

Chemistry Content Standards

Domain 1: Scientific Investigation

Topic 01: Scientific Investigation

- 1.01.01 Know how to collect, record, and analyze measurements appropriately.
- 1.01.02 Know and apply mathematical concepts and operations to evaluate and interpret experimental data including ratios, proportions, percentages, ranges, standard deviation, mean, median, mode, logarithms, and graphical analyses.
- 1.01.03 Demonstrate knowledge of the concepts of precision, accuracy, and error with regard to interpreting and recording numerical data acquired using a scientific instrument.
- 1.01.04 Know the appropriate use of tools and technology to make measurements including computer linked probes, pH meters, multimeters, spectrometers.
- 1.01.05 Plan and evaluate a specific scientific investigation on the basis of:
 - a. the formulation of testable questions and hypotheses
 - b. the accuracy and reproducibility of the data acquired
 - c. the distinction between variable and controlled parameters
 - d. distinctions between hypothesis, theory, and prediction as these terms are used in science
 - e. the identification of discrepant results and the possible sources of error, including uncontrolled conditions
 - g. the connections between the hypothesis proposed, tests conducted, data collected and conclusions drawn
 - h. the conclusions and their fit into the underlying theory
 - i. the new questions leading to further investigations
- 1.01.06 Interpret numerical and non-numerical experimental results calculated and displayed in charts, maps, tables, models, graphs, and labeled diagrams.
- 1.01.07 Understand procedures for the appropriate and safe storage, handling, use, disposal, care, and maintenance of chemicals, materials, and equipment.