Foundational Studies Assessment 2025
Quantitative Literacy

Artifact Evaluation Summary

Sample

	# of Sections	# of Artifacts
100-Level	12	60
200-Level	13	65
Total	25	125

Sections not submitting artifacts = 0
Participation Rate = 100%
Ratable Artifact Rate = 91%

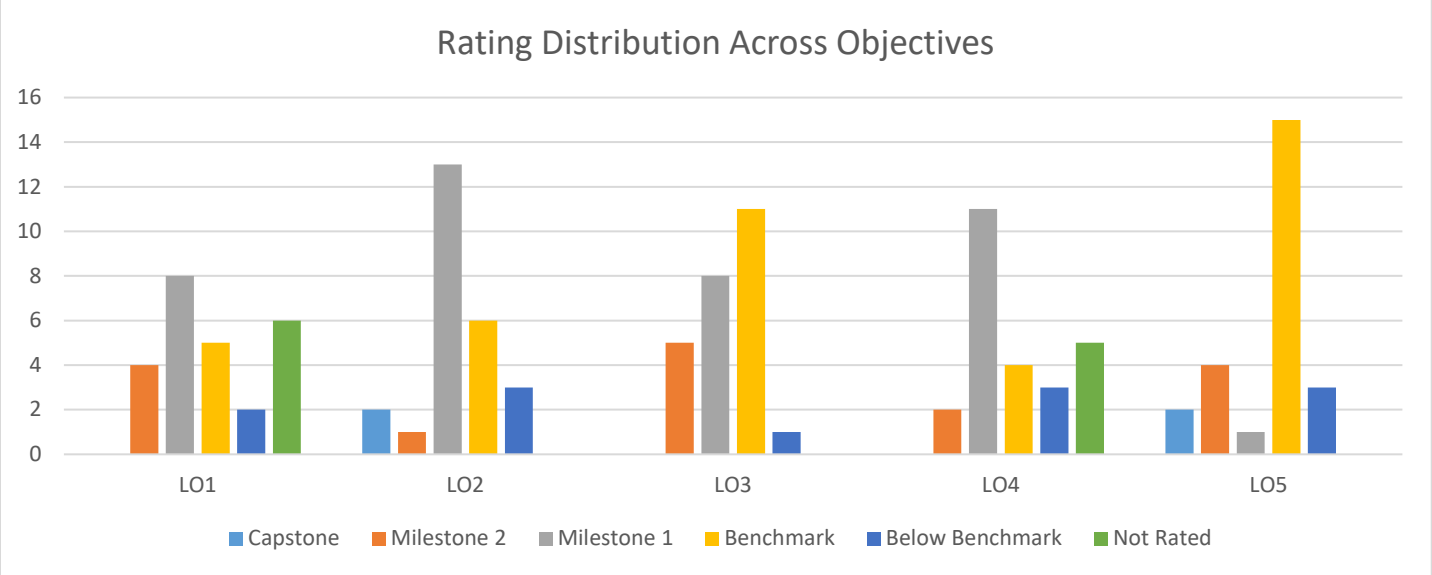
Average Rating = Benchmark
Most Frequent Rating = (tie) Milestone 1 & Benchmark

Courses included: CHEM 106, CHEM 106L, PHYS 106, PHYS 106L, MATH 102, MATH 105, MATH 241

Learning Objectives

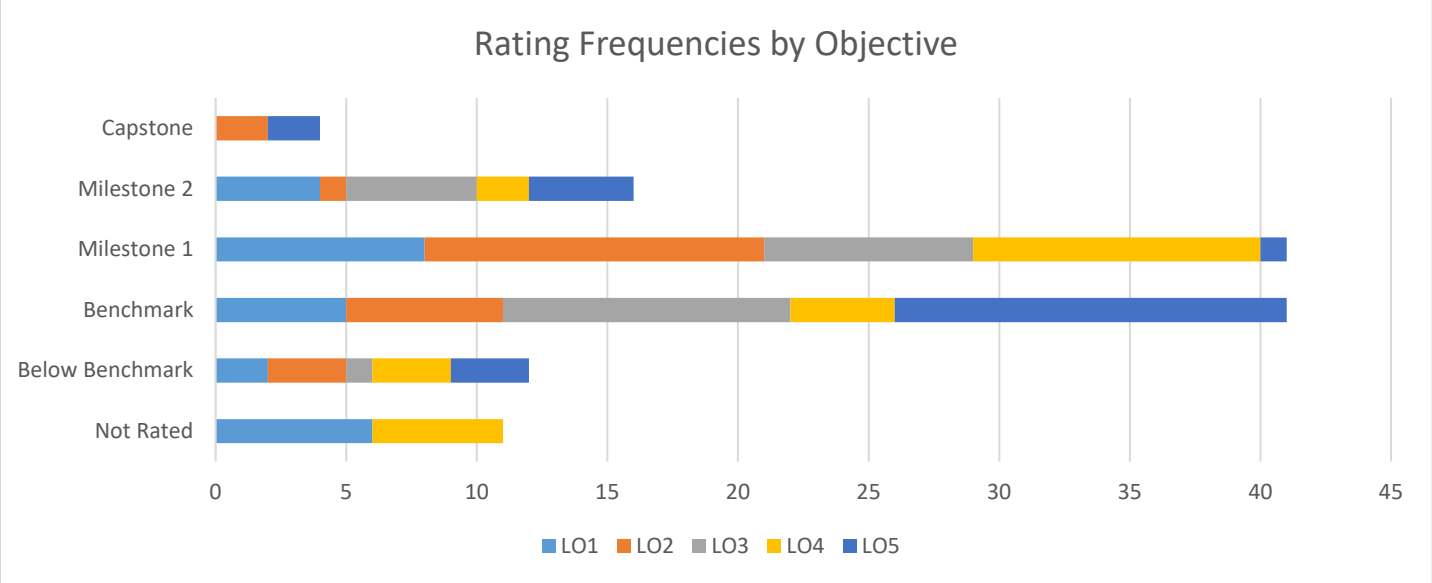
1. Explain information presented in mathematical forms (e.g., equations, graphs, tables, words, geometric figures), including appropriate critique of the information or conclusions provided.
2. Convert relevant quantitative information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words, geometric figures) and carry out mathematical procedures and processes fluently and accurately.
3. Make judgments and draw appropriate conclusions based on a quantitative analysis, while recognizing and describing the limits of this analysis.
4. Make and evaluate important assumptions in given situations in estimation, modeling, and data analysis.
5. Communicate the results of a quantitative argument, citing the representation of the math problem, explanation of the solution, and the interpretation of the solution.

