high its potential energy transforms into enough kinetic energy to allow the marble to loop the loop 8 out of 10 trials. The results were better when the marble was dropped from 100 centimeters because the marble loop to loop for all 10 trials. I think the way I applied the tape on the track might have slowed down the marble during some of the trials, because sometimes the tape would come off a bit. Throughout the trials I had to keep pressing the tape down to keep the track smooth.*

In conclusion, *according to the data the best height for a marble roller coaster with a 30 cm diameter loop is 100 cm.* A possibility for further experimentation would be *to change the diameter of the loop (30, 35, 40, 45, 50 cm) and test how large a loop can the marble complete when dropped from 100 cm high.*