Quantitative Literacy (QL) – also known as Numeracy or 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, 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.

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**Interpretation**  
**Ability to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words):**
- Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. For example, accurately explains the trend data shown in a graph.  
- Provides accurate explanations of information presented in mathematical forms. For instance, accurately explains the trend data shown in a graph.  
- Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. For instance, accurately explains trend data shown in a graph, but may misinterpret the slope of the trend line.  
- Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. 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.

**Representation**  
**Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words):**
- Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.  
- Competently converts relevant information into an appropriate and desired mathematical portrayal.  
- Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.  
- Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.

**Calculation**  
**Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.):**
- Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.)  
- Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem.  
- Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem.  
- Calculations are attempted but are both unsuccessful and are not comprehensive.

**Application / Analysis**  
**Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis:**
- Uses the quantitative analysis of data as the basis for deep and thoughtful 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 workmanlike (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.

**Assumptions**  
**Ability to make and evaluate important assumptions in estimation, modeling, and data analysis:**
- 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**  
**Expressing quantitative evidence in support of the argument or purpose of the work:**
- 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.  
- 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.  
- 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.)