Findings



	LO1	LO2	LO3	LO4	LO5
Sample Size by LO	25	25	25	25	25
Rated Artifacts by LO	19	25	25	20	25
% NR Artifacts by LO	24%	0%	0%	20%	0%

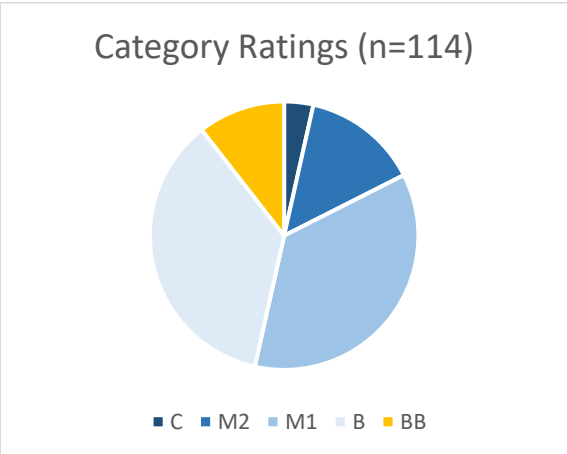
9% of artifacts in the sample were scored Not Rated



Ratings by Learning Objective

(Artifacts rated "Not Rated" are removed from analysis)

LO	n	Mean	Mode	Above Benchmark	Below Benchmark	Notes
1	19	2.83 (B/M1)	M1	63% (21% above M1)	10%	One section's data NR (assignment) One artifact NR (suspected plagiarism)
2	25	2.72 (B/M1)	M1	64%	12%	
3	25	2.62 (B/M1)	B	52%	4%	
4	20	2.60 (B/M1)	B	65%	15%	One section's data NR (assignment)
5	25	2.48 (B)	B	28%	12%	



$\overline{x}$ = 2.64 (Benchmark)

Mode = Benchmark/Milestone 1

53% above Benchmark

10% below Benchmark

Confidence Interval = 2.46042-2.8202, α=0.05

95% confidence that the population mean rating in the category will plausibly fall in Benchmark, approaching Milestone 1

*Ratings assigned using rubric evaluation are ordinal and must be converted t continuous numeric scores for the purposes of this analysis. Possible error may result in widened confidence intervals, and should be taken into account when interpreting results. Score conversions: C=5, M2=4, M1=3, B=2, BB=1

Reviewer Notes

QL Reviewers: Jennifer Inlow, Zuyi Gooley, Derrick Bowman, Fan Zuo, Jessica Markle, Linda Maule, Alison Breiding, Annie Liner, Jason Huffman, Shawn Phillips, Noah Armah, Shelley Arvin, Liz Brown, Riem Rostom

	Factors			
LO Rating Potentially Affected	**Assignment Type or Instructions**	**Learning Objective Language**	**Rubric Language**	**Other**
LO1	Assignment instructions don't prompt appropriate critique of the information or conclusions. The first student demonstrated the ability to perform well on the first half of the LO – to explain information presented on mathematical forms – but ratings weren't made because they weren't asked to demonstrate the rest of the LO. (Class 17)			
LO3	Assignment doesn't ask students to discuss the limits of their results. This resulted in max ratings of M1, though students may have been able to demonstrate further if prompted to do so. (Class 19)			
	Assignment could be more explicit about asking students to recognize and describe the limits of their analysis. (Class 21)			
LO4	Assignment type does not match the LO. (Class 3)			