Changing Effects – Scoring Sheet

Student Name: _____

Place a score (1-4) in each row corresponding to the student's college readiness level.

Exceeding College Ready (4): Substantially exceeds the performance expectations
College Ready (3): Shows proficiency in all of the performance expectations
Approaching College Ready (2): Meets only some of the performance expectations
Initiating College Ready (1): Does not yet meet the performance expectations

KEY COGNITIVE SKILLS	Student's Self-Assessment	Instructor's Score
Intellectual Curiosity (engages in scholarly inquiry and dialogue)		
Reasoning (well-reasoned arguments to explain phenomena, validate conjectures, or support positions)		
Problem Solving (collects evidence and data systematically and directly relates them to solving a problem)		
Academic Behaviors (self-monitors learning needs and seeks assistance when needed; strives for accuracy and precision; perseveres to complete and master tasks)		
Work Habits (works independently; works collaboratively)		
Academic Integrity (attributes ideas and information to source materials and people; evaluates sources for quality of content, validity, credibility, and relevance)		
FOUNDATIONAL SKILLS	**Student's Self-Assessment**	**Instructor's Score**
Writing Across the Curriculum (writes clearly and coherently using standard writing conventions)		
Research Across the Curriculum (synthesizes and organizes information effectively)		
Use of Data (identifies patterns or departures from patterns among data; uses statistical and probabilistic skills necessary for planning an investigation, and collecting, analyzing, and interpreting data)		
Technology (uses technology to gather, organize, manage, and analyze information and to communicate and display findings in a clear and coherent manner)		
MATHEMATICS STANDARDS	**Student's Self-Assessment**	**Instructor's Score**
Measurement Reasoning (converts within a single measurement system and from one system of measurement to another)		
Statistical Reasoning (makes predictions and draws inferences using summary statistics; analyzes data sets using graphs and summary statistics; analyzes relationships between paired data using spreadsheets, graphing calculators, or statistical software)		

See reverse for comments.

Score	College Readiness Level
42-48	Exceeding College Ready
35-41	College Ready
18-34	Approaching College Ready
0-17	Initiating College Ready

Total Score: _____ _____

Grade: _____

See Scoring Guide for grade conversion chart.

Changing Effects – Scoring Guide

Note: The letters and numbers of the skills below refer to their designation in the College and Career Readiness Standards.

KEY COGNITIVE SKILLS

A. Intellectual Curiosity

1. Engage in scholarly inquiry and dialogue.

College Ready Description: Student demonstrates a clear understanding of the problem by finding an appropriate dataset, devising a new system of measurement suitable for this dataset, and computing and comparing appropriate statistics for this dataset.

Evidence for Scoring: Student chooses a unit so that when the data is expressed in the new units, the magnitudes of the numbers are neither very large nor very small.

B. Reasoning

2. Construct well-reasoned arguments to explain phenomena, validate conjectures, or support positions.

College Ready Description: Student writes a thorough report explaining the results of his or her investigation

Evidence for Scoring: In addition to the evidence of statistical calculations, the student includes graphs illustrating the data in the new system and the old system and argues that they are visually identical.

C. Problem Solving

3. Collect evidence and data systematically and directly relate to solving a problem.

College Ready Description: Student selects a real-world dataset and accurately produces charts, graphs, and diagrams, including scale, labeling, units, and organization.

Evidence for Scoring: Student graphs the selected data before and after the unit conversion and scales both appropriately.

D. Academic Behaviors

1. Self-monitor learning needs and seek assistance when needed.

College Ready Description: Student keeps a mindful eye on his or her integration of knowledge as it progresses and is able to ask fellow students and the instructor for help.

Evidence for Scoring: Student is comfortable admitting he or she does not know an answer and is willing to re-examine the material to relearn.

3. Strive for accuracy and precision.

College Ready Description: Student accurately produces charts, graphs, and diagrams, including scale, labeling, units, and organization. Student correctly computes statistics associated with the dataset in both unit systems. Student correctly computes the mean of the data for both measurement systems.

Evidence for Scoring: Student's representation showing the data conversion is both correct and easy to interpret.

4. Persevere to complete and master tasks.

College Ready Description: Student submits a final work product that reflects a thorough understanding of the topic and meets all requirements of the assignment.

Evidence for Scoring: Student gives examples both of statistics that change upon unit conversion and statistics that do not. Student also draws and supports a conclusion about science conducted globally.

