

presented in the chapter summary materials for easy access in review and study.

**Summary of Facts and Concepts** provides a quick review of concepts presented and discussed in detail within the chapter.

### Testing Your Knowledge

**End-of-Chapter problems** enable the student to practice critical thinking and problem-solving skills. The problems are broken into various types:

- By chapter section. Starting with Review Questions to test basic conceptual understanding, followed by Problems to test the student's skill in solving problems for that particular section of the chapter.
- Additional Problems uses knowledge gained from the various sections and/or previous chapters to solve the problem.

### Real-Life Relevance

Interesting examples of how chemistry applies to life, both around the home and “on the job,” are used throughout the text. Analogies based on common experiences such as banking (Chapter 6) and driving (Chapter 14) are used to help foster understanding of abstract chemical concepts. End-of-chapter problems ask students to apply the concepts presented in the text to answer questions drawn from common experiences, including: Why do swimming coaches sometimes place a drop of alcohol in a swimmer's ear? How does one determine if it is “safe” to open a carbonated soft drink bottle before removing the cap?

## Enhanced Support for Faculty and Students

### To the Instructor:



[www.mcgrawhillconnect.com/chemistry](http://www.mcgrawhillconnect.com/chemistry)

**McGraw-Hill Connect<sup>®</sup>** is a Web-based, interactive assignment and assessment platform that incorporates cognitive science principles to customize the learning process. The chemical drawing tool found within Connect Chemistry is PerkinElmer ChemDraw, which is

widely considered the “gold standard” of scientific drawing programs and the cornerstone application for scientists who draw and annotate molecules, reactions, and pathways. This combination of Connect and ChemDraw features an easy-to-use, intuitive and comprehensive course management and homework system with professional-grade drawing capabilities.

End-of-chapter problems from this textbook are available in Connect Chemistry for instructors to build assignments that are automatically graded and tracked through reports that export easily to Excel. Instructors can edit existing problems and write entirely new problems; track individual student performance—by problem, assignment, concepts, or in relation to the class overall—with automatic grading; provide instant feedback to students; and store detailed grade reports securely online. Grade reports can be easily integrated with learning management systems such as WebCT and Blackboard. Single sign-on integration is available with Blackboard course management systems. Within Connect, instructors can also create and share materials with colleagues. Ask your McGraw-Hill representative for more information, and then check it out at [www.mcgrawhillconnect.com/chemistry](http://www.mcgrawhillconnect.com/chemistry).

With ConnectPlus, if you or your students are ready for an alternative version of the traditional textbook, McGraw-Hill has your solution. E-books from McGraw-Hill are smart, interactive, searchable, and portable. Included is a powerful suite of built-in tools that allow detailed searching, highlighting, note taking, and instructor-to-student note sharing. In addition, the media-rich E-book for *Chemistry* integrates relevant animations and videos into the textbook content for a true multimedia learning experience.

### LearnSmart<sup>™</sup>

**McGraw-Hill LearnSmart<sup>™</sup>** This adaptive diagnostic learning system, based on artificial intelligence, constantly assesses the student's knowledge of the course material. As the student works within the system, LearnSmart develops a personal learning path adapted to what the student has actively learned and retained. This innovative study tool also has features to allow the instructor to see exactly what the student has accomplished, with a built-in assessment tool for graded assignments. LearnSmart for general chemistry can be accessed by going to [www.mcgrawhillconnect.com/chemistry](http://www.mcgrawhillconnect.com/chemistry).



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allow students and faculty to use online materials and activities to complement face-to-face teaching. Blackboard features exciting social learning and teaching tools that foster more logical, visually impactful, and active learning opportunities for students. You'll transform your closed-door classrooms into communities where students remain connected to their educational experience 24 hours a day.

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The **Presentation Center** is an online digital library containing photos, artwork, animations, and other media types that can be used to create customized lectures, visually enhanced tests and quizzes, compelling course websites, or attractive printed support materials. All assets are copyrighted by McGraw-Hill Higher Education, but can be used by instructors for classroom purposes. The visual resources in this collection include

- **Art** Full-color art digital files of all illustrations in the book.
- **Photos** Photo collection contains digital files of photographs from the text.
- **Tables** Every table that appears in the text is available electronically.
- **Animations** Numerous full-color animations illustrating important processes are also provided.
- **PowerPoint Lecture Outlines** Ready-made presentations in PowerPoint for each chapter of the text.
- **PowerPoint Slides** All illustrations, photos, and tables are preinserted by chapter into blank PowerPoint slides.

An instructor can access the Presentation Center through the *General Chemistry*, Seventh Edition, companion website or through the Library Tab within Instructor version of Connect.

### Computerized Test Bank Online

A comprehensive bank of test questions is provided within a computerized test bank using Diploma, enabling professors to prepare and access tests or quizzes anywhere, at any time. Instructors can create or edit questions, or drag-and-drop questions to prepare tests quickly and easily. Tests may be published to their online course, or printed for paper-based assignments.

**Instructor's Solution Manual** is written by Raymond Chang and Ken Goldsby. The solutions to all of the end-of-chapter problems are given in the manual. This manual is online in the text's Connect Library tab.

### Instructor's Manual

The instructor's manual provides a brief summary of the contents of each chapter, along with the learning goals, reference to background concepts in earlier chapters, and teaching tips. This manual is online in the text's Connect Library tab.

### To the Student:

Students can order supplemental study materials by contacting their campus bookstore, calling 1-800-262-4729, or online at [www.shopmcgraw-hill.com](http://www.shopmcgraw-hill.com).

Designed to help students maximize their learning experience in chemistry, we offer the following options to students:



## LearnSmart™

**McGraw-Hill LearnSmart™** is an adaptive diagnostic learning system, based on artificial intelligence, constantly assessing the students knowledge of the course material. As the students work within the system, LearnSmart develops a personal learning path adapted to what they have actively learned and retained.

**Animations** are available on the Web through the *General Chemistry*, Seventh Edition, companion website or through Connect. The animations are also formatted for digital devices.

**Problem-Solving Workbook with Selected Solutions** is a valuable resource containing material to help the student practice problem-solving skills. It also contains the detailed solutions and explanations for the even-numbered problems for each chapter.

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—Raymond Chang and Ken Goldsby