



Association
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Universities

FALL 2008 VALUE QUANTITATIVE LITERACY METARUBRIC DRAFT FOR PUBLIC RELEASE

This rubric is the first step in a rubric development process that will produce additional drafts, each responsive to the feedback received. Feedback deadline is February 15, 2009. The next draft of this rubric will be available in May 2009. For more information or to give feedback, please email Wende Morgaine at wendemm@gmail.com. Thank you!

Quantitative literacy, also known as quantitative reasoning (QR), is a “habit of mind” that can be strengthened considerably during a student’s college years. While curricular opportunities for students to enhance their quantitative literacy skills come from across the curriculum and at all levels of the curriculum, not all students will encounter such courses each and every year. Opportunities for students to develop their QR skills are strongly influenced by the degree to which their major employs these skills. As such, this Quantitative Literacy Rubric does not tie the four levels of competency to the four years of college; rather, it is constructed on a scale in which level 4 indicates exemplary skills, 3 indicates strong skills, 2 indicates limited skills, and 1 indicates very weak skills. Details on the scale are provided for the six quantitative literacy criteria below.

Evaluators are encouraged to assign a **zero** to any performance that doesn’t meet level one performance.

	4	3	2	1
Interpretation <i>Ability to explain information presented in a mathematical form (e.g., equations, graphs, diagrams)</i>	Skillfully explains information presented in mathematical form (e.g., equations, graphs, diagrams, tables). Consistently provides clear explanations with no errors.	Competently explains information presented in mathematical form (e.g., equations, graphs, diagrams, tables). Rarely makes errors or gives unclear explanations.	Developing the ability to explain information presented in mathematical form (e.g., equations, graphs, diagrams, tables). Sometimes makes errors or gives unclear explanations.	Attempts to explain information presented in a mathematical form (e.g., equations, graphs, diagrams, tables), but has trouble doing so correctly. Frequently makes errors or gives unclear explanations.
Representation <i>Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, or diagrams)</i>	Consistently demonstrates fluency in converting relevant information into various mathematical forms (e.g., equations, graphs, or diagrams, tables). Reliably chooses the best form for the problem at hand	Generally able to convert relevant information into various mathematical forms (e.g., equations, graphs, or diagrams, tables) accurately. Rarely makes errors and almost always chooses the best form for the problem at hand.	Developing the ability to convert relevant information into mathematical forms (e.g., equations, graphs, or diagrams, tables). Sometimes makes errors or uses forms that are not the best for the problem at hand.	Able to identify relevant information, but has difficulty converting it into mathematical forms (e.g., equations, graphs, or diagrams, tables). Frequently makes errors or uses forms that are not the best for the problem at hand.
Calculation	Successfully complete all of calculations for the task at hand with consistency.	Successfully complete most calculations for the task at hand most of the time, though they may not be able to successfully complete several of the tasks.	Ability to complete successfully calculations for the task at hand is limited. Perhaps the student can do a few of these calculations very well, but others are inconsistently completed and still others cannot be completed at all	Attempts to complete calculations for the task at hand are rarely and inconsistently successful.
Application / Analysis <i>Ability to make judgments based on quantitative analysis of data</i>	Makes informed judgments based on quantitative analysis of data. Consistently draws appropriate conclusions from the data and recognizes the limits of the analysis used.	Makes informed judgments based on quantitative analysis of data. Rarely making errors or drawing unwarranted conclusions .	Makes judgments based on quantitative analysis of data. Sometimes makes errors or draws unwarranted conclusions .	Attempts to make judgments based on quantitative analysis of data. Frequently makes errors or draws unwarranted conclusions .
Estimation / reasonableness checks <i>Reality checks</i>	Consistently checks calculated answers for reasonableness; makes good assumptions for estimation problems that involve unknown quantities; performs reality checks on numbers reported by others; as appropriate	Often checks calculated answers for reasonableness; makes good assumptions for estimation problems that involve unknown quantities; performs reality checks on numbers reported by others; as appropriate	Sometimes checks calculated answers for reasonableness; confident about making estimates that require assumptions about unknown quantities; performs reality checks on numbers reported by others; as appropriate	Rarely checks answers for reasonableness; confident in making estimates that require assumptions about unknown quantities; performs reality checks on numbers reported by others; as appropriate
Communication <i>Expressing a solution so that an audience understands what the solution means</i>	Clearly communicates quantitative information for reader or user , shaping it into an argument, solution, or conclusion as appropriate, using a well-chosen, effective format and placing values in context.	Clearly communicates quantitative information for reader or user , although information may not cohere as an argument, solution, or conclusion, may not be in the most effective format or with necessary context.	Communicates quantitative information for reader or user , but does not constitute a clear or coherent point, chosen format is neither the most effective nor in context.	Attempts to communicate quantitative information for reader or user , but is unsuccessful at making an argument, selecting an appropriate format, or placing in context.

Created by a team of faculty from higher education institutions across the United States.