**Unit 1 GRASPS:** Comparing Quantitative Data \*\*\*UPDATED\*\*\*

**GOAL**:

You will use appropriate graphical and numerical summaries to compare two quantitative data sets.

**ROLE**:

You are a ChiArts staff member who analyzes and communicates quantitative information about the school to interested parties.

**AUDIENCE**:

Your target audience is anyone who has a stake in ChiArts data. You get to decide who your specific audience is within that group (e.g. teachers, administrators, parents, donors, Board of Directors, students, etc.).

**SITUATION**:

One of your duties as a ChiArts employee is to analyze, interpret and communicate quantitative information about the school. A current assignment is to analyze exam score data for ChiArts students. You will work with a co-worker to analyze and communicate one of the following pieces of this large project:

* Student PLAN scores by graduating class (2013, 2014, 2015)
* Class of 2014 PSAT compared to class of 2013 PSAT
* Class of 2014 ACT – PLAN difference compared to class of 2013 ACT – PLAN difference
* Class of 2014 weighted GPA compared to unweighted GPA
* Student unweighted GPA by graduating class (2013, 2014, 2015, 2016)
* Class of 2014 ACT scores compared to PLAN scores
* Class of 2013 ACT scores compared to class of 2014 ACT scores
* Student AP Exam scores by AP course

**PRODUCT PERFORMANCE**:

You will submit a report or presentation to your teacher, and distribute your report or give your presentation to the audience of your choice at ChiArts. Your report/presentation must include graphical displays, numerical statistics, and written analysis. First, you will submit a draft of your report to your teacher on which you will receive feedback. The draft must follow the 4-Step Problem Solving Process. Then, you will submit your final copy that is ready to be sent or presented to the audience of your choosing at ChiArts (for real – you will really do this!). Your final report/presentation does not need to explicitly state the steps of the 4-Step Process.

**STANDARDS and CRITERIA for SUCCESS**:

Your submission should include:

* Draft Report
  + An outline of your report using the 4-Step Process framework.
  + All of the requirements below should be included in your 4-Step Process draft.
* Final Report or Presentation
  + Written text to introduce the data/pose the problem
  + Appropriate graphical displays of the data
  + Appropriate numerical statistics that describe the data
  + Written text to analyze the data/make a conclusion
    - interpret your graphical displays
    - interpret your numerical statistics
    - discuss which displays and statistics are most helpful in comparing data sets

**Comparing Quantitative Data GRASPS Rubric**

Draft Submission

4 The student meets the deadline for draft submission. The draft explicitly follows the 4-Step Problem Solving Process and includes all of the required components (written text to introduce the problem, graphical displays, numeric summaries, and written text to analyze the data/make a conclusion).

3 The student is one class period late with the draft, but it meets all other requirements above.

2 The student does not explicitly follow the 4-Step Process, but includes the required components or the student follows the 4-Step Process, but is missing one or two of the required components.

1 The student is more than one class period late with the draft and/or does not follow the 4-Step Process and/or is missing more than two required components.

Accuracy of Graphical/Numerical Summary Techniques

4 The student has used all required statistical techniques correctly and appropriately. All minor points are included.

3 The student has generally used each of the required statistical techniques correctly and appropriately. There may be minor omissions or errors.

2 The student has used some of the required statistical techniques correctly and

appropriately. There are, however, significant errors in one or more techniques or a plethora of minor mistakes.

1 The student has made some attempt to use required techniques correctly and

appropriately, but the effort is flawed in some major way.

Quality of Statistical Comparison

4 The student thoroughly and accurately compares the two sets of data based on the statistical techniques employed in the context of the data. Correct terminology is used throughout.

3 The student accurately compares the datasets based on statistical techniques employed in the context of the data and generally uses correct terminology. There are minor omissions/errors.

2 The student produces a generally accurate comparison of the datasets based on the statistical techniques employed with some use of appropriate terminology or with inadequate connection to context. A key omission or inaccurate conclusion may also have been made.

1 The student attempted to use statistical techniques employed to compare the datasets, but

missed some key ideas. Terminology and reference to context are inadequate or missing.

Organization, Transition, Appearance

4 The GRASPS shows evidence of careful organization, flows naturally from statistical technique to statistical analysis, and is neat in appearance.

3 There are minor flaws in **one** of the areas: organization, transition, appearance.

2 There are major flaws in **one** of the areas: organization, transition, appearance, OR minor flaws in **two** areas.

1 Completely inadequate in **two or more** of: organization, transition, appearance.

English Mechanics

4 The student’s writing is grammatically correct, is punctuated properly, and flows logically from one point to the next. No spelling mistakes!

3 The student’s writing has a minor flaw in **one** of the areas: grammatically correct, punctuated properly, logical flow, spelling.

2 The student has made significant errors in **one** of the areas: grammatically correct, punctuated properly, logical flow, spelling, OR minor flaws in **two** areas..

1 The student’s writing has major flaws in **two or more** of the areas: grammatically correct, punctuated properly, logical flow, spelling.

Total Points (out of 20): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total Score (out of 100%): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Late Penalty (max 50%): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*Revised Score (out of 100%): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**Teacher Comments:**