Mc Graw Hill Education

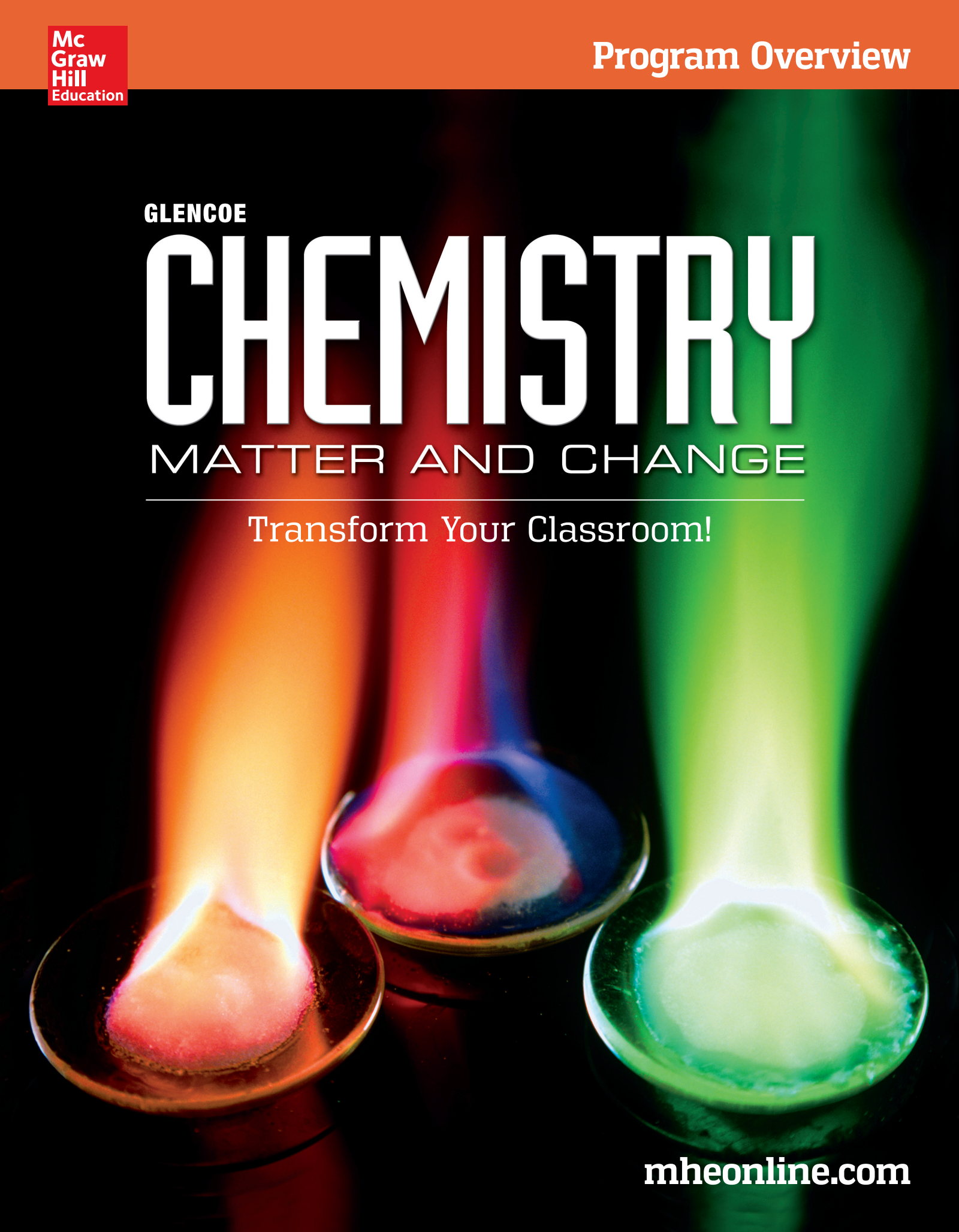
Program Overview

GLENCOE

# CHEMISTRY

## MATTER AND CHANGE

Transform Your Classroom!



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# Transform Your Classroom!

***Chemistry Matter and Change:*** *Leveraging technology to drive personalized student success while engaging and motivating students with hands-on, project-based activities and real-world applications.*

The increased pace of change in education in the last few years has created seismic shifts in the delivery and consumption of educational materials. Students want to connect what they learn in the classroom to what they see happening in the real world – today!

Helping students draw these parallels and keeping them engaged is what McGraw-Hill Education is all about. Only McGraw-Hill Education provides you with a math-based chemistry curriculum that is both rigorous and accessible.

We deliver to you the most effective, innovative, and inspiring high school chemistry curriculum that meets both Next Generation Science Standards (NGSS) and local science standards.

This innovative program is adaptive, engaging, intuitive, and rigorous. *Chemistry Matter and Change* offers you a digital-first or hybrid digital-print program, differentiation support, point-of-use resources, and so much more to transform your classroom into an exciting and engaging science learning center!

*Chemistry Matter and Change,* coupled with real-world concepts, helps you ignite curiosity in your students. Alongside dynamic photography, powerful diagrams, and compelling examples, keeps students excited about chemistry from lesson-to-lesson.

### Motivate students to engage real-world problems with these interactive digital tools:

- **Concepts-in-Motion**
- ***Science and Engineering Practices Handbook***
- **Virtual Investigations**
- **Project-Based Learning Activities** (PBLs) and **Applying Practices Worksheets**
- **WebQuests**

## CONTENTS



*Next Generation Science Standards is a registered trademark of Achieve. Neither Achieve nor the lead states and partners that developed the Next Generation Science Standards was involved in the production of, and does not endorse, this product.

