Scientific Reasoning Goal: Students will become familiar with science as a method of inquiry. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions.

Scale / Outcomes	4 Highly Competent	3 Competent	2 Minimally Competent	1 Not Competent
1. Explain the methods of scientific inquiry that lead to the acquisition of knowledge. Such methods include observations, testable hypotheses, logical inferences, experimental design, data acquisition, interpretation, and reproducible outcomes.	Provides all required explanations. All explanations are clear, complete and related to the problem posed.	Provides most explanations and most are clear, complete, and related to the problem posed.	Provides explanations, but most are incomplete or not related to the problem posed; some explanations are not provided.	Provides no explanations or understandable explanations or explanations related to the problem posed.
2. Apply scientific methods to investigate real-world phenomena, and routine and novel problems. This includes data acquisition and evaluation, and prediction.	Successfully applies all required scientific methods to investigate both routine and novel problems. All applications are efficient, complete, correct and related to the problems posed.	Successfully applies most required scientific methods to investigate both routine and novel problems. Most applications are complete, correct and related to the problems posed.	Successfully applies some required scientific methods to investigate routine problems. Most applications are incomplete or incorrect or not related to the problems posed.	Does not apply any scientific methods or scientific methods correctly.
3. Represent scientific data symbolically, graphically, numerically, and verbally.	Provides all required representations. All representations are clear, complete and related to the given scientific data.	Provides all required representations. Most representations are clear, complete, and related to the given scientific data.	Provides representations. Most representations are incomplete or not related to the given scientific data or not provided.	Provides no representations or understandable representations or representations that are related to the given scientific data.
4. Interpret scientific information and draw logical inferences from representations such as formulas, equations, graphs, tables, and schematics.	Successfully interprets all required representations of scientific information and draws appropriate logical inferences.	Successfully interprets most required representations of scientific information and draws some logical inferences.	Successfully interprets some required representations of scientific information, but is unable to draw logical inferences.	Does not successfully interpret any representations of scientific information.
5. Evaluate the results obtained from scientific methods for accuracy and/or reasonableness.	Successfully evaluates the results obtained from scientific methods for accuracy and/or reasonableness, and where necessary, identifies a cause of inaccuracy and/or	Successfully evaluates the results obtained from scientific methods for accuracy and/or reasonableness.	Clearly attempts to evaluate the results for accuracy and/or reasonableness, but is unsuccessful.	Does not evaluate the results for accuracy and/or reasonableness.

	unreasonableness.			