

Graphing Calculator Technology

Charts, graphs, and data analysis are essential elements of chemistry. To be successful in your study of chemistry, you must know how to make and interpret graphs and must understand the relationships between different variables.

Your graphing calculator can be a powerful tool for analyzing chemical data. In addition to using your calculator to organize and graph data, you can program your calculator to perform specialized functions.

In the text, you can use your graphing calculator to help solve the Chapter Review exercises. In addition, specific Graphing Calculator exercises referred to in the Chapter Reviews will help you explore the capabilities of your calculator while enhancing your understanding of mathematical relationships that are important in chemistry. The CBL 2™ and LabPro® probeware experiments will enable you to become adept at analyzing experimental data.

Graphing Calculator Exercises

The **go.hrw.com** site provides downloadable programs for the TI-83 Plus and the TI-84 Plus graphing calculator families. These programs include data sets to analyze. Using these programs will improve your ability to handle scientific data.

You will learn to use your calculator to graph data. Then, you will interpret the graphs and will extract the information required to answer the questions in the exercises. You will gain experience with simple linear relationships, such as the relationship between energy and temperature, and complex relationships, such as the relationship between pH and titrant volume, which is represented by a titration curve.

To solve the Graphing Calculator exercises in the Chapter Reviews and to download the programs, you will need

► a graphing calculator (TI-83 Plus or TI-84 Plus)

► appropriate TI Connectivity computer-to-calculator cable and TI Connect™ software

► a computer that has Internet access

The detailed instructions on how to download the calculator programs can be found at **go.hrw.com** (keyword **HC6 CALC**).

Calculator-Based Laboratories

Analyzing your data properly is as important as using good experimental technique in the chemistry lab. Your results will be meaningless if you do not know how to interpret them. The Calculator-Based Laboratory 2™ (CBL 2™) data-collection interface by Texas Instruments and the Vernier LabPro® data-collection interface by Vernier Software & Technology can simplify the process of obtaining and analyzing experimental data.

The data-collection interface mimics expensive electronic laboratory equipment and allows you to collect real experimental data that are stored directly onto your calculator. As a result, you will not have to record and graph your data manually. Instead, your data are automatically tabulated, and you can view real-time graphs. Consequently, you have more time to interpret your experimental results. The interface and probes allow you to collect experimental data, and with the DataMate™ App the information coming from the probes is automatically recognized.

