Unit 0: General Chemistry Skills

**Learning Targets (Standards)**

**Rubric for all Learning Objectives**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **0**  **No Evidence** | **5**  **Not Yet** | **7**  **Approaching** | **8.5**  **Proficient** | **10**  **Advanced** |
| Left 2 or more questions blank on the assessment | No evidence of proficiency with the learning target but attempted the questions. | Shows beginning proficiency with the learning target, but is inconsistent or makes several errors (>4 errors) | Demonstrates understanding of most or all of the learning target, but misses no more than 1 success criteria or makes 3-4 errors | Demonstrates mastery of learning target; makes no more than  1-2 minor errors |

**LT 0.1: Construct and analyze graphs. (TAILS)**

* My graph has a title that summarizes the relationship between the independent and dependent variable.
* My graph has labeled the independent variable on the x-axis and the dependent variable on the y-axis, and includes units with the labels.
* My graph has appropriate intervals and even increments.
* My graph has an appropriate scale so that it fills the space provided.
* My graph includes a key when appropriate.
* My graph includes a line of best fit when appropriate.
* I can analyze graphs to determine correlation between the variables and use a line of best fit to interpolate or extrapolate data.

**LT 0.2: Construct an argument that includes a valid claim, evidence, and reasoning to answer a question.**

* I can write a claim that addresses the question.
* I can support my claim with 2-3 pieces of evidence, including quantitative data when appropriate.
* I can connect my evidence to defend the claim using scientific principles.
* My arguments are accurate based on the information available to me.

**LT 0.3: Actively and safely participate in lab investigations and work collaboratively with a group.**

* I am not on my phone during lab time.
* I keep my goggles over my eyes throughout the lab.
* I contribute to my group in performing and discussing the experiment.
* I do not wander around the room and distract other groups during lab time.

**LT 0.4: Participation in class is crucial to success in chemistry. Use class time effectively, maintain an organized and complete notebook, and complete assignments in and out of school.**

* I am on task during class time.
* I have completed all of my assignments.
* I complete my assignments on time.
* My notebook is neat, organized, and up to date.

Unit 1: Measuring Matter and Energy

**Learning Targets (Standards)**

**Rubric for all Learning Targets**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
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**LT 1.1: Identify standard units and use dimensional analysis to convert between them.**

* I can identify the known and unknown in a problem
* I can determine the conversions factors needed to convert between different units.
* I can convert between two different metric prefixes using dimensional analysis.
* I can convert between an English unit and a metric unit using dimensional analysis.

**LT 1.2: Calculate answers with the correct number of significant figures and units, using scientific notation as appropriate.**

* I can identify significant figures in numbers
* I can round my answers to the correct number of significant figures.
* I can write answers with appropriate units.
* I can convert numbers between standard form and scientific notation.

**LT 1.3: Analyze the accuracy and precision of experimental data and analyze experimental error.**

* I can analyze data to determine accuracy and precision and describe the reproducibility of data in an experiment.
* I can calculate percent error
* I can identify sources of error in experiments.
* I can predict likely errors in an experiment I have performed.
* I can evaluate errors to predict the effects they would have on experimental data.

**LT 1.4: Choose appropriate measurement tools and use them to report measurements with the correct number of significant figures.**

* I can choose the most accurate measurement tool for measuring volume, mass, length, and temperature.
* I can use the appropriate measurement tools to determine length, mass, volume, and temperature of substances.
* I can determine the correct number of significant figures of a measurement based on the measuring tool’s scale.

**LT 1.5: Identify types of matter and determine chemical and physical properties in matter.**

* I can explain the differences between pure substances and mixtures.
* I can identify a substance as an element, compound, or mixtures.
* I can classify a property of a substance as either chemical or physical.

**LT 1.6: Explain and model energy transfers between systems and surroundings.**

* I can identify a system and its surroundings.
* I can model the energy transfer between a system and its surroundings.
* I can categorize examples of energy as potential or kinetic energy.