Quick Quantitative Reasoning (QR) Writing Rubric[1]

This rubric is designed for papers where the potential uses of numbers can provide useful detail, enrich descriptions, present background, or establish frames of reference.

I. Use of Numerical Evidence To what extent is numerical evidence and quantitative reasoning present in the paper? [**Note**: This is *not* a rating of the quality of the QR shown, only its presence.]

None	No explicit numerical evidence or quantitative reasoning. May include quasi-numeric references (i.e. "many," "few," "most," "increased," "fell," etc.).
Incidental	One or two instances of explicit numerical evidence or quantitative reasoning (perhaps in the introduction to set the context), but no more.
Used	Explicit numerical evidence or quantitative reasoning is used throughout the paper.

II. Quality - Evaluation of the quality of the implementation, interpretation, and communication of QR:

None	Fails to use any explicit numerical evidence to provide context. The paper is weaker as a result. **This paper shows no attempt to employ QR**.
Developing	Uses numerical evidence to provide context in some places, but not in others. The missing context weakens the overall paper. Or the paper may consistently provide data to frame the argument, but fail to put that data in context by citing other numbers for comparison. **Ultimately, the attempt using QR does not achieve its goal.**
Moderate	The paper consistently provides numerical evidence to contextualize the argument when appropriate. Moreover, numbers are presented with comparisons (when needed) to give them meaning. However, there may be times when a better number could have been chosen or more could have been done with a given figure. **In total, the peripheral use of QR effectively frames or motivates the argument.**
Strong	Throughout the paper, numerical evidence is used to frame the argument in an insightful and effective way. When needed, comparisons are provided to put numbers in context. **This paper would be an excellent choice as an example of effective peripheral QR to be shared with students and faculty.**

III. Problems- Problematic characteristics of the QR present in the paper.
Check all issues that detract significantly from the reader's understanding of the information.

_____ Uses ambiguous words rather than numbers.

_____ Uses numerical or quantitative terms incorrectly.

_____ Fails to provide numbers that would contextualize the argument.

_____ Presents numbers without comparisons that might give them meaning.

_____ Presents numbers but doesn't weave them into a coherent argument.

_____ Makes an unsupported claim about the causal meaning of findings.

_____ Doesn't evaluate source or methods credibility and limitations.

_____ Inadequate scholarship on the origins of quantitative information cited.

[1] Adapted from Carleton College's QUIRK program: http://serc.carleton.edu/quirk/Assessment/index.html

Quantitative Writing Guide for Students[2]

What do the numbers show?

Don't settle for weasel words like "some" or "many" when precise numbers are available. "Many" people don't suffer from AIDS in the US-over 1 million do.

But don't just settle for any number. Consider whether a particular figure is the right number. Interrogate numbers just as you interrogate texts.

When writing introductions or conclusions to papers, consider how you might use a few well-chosen numbers to establish a context or document the importance of the phenomenon discussed. This is a powerful use of numbers even in papers that are not inherently quantitative. For example, if you are writing a paper that discusses the nature and causes of psychogenic pain, it might help to tell the reader how common (or uncommon) the disorder really is.

How representative is that?

Stories are compelling. But anecdotes can also be misleading. Ask yourself whether a case is typical, and provide evidence to your reader assessing how representative your example is. Is the average appropriate, or are there subgroups or extreme values that present a different picture?

Compared to what?

Is $1 million a lot of money? If it's a salary figure, it puts you in the top 1/2 of 1 percent of US tax filers. But it's only 1/4,000,000 of the US federal budget.

Numbers (especially really big or really small numbers) need context. It often helps to compare them to other better-known figures.

How do the numbers help the argument?

Explain the impact of the numbers used. Do they show how large the problem is? Are they indicating the success (or failure) of a particular approach? Are they suggesting a relationship between two things? How does knowing these figures shape the way you think about the issue?

What's the source of the numbers?

Consider whether the people reporting the figures are credible or if they might have a bias. Also note whether the number comes from a single study or is the result of an entire literature—that is, a collection of studies.

[2] Adapted from Carleton College's QUIRK student guide: http://serc.carleton.edu/quirk/forstudents/improve_papers.html

Quantitative Writing
Goals and Objectives

Goals in quantitative literacy (as this skill relates to written argument)[3]:

- How to use data effectively to support a point
- Understand that data can be manipulated to support a point
- See why numbers matter in a political, social, argumentative context
- Get students comfortable with using and questioning numbers as evidence

Objectives:[4]

- Uses numerical and quantitative terms correctly
- States questions and issues under consideration using quantitative information (instead of ambiguous terms)
- Places numbers in context or uses them in comparisons
- Identifies appropriate quantitative or numerical evidence to address questions and issues
- Integrates quantitative or numerical evidence into the argument appropriately

[3] http://flightline.highline.edu/english/ideas/ql.php
[4] Some taken from: http://serc.carleton.edu/quirk/assessment/Goals.html