Name_____

Class_____

Best Flying Paper Airplane

We will be making paper airplanes to practice the following scientific skills:

-Problem solving
-Making inferences
-Drawing conclusions
-Predicting/Hypothesizing
-Building models

The research question we are trying to answer in this lab is:

How can we make a paper airplane travel farther?

Pre-lab Questions

1. Make a list of modifications we could make to a "regular" paper airplane to make it go farther. (example: weight—could make it heavier or lighter) List at least 5.

2. Pick only one of the modifications (variables) to test. Which one are you choosing? Describe how you will make modifications for this variable. (For example if you chose to change weight, how will you add or subtract weight?)

3. A **hypothesis** is a statement that describes a connection a connection between the variable you change and the response of the plane. For example, "If I increase the weight of the plane, it will fly farther." What is your hypothesis for your experiment?

4. If your hypothesis is correct, what do you predict will happen?

Procedure:

1. Pick a paper airplane style and construct it.
2. Run 5 trials of this airplane. For each trial, record how far the plane flies. Take any other notes about the trial in the data table. For example, if the plane hits the wall or ceiling record this. This trial is your "control group."
3. Change something about the design of your airplane to make it fly farther. This change is called the **manipulated variable**. Run 5 trials with this variable. This group is called your "experimental group #2."
4. Change a different variable about the design of your airplane. Run 5 more trials with this airplane. This is "experimental group #3"

Paper Airplane Data Table

Trials	Control Trials Airplane without modifications	Experimental Group #1 Airplane with	Experimental Group #2 Airplane with
1			
2			
3			
4			
5			
Total			
Mean			
Median			
Mode			
Range			

Post Lab Questions

1.Which group did you predict would go the farthest? Were you correct? Why do you think that is?

2. Which group did you predict would go the shortest distance? Were you correct? Why do you think that it?

3. Was you hypothesis supported?

4. How reliable (consistent) was your data? Why is that?

5. Were there things you could have kept constant that you didn't? If you were to perform the experiment again, how would you change your data to improve the reliability of your data?