E. Work Habits

1. Work independently.

College Ready Description: Student can work though the problems by themselves.

Evidence for Scoring: Student does not wait until the group work to start thinking about the activity.

2. Work collaboratively.

College Ready Description: Student shows ability to work in a group. This involves comparing ideas, understanding those of others, and offering constructive critiques.

Evidence for Scoring:

F. Academic Integrity

1. Attribute ideas and information to source materials and people.

College Ready Description: Student correctly uses standard citation formats to indicate the source of his or her data.

Evidence for Scoring: Student gives the website URL from which data was collected.

2. Evaluate sources for quality of content, validity, credibility, and relevance.

College Ready Description: Student uses appropriate sources for collecting data.

Evidence for Scoring: Student lists sources for data in individual report, and sources listed are credible.

FOUNDATIONAL SKILLS

B. Writing Across the Curriculum

1. Write clearly and coherently using standard writing conventions.

College Ready Description: Student correctly and effectively uses symbols, diagrams, graphs, and text to communicate his or her arguments and conclusions. Student uses appropriate terminology to communicate concisely.

Evidence for Scoring: Student summarizes his or her supporting evidence in a coherent report so that it can be easily understood. Student refers to the correlation appropriately.

C. Research Across the Curriculum

5. Synthesize and organize information effectively.

College Ready Description: Student determines what evidence best supports his or her conclusions.

Evidence for Scoring: Student shows the computations that demonstrate that the mean is in fact changed by the conversion factor.

D. Use of Data

1. Identify patterns or departures from patterns among data.

College Ready Description: Student successfully identifies patterns in his or her dataset from representations of the data.

Evidence for Scoring: Student observes that, except for scale, the graphs before and after unit conversion look exactly alike.

2. Use statistical and probabilistic skills necessary for planning an investigation, and collecting, analyzing, and interpreting data.

College Ready Description: Student creates accurate representations of the data.

Evidence for Scoring: Student creates a table containing the data both before and after unit conversion.

E. Technology

1. Use technology to gather information.

College Ready Description: Student successfully uses the Internet to locate a suitable dataset.

Evidence for Scoring: Student finds a dataset from a reliable source.

2. Use technology to organize, manage, and analyze information.

College Ready Description: Student uses a spreadsheet to manipulate data and calculate relevant statistics.

Evidence for Scoring: Student uses Excel to store the data, perform the unit conversion, and calculate the mean for both datasets.

3. Use technology to communicate and display findings in a clear and coherent manner.

College Ready Description: Student utilizes technology to effectively present information graphically.

Evidence for Scoring: Student creates a spreadsheet and produces graphs of the data from both datasets.

MATHEMATICS STANDARDS

IV. Measurement Reasoning

B.1, 2. Systems of measurement.

College Ready Description: Student converts from one system of measurement to another and within a single measurement system.

Evidence for Scoring: Student converts a dataset from its native system of measurement to their invented one.

VI. Statistical Reasoning

C.1, 2, 3. Read, analyze, interpret, and draw conclusions from data.

College Ready Description: Student makes predictions and draws inferences using summary statistics. Student analyzes data sets using graphs and summary statistics. Student analyzes relationships between paired data using spreadsheets, graphing calculators, or statistical software.

Evidence for Scoring: Student conducts various statistical computations on their dataset and makes a conjecture about how their conversion affects their statistical analysis.

Changing Effects – Scoring Instructions

Place a score (1-4) in each row of the scoring sheet corresponding to the student's college readiness level.

Exceeding College Ready (4): Substantially exceeds the performance expectations
College Ready (3): Shows proficiency in all of the performance expectations
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Suggested Grade Conversion:

This chart reflects equal weight given to each skill. As key cognitive skills, foundational skills, and discipline content knowledge are all important elements of college readiness, we recommend this grading approach. However, you may certainly choose to implement different weights to particular scales and assign a grade at your discretion.

Score	Grade		Score	Grade		Score	Grade		Score	Grade
48	100		39	89		30	80		21	73
47	99.5		38	87		29	79.5		20	72
46	99		37	86		28	79		19	71
45	98		36	85		27	78.5		18	70
44	97		35	84.5		26	78		17	68
43	96		34	84		25	77		16	66
42	95		33	83		24	76		15	64
41	93		32	82		23	75		14	62
40	91		31	81		22	74		13	60