

BYU-HAWAII DATA-DRIVEN VALUE RUBRIC

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Definition

This is a "habit of mind," competency, and comfort in working with numerical data and concepts. Individuals with strong skills possess the ability to reason and solve problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative and/or data driven evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).

This rubric is based on the Quantitative Literacy Value Rubric created by and with acknowledgement to



the:

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

| | Capstone 4 | Milestones | | |
|---|---|---|--|--|
| | | 3 | 2 | 1 |
| Interpretation <i>Ability to explain information presented in mathematical/ data-driven forms (e.g., equations, graphs, diagrams, tables, words)</i> | Provides accurate explanations of information presented in mathematical/ data-driven forms. Makes appropriate inferences based on that information. <i>For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events.</i> | Provides accurate explanations of information presented in mathematical/ data-driven forms. <i>For instance, accurately explains the trend data shown in a graph.</i> | Provides somewhat accurate explanations of information presented in mathematical/ data-driven forms, but occasionally makes minor errors related to computations or units. <i>For instance, accurately explains trend data shown in a graph, but may miscalculate the slope of the trend line.</i> | Attempts to explain information presented in mathematical/ data-driven forms, but draws incorrect conclusions about what the information means. <i>For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.</i> |
| Representation <i>Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)</i> | Skillfully converts relevant information into an insightful mathematical/ data-driven portrayal in a way that contributes to a further or deeper understanding. | Competently converts relevant information into an appropriate and desired mathematical/ data-driven portrayal. | Completes conversion of information but resulting mathematical/ data-driven portrayal is only partially appropriate or accurate. | Completes conversion of information but resulting mathematical/ data-driven portrayal is inappropriate or inaccurate. |
| Calculation/Description | Calculations/Descriptions attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations/Descriptions are also presented elegantly (clearly, concisely, etc.) | Calculations/Descriptions attempted are essentially all successful and sufficiently comprehensive to solve the problem. | Calculations/Descriptions attempted are either unsuccessful or represent only a portion of the calculations/Descriptions required to comprehensively solve the problem. | Calculations/Descriptions are attempted but are both unsuccessful and are not comprehensive. |
| Application / Analysis <i>Ability to make judgments and draw appropriate conclusions based on the quantitative/ data-driven analysis of data, while recognizing the limits of this analysis</i> | Uses the quantitative/ data-driven analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work. | Uses the quantitative/ data-driven analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work. | Uses the quantitative/ data-driven analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work. | Uses the quantitative/ data-driven analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work. |

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|--|--|---|--|--|
| | | 3 | 2 | 1 |
| Assumptions <i>Ability to make and evaluate important assumptions in estimation, modeling, and data analysis</i> | Explicitly describes assumptions and provides compelling rationale for why each assumption is appropriate. Shows awareness that confidence in final conclusions is limited by the accuracy of the assumptions. | Explicitly describes assumptions and provides compelling rationale for why assumptions are appropriate. | Explicitly describes assumptions. | Attempts to describe assumptions. |
| Communication <i>Expressing quantitative evidence in support of the argument or purpose of the work (in terms of what evidence is used and how it is formatted, presented, and contextualized)</i> | Uses quantitative/data-driven information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality. | Uses quantitative/data-driven information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven. | Uses quantitative/data-driven information, but does not effectively connect it to the argument or purpose of the work. | Presents an argument for which quantitative/data-driven evidence is pertinent, but does not provide adequate explicit numerical/data-driven support. |