

Empirical & Quantitative Skills



Learning Outcome: Palo Alto College students manipulate and analyze numerical data or observable facts, resulting in informed conclusions.

Criteria	Advanced Exceeds Expectations [3]	Developing Outcome Met [2]	Emerging Outcome Not Met [1]*
1. Identification - Gather, identify, <u>or</u> recognize appropriate qualitative or quantitative information.	Skillfully gathers, identifies, or recognizes relevant information into an insightful portrayal that contributes to further or deeper understanding of the issue.	Gathers, identifies, or recognizes relevant information.	Does not gather, identify or recognize information, OR information is irrelevant to the issue.
2. Synthesis - Process, synthesize, <u>or</u> manipulate appropriate numerical data or observable facts.	Skillfully processes, synthesizes, or manipulates data or facts to solve the issue.	Processes, synthesizes, or manipulates data or facts to solve the issue.	Does not process, synthesize or manipulate data or facts, but merely restates data/facts.
3. Conclusion - Interpret, analyze, <u>or</u> explain numerical data or observable facts culminating in one or more relevant conclusions.	Skillfully interprets, analyzes, or explains data or facts to draw well-supported and relevant conclusion.	Interprets, analyzes, or explains data or facts to draw a relevant conclusion.	Does not interpret, analyze, or explain the numerical data or observable facts and/or the conclusion is not relevant.

* In cases of potential "Outcome Not Met" [1] ratings, **if the assignment prompt does not ask the student to demonstrate the task** within a criterion's description, then the artifact should receive a "zero" [0] score, rather than a 1, for that criterion.



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Empirical and Quantitative Skills Glossary

The definitions that follow were developed to clarify terms and concepts in this rubric only.

Manipulate: To change, substitute or rearrange information (*i.e. – in science, a student might manipulate a variable in an experiment; in math, a student might manipulate an equation to solve for a specific value*)

Observable Fact: A noticed piece of evidence determined using one of the senses of the body (*i.e. – smell, sight, etc.*)

Process: A series of actions or operations that lead to a result

Relevant Conclusion: A conclusion that is relative to the original investigative statement

Skillfully: With great ability to do an activity or job well

Synthesize: To combine parts or elements to create a whole (To combine ideas or findings to make an overall point)

Well-supported: Substantially upheld by evidence or facts

