Purpose: The goal of this handout is to help you organize your data and analyze your results.

**You must submit this page as part of the rough draft information you turn in with the final copy of your paper airplane lab write-up.**

1. Find the average distance traveled by each of your airplanes. (Add a row to the end of your data table and label it averages.)

Complete this general summary:

<table>
<thead>
<tr>
<th>Plane Modification</th>
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<tr>
<td>Average Distance (Feet)</td>
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a. Did you have any unusual data points included? (For example, is there a REALLY large or small number averaged in one of the trials? If so, any clue about why it might be there? If so, what modification average is being influenced by that unusual data?)

b. Are the average distances pretty similar or pretty different?

c. If they are pretty different, what modification led to the **shortest distance**?

d. If they are pretty different, what modification led to the **longest distance**?

e. If they are pretty similar, what does this tell you about how this modification affects distance travelled?
2. Meet with your small group and discuss general findings.

Complete this general summary:

<table>
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<th>Team Member =</th>
<th>Plane Modification =</th>
<th>Average Distance (Feet)</th>
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a. Overall, what modification (or type of modification) seemed to allow the plane to fly the farthest?

b. Overall, what modification (or type of modification) seemed to cause the plane to fly the shortest distance?
3. Analyze your procedure.
   a. Did you have to make any changes to your procedure as you ran this experiment? If so, why?

   b. Did you have any problems while running the experiment? If so, what?

   c. What changes would you make to your procedure if you were to run this experiment again? Why would you make those changes?

   d. Do you think there were any other variables influencing your data (in addition to the single variable you were testing)? What are those variables? How could you try to reduce the affect of those variables in the future?

4. Now that you know this, what questions does this information lead to? Write at least three follow-up questions.
   a.

   b.

   c.
5. Create a graph showing your AVERAGE distance traveled by each plane.

6. Create a graph showing the AVERAGE distance traveled by every group member (include your own data so it can be easily compared to your team’s data).

7. Graphs should be put in the data and observations section of your final copy lab write-up. (You may hand-draw the graphs or use the computer.) Make sure you create a meaningful title and label the axes of each graph.

8. Your final **conclusion** will likely be 4-5 paragraphs. Here’s how I would divide the information in your conclusion:
   a. Individual data analysis:
      i. Address your hypothesis and indicate whether or not your data supports your hypothesis.
      ii. Provide the average distances traveled for each modification.
      iii. Compare those distances. For example, where they pretty similar or different? How much is the difference?
      iv. Conclude this section with an overall statement of how your plane modification affects distance traveled.
   b. Small group data analysis:
      i. Provide average distances traveled for each type of modification.
      ii. Compare those distances.
      iii. Overall, describe the impact of each modification/type of modification.
   c. Procedural analysis:
      i. Describe any ways that the procedure may have improperly affected the results.
      ii. Describe any changes/improvements you would make if you were to try to answer the same question again. Include why these changes would improve the integrity of the results.
      iii. Describe anything else the reader should know about your or your team’s results and procedure.
   d. Future investigations:
      i. What future questions would you want to answer about paper airplanes based on the results of this experiment?
      ii. Why?