

QUANTITATIVE LITERACY MODIFIED FROM VALUE RUBRIC

for more information, please contact value@aacu.org



Definition

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

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

	Proficient 4	Competent 3	Emergent 2	Rudimentary 1
Interpretation <i>Ability to explain information presented in quantitative forms (e.g., equations, graphs, diagrams, tables, words) including selecting appropriate data for discussion.</i>	Provides accurate explanations of quantitative information presented. Makes appropriate inferences based on that information. <i>For example, accurately explains 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 quantitative forms. <i>For instance, accurately explains the meaning of a graph or chart.</i>	Provides somewhat accurate explanations of information presented, but occasionally makes minor errors related to computations, selections or units. <i>For instance, correctly identifies the type of graph, and the variables and data shown, but the relation described between variables is incorrect..</i>	Attempts to explain information presented, but draws incorrect conclusions about what the information means. <i>For example, might try to describe a graph but names variables or axis incorrectly.</i>
Representation <i>Ability to convert relevant information into various quantitative forms (e.g., equations, graphs, diagrams, tables, words).</i>	Skillfully converts relevant information into an insightful quantitative portrayal in a way that contributes to a further or deeper understanding. E.g., clearly indicates how constructs or concepts are defined or measured and discusses the limitations of approach.	Accurately converts relevant information into an appropriate and desired quantitative portrayal. Does not fully specify how constructs or concepts are defined or measured.	Converts information but resulting quantitative portrayal is only partially appropriate or accurate. Tries to make links between constructs or concepts but does not adequately specify how they are defined or measured.	Attempts conversion of information but resulting quantitative portrayal is inappropriate or inaccurate. Makes inaccurate links between constructs or concepts and data or does not mention them at all. <i>For example, plots graph data incorrectly, or builds incorrect charts.</i>
Analysis/Application <i>Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis.</i>	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work. Exhibits thorough understanding of the trends in the data. Extrapolates conclusions from the data available.	Uses the quantitative analysis of data as the basis for competent judgments related to data, drawing reasonable and appropriately qualified conclusions from this work. Identifies trends in data when appropriate and makes sound inferences about them.	Uses the quantitative analysis of data as the basis for common sense (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work. Draws irrelevant or inaccurate conclusions based on the data available. Selects inappropriate data or uses data in a biased way.
Evaluation <i>Ability to identify and evaluate important assumptions in argumentation, presentation, and analysis of quantitative information.</i>	Explicitly offers an evaluation of 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 offers an evaluation of assumptions and provides compelling rationale for why assumptions are appropriate or not appropriate.	Offers an evaluation of the assumptions made in the presentation of information but does so incompletely or not explicitly articulated.	Fails to attempt to evaluate assumptions or does so inaccurately.
Argumentation <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, and data selected)</i>	Uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality. In addition, thoroughly synthesizes and integrates the data available to disclose essential relations or aspects of the phenomena of interest; does not focus on or get distracted by less relevant details.	Uses quantitative 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. For example, doesn't deal with outliers or missing data.	Uses quantitative information, but does not effectively connect it to the argument or purpose of the work.	Attempts to present an argument based on relevant quantitative material, but does not provide adequate explicit quantitative support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.)