

QUANTITATIVE LITERACY ASSESSMENT RUBRIC

LEARNING OUTCOME: Students will use quantitative information to draw inferences and communicate informed arguments.

Criteria	Advanced (4)	Proficient (3)	Developing (2)	Beginning (1)
Information Contextualization/ Preparation: <i>Identify and format appropriate quantitative information needed to address a question or problem. (e.g. data source, equations, functions, graphs, or theoretical constructs, etc.)</i>	Demonstrates a thorough understanding of the most relevant quantitative information and effectively contextualizes its connection to the question or problem. Expertly selects and prepares appropriate variables, parameters, or elements for use within the analytical or theoretical framework.	Demonstrates a general understanding of relevant quantitative information and mostly contextualizes its connection to the question or problem. Selects generally appropriate variables, parameters, or elements and prepares them adequately for use within the analytical or theoretical framework.	Shows a limited understanding of relevant quantitative information and partially connects it to the question or problem. Selects some appropriate variables, parameters, or elements but prepares them with errors or inconsistencies, impacting their effectiveness within the analytical or theoretical framework.	Lacks understanding of relevant quantitative information and fails to connect it to the question or problem. Selects inappropriate or irrelevant variables, parameters, or elements and does not prepare them adequately, hindering their use within the analytical or theoretical framework.
Comprehension of Mathematical Forms: <i>Explain information presented in mathematical forms (e.g., graphs, equations, tables, words, diagrams, etc.)</i>	Accurately describes the meaning of mathematical forms. Provides deep elaboration revealing relevant facts or ideas.	Describes the meaning of mathematical forms.	Describes the meaning of mathematical forms in a limited manner. Explanation is partially appropriate or accurate.	Incorrect description of the meaning of mathematical forms.
Calculation: <i>Perform appropriate quantitative operations to solve the problem or address the task.</i>	Applies the most appropriate quantitative operations to answer a problem or question. Executes calculations accurately and thoroughly.	Applies generally appropriate quantitative operations to solve a problem or question. Execution is mostly accurate with minor errors.	Applies some quantitative operations that are partially aligned with the problem or question. Execution may include errors when using the correct method or may be error-free but based on an incorrect operation.	Fails to apply appropriate quantitative operations resulting in a complete misalignment with the problem or question. Execution includes significant errors or omissions.
Interpretation and Communication: <i>Make inferences and communicate appropriate conclusions based on quantitative analysis, theoretical results, or information provided (e.g. graphs, equations, etc.)</i>	Draws informed, justifiable, and comprehensive inferences and conclusions with clear explanations of the significance of quantitative information in addressing the question. Articulates a thorough recognition of limitations in data, methods, assumptions, and/or analytic techniques.	Draws generally appropriate conclusions with satisfactory explanations of the significance of the quantitative information in addressing the question. Articulates some recognition of limitations in data, methods, theoretical assumptions, and/or analytical techniques.	Draws limited or partially relevant conclusions with limited explanation of the significance of the quantitative information in addressing the question. Articulates little recognition of limitations in data, methods, theoretical assumptions, and analytical techniques.	Fails to draw inferences at all, with no meaningful explanation of the significance of quantitative information, theoretical results, or provided information in addressing the question or problem. Recognition of limitations is missing.
Disciplinary Conventions (Methodology) <i>When applicable, select and apply methods and models that align with discipline-specific standards, demonstrating adherence to established conventions in the field.</i>	Demonstrates detailed attention to and successful execution of discipline-specific conventions when selecting and implementing methodology.	Demonstrates proper use of discipline-specific method with minor errors.	Demonstrates limited use of discipline-specific conventions; contains major errors.	Does not follow discipline-specific conventions when selecting and implementing methodology.