GOAL ONE: CRITICAL THINKING

Competency: Understand and apply elements of scientific inquiry and scientific principles in a natural science labratory course setting.

Learning Outcome: Students will use the scientific method to define a problem, utilize appropriate methods to solve the problem, and propose and evaluate a solution to the problem.

Students will think critically using a purposeful, reasoned, objective, and goal-oriented process in a variety of contexts.

Student Name _____

Course _____ Section _____ Semester/Year _____

STUDENT LEARNING OBJECTIVE	MASTERY SKILL LEVEL 4	ACCOMPLISHED SKILL LEVEL 3	DEVELOPING SKILL LEVEL 2	UNDERDEVELOPED SKILL LEVEL 1	UNDEVELOPED SKILL LEVEL 0	SCORE
Observe and describe natural phenomena and formulate hypotheses.	• Consistently able to distinguish between natural and supernatural phenomena • Consistently uses observations to develop hypotheses.	• Usually demonstrates ability to distinguish between natural and supernatural phenomena • Usually uses observations to develop hypotheses.	• Sometimes able to distinguish between natural and supernatural phenomena • Sometimes uses observations to develop hypotheses.	• Rarely demonstrates ability to distinguish between natural and supernatural phenomena • Even with guidance has difficulty using observations to develop hypotheses.	• Unable to distinguish between natural and supernatural phenomena • Even with guidance is unable to use observations to develop hypotheses.	
Plan and implement scientific experiments to test hypotheses.	• Consistently demonstrates ability to plan scientific experiments • Consistently demonstrates ability to perform scientific experiments.	• Usually demonstrates ability to plan scientific experiments • Usually demonstrates ability to perform scientific experiments.	• Sometimes demonstrates ability to plan scientific experiments • Sometimes demonstrates ability to perform scientific experiments.	• Rarely demonstrates ability to plan scientific experiments • Rarely demonstrates ability to perform scientific experiments.	• Does not demonstrate any ability to plan scientific experiments • Does not demonstrate ability to perform scientific experiments even with constant guidance.	
Utilize scientific laboratory skills for data collection within a college laboratory setting.	• Consistently demonstrates the proper use of laboratory equipment and safety procedures • Consistently demonstrates the ability to collect, collate, and record data.	• Usually demonstrates the proper use of laboratory equipment and safety procedures • Usually demonstrates the ability to collect, collate, and record data.	• Sometimes demonstrates the proper use of laboratory equipment and safety procedures • Sometimes demonstrates the ability to collect, collate, and record data.	• Rarely demonstrates the proper use of laboratory equipment and safety procedures • Rarely demonstrates the ability to collect, collate, and record data.	• Does not demonstrates the proper use of laboratory equipment and safety procedures • Does not demonstrate the ability to collect, collate, and record data.	
Evaluate experimental data and propose solutions based on this data.	• Consistently able to demonstrate the ability to analyze and interpret experimental data • Consistently able to reassess the impact of the experimental data on the original hypothesis • Consistently able to propose appropriate conclusions based on the interpretation of experimental data.	• Usually demonstrate the ability to analyze and interpret experimental data • Usually able to reassess the impact of the experimental data on the original hypothesis • Usually able to propose appropriate conclusions based on the interpretation of experimental data.	• Sometimes able to demonstrate the ability to analyze and interpret experimental data • Sometimes able to reassess the impact of the experimental data on the original hypothesis • Sometimes able to propose appropriate conclusions based on the interpretation of experimental data.	• Rarely demonstrate the ability to analyze and interpret experimental data • Rarely able to reassess the impact of the experimental data on the original hypothesis • Rarely able to propose appropriate conclusions based on the interpretation of experimental data.	• Unable to demonstrate the ability to analyze and interpret experimental data • Unable to reassess the impact of the experimental data on the original hypothesis • Does not propose appropriate conclusions based on the interpretation of experimental data.	
Evaluate the proposed implications of a solution.	• Consistently able to recognize the need for additional testing • Consistently able to relate experimental conclusions to the natural world.	• Usually able to recognize the need for additional testing • Usually able to relate experimental conclusions to the natural world.	• Sometimes able to recognize the need for additional testing • Sometimes able to relate experimental conclusions to the natural world.	• Rarely able to recognize the need for additional testing • Rarely able to relate experimental conclusions to the natural world.	• Unable to recognize the need for additional testing • Unable to relate experimental conclusions to the natural world.	