

## Chapter 1 Keys to the Study of Chemistry

The majority of this chapter is background information not tested directly on the AP test. The information is important though because if you cannot complete these types of problems, you will not be able to do the AP problems later on in the book. The AP curriculum emphasis is on knowing the metric system, vocabulary, significant figures, and density. Since the AP test is an international exam, pay particular attention to international units and how to convert between them. For example, the only temperatures given on the AP test are in Celsius or Kelvin so knowledge of conversions of Fahrenheit to Celsius will not be tested. There are a multitude of pressure units but the only pressures used on the AP test so far are mmHg (torr) and atmospheres.

One of the most important skills covered in this chapter that will help you in AP Chemistry is being able to set up problems and do calculations with dimensional analysis. Understanding dimensional analysis will help you look at the units in a problem and help you in formulating the proper setup for calculating the answer. Density and conversion problems provide an excellent practice. Another skill is being able to estimate if an answer is sensible. Real and plausible answers are on the exam. For instance, a calculation of 3,000% error is not reasonable.

One item to take note of in the chapter is rounding. On the AP test, the expectation is to look one digit past the last significant digit to decide if the answer should round up or not. If the digit is a 5 or higher, then the last significant figure would round up. For example, 5.674 g to three digits would be 5.67 g, while 5.675 g would be 5.68 g.

Whenever possible, draw pictures for yourself about what is happening. For example, in physical changes draw what happens as a change occurs from a solid to liquid and then gas. Conceptually, this will strengthen your understanding and make it less likely for you to form a misconception on a topic such as indicating water changes into hydrogen gas and oxygen gas when water is heated.