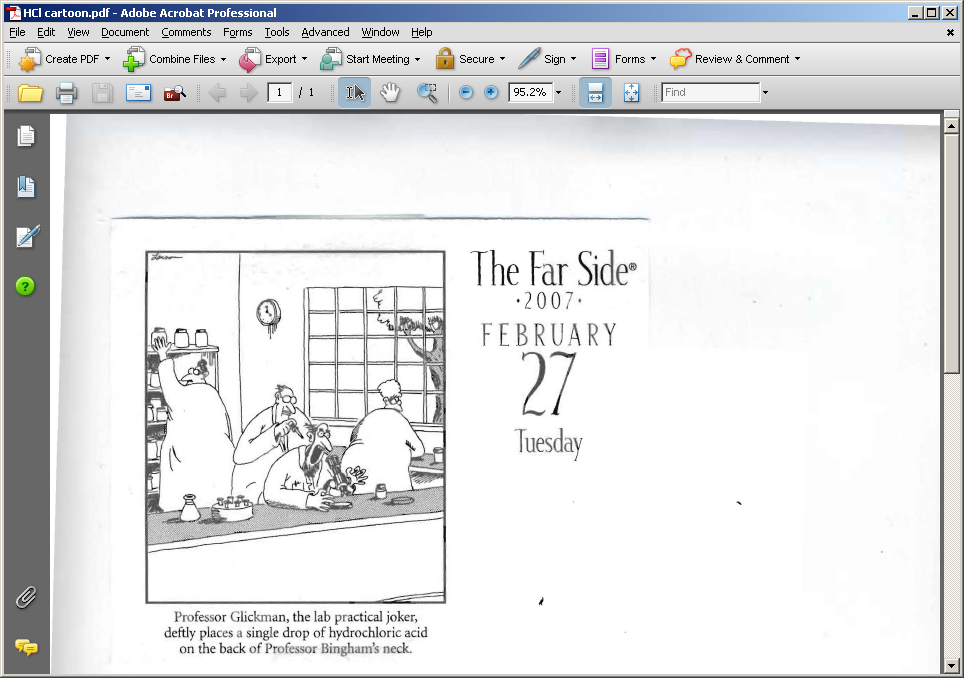
**Unit 1 Learning Goals – Laboratory Safety, Measurement, and Conversions**

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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 |
| **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 property  Chemical property  SI Units  Qualitative | Quantitative  Accuracy  Precision  Degree of Uncertainty  Significant figure | Density  Percent error  Theoretical value  Experimental value  Conversion factor |

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Laboratory Peer Pressure

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