Names \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Statistical Test(s) used: DOE

**Math Teacher Rubric for Senior Research**

**Data and Observations & Data Analysis and Interpretation Sections**

We want your best work that shows time, effort, care, and energy has been spent perfecting this part of your paper.

\_\_\_ (2 pts) **Experimental Recap**

1 to 2 paragraphs ON A SEPARATE PAGE, summarizing your experiment, the variables, hypothesis, etc. (Remind the math teachers about what you are doing. This is NOT part of your final paper in any way.)

\_\_\_ (3 pts) **Data and Observations**

FOLLOW MANUAL

Should be easy to understand and follow.

**Data Analysis & Interpretation\***

FOLLOW THE MANUAL FOR YOUR PARTICULAR CHOICE OF STATISTICAL ANALYSIS.

\_\_\_ (10 pts) **Data Analysis - DOE**

FOLLOW THE MANUAL (Appendix A, Part A)

In particular,

* Good graphs with labels and scales marked
* Consistent uniform scales throughout (unless compelling reason)
* Comment on each factor/interaction in the context of experiment
* Correct interpretation of results in the context of your experiment

\_\_\_ (10 pts) **Interpretation**

Summary of results of analysis based on DOE. (Now that you have determined all these effects and interactions….what’s the bottom line for the reader?)

In the Data Analysis & Interpretation section you are to clearly state “what” the numbers mean. ALL OF THEM! The conclusion will detail “why” scientifically your results could/would/should have happened.

\* Incorrect math or incorrect interpretation of results will result in a grade NO HIGHER than a C

Names \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Statistical Test(s) used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Math Teacher Rubric for Senior Research**

**Data and Observations & Data Analysis and Interpretation Sections**

We want your best work that shows time, effort, care, and energy has been spent perfecting this part of your paper.

\_\_\_ (2 pts) **Experimental Recap**

1 to 2 paragraphs ON A SEPARATE PAGE, summarizing your experiment, the variables, hypothesis, etc. (Remind the math teachers about what you are doing. This is NOT part of your final paper in any way.)

\_\_\_ (3 pts) **Data and Observations**

FOLLOW MANUAL

Should be easy to understand and follow.

**Data Analysis & Interpretation\***

FOLLOW THE MANUAL FOR YOUR PARTICULAR CHOICE OF STATISTICAL ANALYSIS.

\_\_\_ (10 pts) **Descriptive and Another Statistical Treatment**

FOLLOW THE MANUAL (Appendix A, Part B)

**Descriptive**

In particular….

* Good plots with labels and scales marked
* Consistent uniform scales throughout (unless compelling reason)
* Special attention paid to discussion of trends and patterns

**Another Statistical Treatment** (t-test, ANOVA, etc.)

In particular….

* Show that the test being used is appropriate
* Discuss conditions/assumptions necessary
* Identify null and alternative hypotheses in the context of your experiment (i.e. words in sentences) and mathematical notation (identify your variables/ subscripts)
* Screenshot of results and p-graph

\_\_\_ (10 pts) **Interpretation**

Summary of results of analysis. (Now that you have run all these tests and p-values and hypotheses…..what’s the bottom line for the reader?)

In the Data Analysis & Interpretation section you are to clearly state “what” the numbers mean. ALL OF THEM! The conclusion will detail “Why” scientifically your results could/would/should have happened.

\*\* Incorrect math or incorrect interpretation of results will result in a grade NO HIGHER than a C.