**Unit 1 Learning Goals – Laboratory Safety, Measurement, and Conversions**

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| **Big Picture**: Students should understand the basic laboratory safety precautions, measurement practices, and methods for making calculations used by scientists. |
| **Content Goals** | **Skills Goals** |
| Students will be able to:* Identify laboratory behavior as safe or unsafe
* Distinguish between quantitative and qualitative descriptors
* Identify physical *and* chemical properties of a substance
* Select the appropriate laboratory equipment for a given purpose
* Identify SI units for mass, volume, length, time, and temperature
* Use the basic metric prefixes in converting numbers
* Evaluate accuracy *and* precision of measured values and calculated values
* Determine the correct degree of uncertainty for standard laboratory equipment
* Convert numbers from standard notation to scientific notation and from scientific notation to standard notation
* Identify the significant figures in a number
* Round calculated values to the correct number of significant figures
* Determine the correct number of significant figures in a calculated value
* Use the factor label method to convert from one unit to another
* Calculate the density, mass, or volume of a sample using the formula: D = m/v
* Calculate the percent error using experimental and theoretical values
 | Students will be able to:* Conduct laboratory investigations in a safe and productive manner
* Use standard laboratory equipment to accurately measure quantities
* Record measured values with the appropriate uncertainty
* Present data in well-organized tables
* Graph data appropriately
* Interpret graphed data to determine relationships
* Cite source to support hypothesis
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| **Assessment**: How will mastery of content and skills be assessed?Laboratory behavior and student lab reports will show if students can:* Work safely in the laboratory
* Use laboratory equipment properly
* Prepare well-organized data tables, and make informative graphs

Quizzes and tests will show if students have mastered the content goals. |
| **Key Vocabulary:**Physical propertyChemical propertySI UnitsQualitative | QuantitativeAccuracyPrecisionDegree of UncertaintySignificant figure  | DensityPercent error Theoretical valueExperimental valueConversion factor |

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Laboratory Peer Pressure

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