**GOAL ONE: CRITICAL THINKING**

**Competency:** Understand and apply elements of scientific inquiry and scientific principles in a natural science laboratory 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.

**STUDENT LEARNING OBJECTIVE** | **MASTERY SKILL LEVEL** | **ACCOMPLISHED SKILL LEVEL** | **DEVELOPING SKILL LEVEL** | **UNDERDEVELOPED SKILL LEVEL** | **SCORE**
--- | --- | --- | --- | --- | ---
**Observe and describe natural phenomena and formulate hypotheses.** | • Consistently able to distinguish between natural and supernatural phenomena<br>• Consistently uses observations to develop hypotheses. | • Usually demonstrates ability to distinguish between natural and supernatural phenomena<br>• Usually uses observations to develop hypotheses. | • Sometimes able to distinguish between natural and supernatural phenomena<br>• Sometimes uses observations to develop hypotheses. | • Rarely demonstrates ability to distinguish between natural and supernatural phenomena<br>• Even with guidance has difficulty using observations to develop hypotheses. | 4<br>3<br>2<br>1<br>0

**Plan and implement scientific experiments to test hypotheses.** | • Consistently demonstrates ability to plan scientific experiments<br>• Consistently demonstrates ability to perform scientific experiments. | • Usually demonstrates ability to plan scientific experiments<br>• Usually demonstrates ability to perform scientific experiments. | • Sometimes demonstrates ability to plan scientific experiments<br>• Sometimes demonstrates ability to perform scientific experiments. | • Rarely demonstrates ability to plan scientific experiments<br>• Rarely demonstrates ability to perform scientific experiments. | 4<br>3<br>2<br>1<br>0

**Utilize scientific laboratory skills for data collection within a college laboratory setting.** | • Consistently demonstrates the proper use of laboratory equipment and safety procedures<br>• Consistently demonstrates the ability to collect, collate, and record data. | • Usually demonstrates the proper use of laboratory equipment and safety procedures<br>• Usually demonstrates the ability to collect, collate, and record data. | • Sometimes demonstrates the proper use of laboratory equipment and safety procedures<br>• Sometimes demonstrates the ability to collect, collate, and record data. | • Rarely demonstrates the proper use of laboratory equipment and safety procedures<br>• Rarely demonstrates the ability to collect, collate, and record data. | 4<br>3<br>2<br>1<br>0

**Evaluate experimental data and propose solutions based on this data.** | • Consistently able to demonstrate the ability to analyze and interpret experimental data<br>• Consistently able to reassess the impact of the experimental data on the original hypothesis<br>• Consistently able to propose appropriate conclusions based on the interpretation of experimental data. | • Usually demonstrate the ability to analyze and interpret experimental data<br>• Usually able to reassess the impact of the experimental data on the original hypothesis<br>• 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<br>• Sometimes able to reassess the impact of the experimental data on the original hypothesis<br>• Sometimes able to propose appropriate conclusions based on the interpretation of experimental data. | • Rarely demonstrate the ability to analyze and interpret experimental data<br>• Rarely able to reassess the impact of the experimental data on the original hypothesis<br>• Rarely able to propose appropriate conclusions based on the interpretation of experimental data. | 4<br>3<br>2<br>1<br>0

**Evaluate the proposed implications of a solution.** | • Consistently able to recognize the need for additional testing<br>• Consistently able to relate experimental conclusions to the natural world. | • Usually able to recognize the need for additional testing<br>• Usually able to relate experimental conclusions to the natural world. | • Sometimes able to recognize the need for additional testing<br>• Sometimes able to relate experimental conclusions to the natural world. | • Rarely able to recognize the need for additional testing<br>• Rarely able to relate experimental conclusions to the natural world. | 4<br>3<br>2<br>1<br>0

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

Student Name

Course ___________________________  Section ___________________________  Semester/Year ___________________________