

# Unit 00: Measurement and Safety

Content Area: **Science**  
Course(s): **Chemistry Accelerated**  
Time Period: **Generic Time Period**  
Length: **3**  
Status: **Published**

## Textbook Resources

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Glencoe Science Chemistry Concepts and Applications

Chapter 1: Chemistry: The Science of Matter

## Standards

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In real world problems, the answers are usually not numbers but quantities: numbers with units, which involves measurement. In their work in measurement up through Grade 8, students primarily measure commonly used attributes such as length, area, and volume. In high school, students encounter a wider variety of units in modeling, e.g., acceleration, currency conversions, derived quantities such as person-hours and heating degree days, social science rates such as per-capita income, and rates in everyday life such as points scored per game or batting averages. They also encounter novel situations in which they themselves must conceive the attributes of interest. For example, to find a good measure of overall highway safety, they might propose measures such as fatalities per year, fatalities per year per driver, or fatalities per vehicle-mile traveled. Such a conceptual process is sometimes called quantification. Quantification is important for science, as when surface area suddenly “stands out” as an important variable in evaporation. Quantification is also important for companies, which must conceptualize relevant attributes and create or choose suitable measures for them.

## Goals/Objectives

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- How should measurements be made?
- What does it mean to work safely?

## Content

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- Estimation
- Laboratory safety rules and practices
- Metric and English units
- Reasonability of a numeric solution
- Tools and scales to properly perform measurements

## Skills

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- Convert metric units using the power of 10
- Estimate lengths, volumes, and masses
- Identify and perform safe practices in a lab setting
- Identify practices that are not safe in a lab setting
- Interpreting and Creating Graphs
- Measure length, volume, mass, and temperature.
- Roughly convert from the Metric system to the English system