

Quantitative Literacy

College of the Canyons (Derived from the AAC&U VALUE Rubric)

Quantitative Literacy 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, mathematical equations, etc., as appropriate).

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		Benchmark 1
		3	2	
Interpretation <i>Ability to explain information presented in quantitative information (e.g., equations, graphs, diagrams, tables, words)</i>	Provides accurate explanations of information. 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. <i>For instance, accurately explains the trend data shown in a graph.</i>	Provides somewhat accurate explanations of information, 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, 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)</i>	Skillfully converts relevant information into an insightful mathematical format in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical format.	Completes conversion of information but resulting mathematical format is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical format is inappropriate or inaccurate.
Calculation	Calculations attempted are all successful and sufficiently comprehensive to solve the problem. Calculations are also presented clearly and concisely.	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem.	Calculations attempted are partially successful or represent only a portion of the calculations required to comprehensively solve the problem.	Calculations are attempted but are unsuccessful and inaccurate.
Application / Analysis <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 adept judgments, drawing insightful, carefully qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic interpretations.
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. Demonstrates awareness that confidence in final conclusions is limited by the accuracy of the assumptions.	Explicitly describes assumptions and provides basic rationale for why assumptions are appropriate.	Provides basic description of assumptions.	Attempts to describe assumptions.
Communication <i>Ability to express 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 information to support the argument or purpose of the work, presents it in an appropriate and effective format, and effectively explains it with consistently high quality.	Uses quantitative information to support the argument or purpose of the work, though data may be presented in a less than completely effective format or lack clear connection.	Uses quantitative information, but does not effectively connect it to the argument or purpose of the work.	Presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.)