We firmly believe that the betterment of people, communities, and the world is grounded in education without limits – exclusive to no one, personalized to everyone.

# RAMP UP THE ENGAGEMENT...
## With Interactive Learning

**Motivate your students with hands-on, project-based activities and real-world application. These program resources ramp up your students' engagement with chemistry like never before!**

- **Student eBook** with highlighter and note-taking tools.
- ***Sciences and Engineering Practices Handbook*** with accurate reference material and real-world examples.
- **Online Personal Tutor** to guide students through select chemistry content.
- **ConnectED Mobile** gives you the ability to manage all your teaching content offline.

# Engaging Student Resources

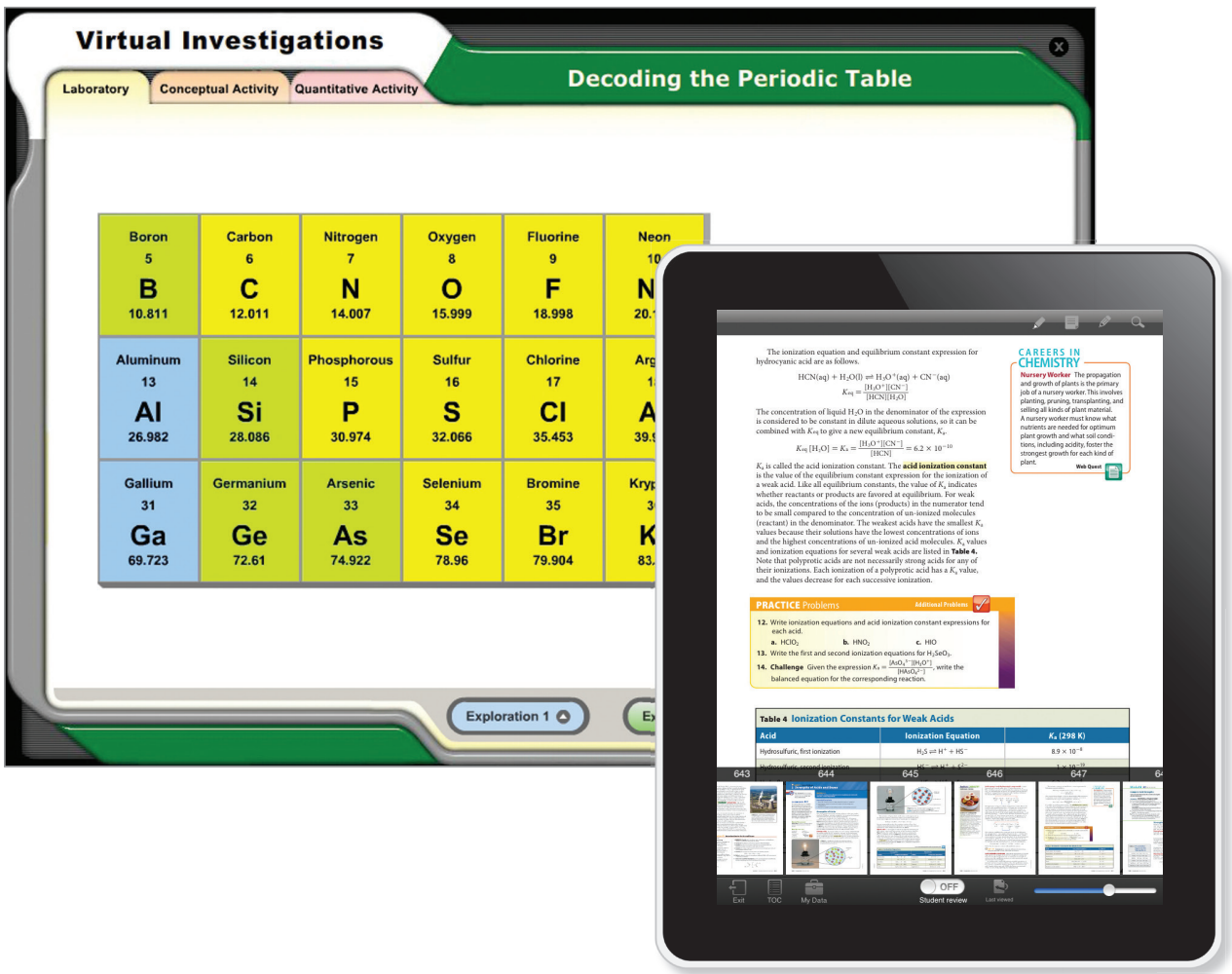
Give your students the resources they need to maximize chemistry-in-action! The ***Student eBook*** helps students turn chemistry in the real world into learning moments by giving students access to their program materials and resources anytime and anywhere.

Empower students to learn from chemistry as-it-happens with the ***Student eBook*** which learners can access anytime and anywhere using the Open eBook icon.

### Help students build active learning skills using these interactive tools:

- Step-by-step example problems with coaching notes and practice problems at point-of-use.
- Highlighter and note-taking tools.
- Worksheets and digital asset links in **ConnectED.**

The **ConnectED Mobile** app gives you complete access to your eBook, alongside planning tools, reference materials, and other program resources. **ConnectED Mobile** is available on select iOS and Android™ devices.




**The eBook in ConnectED Mobile is available offline for home use if students do not have access to the web.**

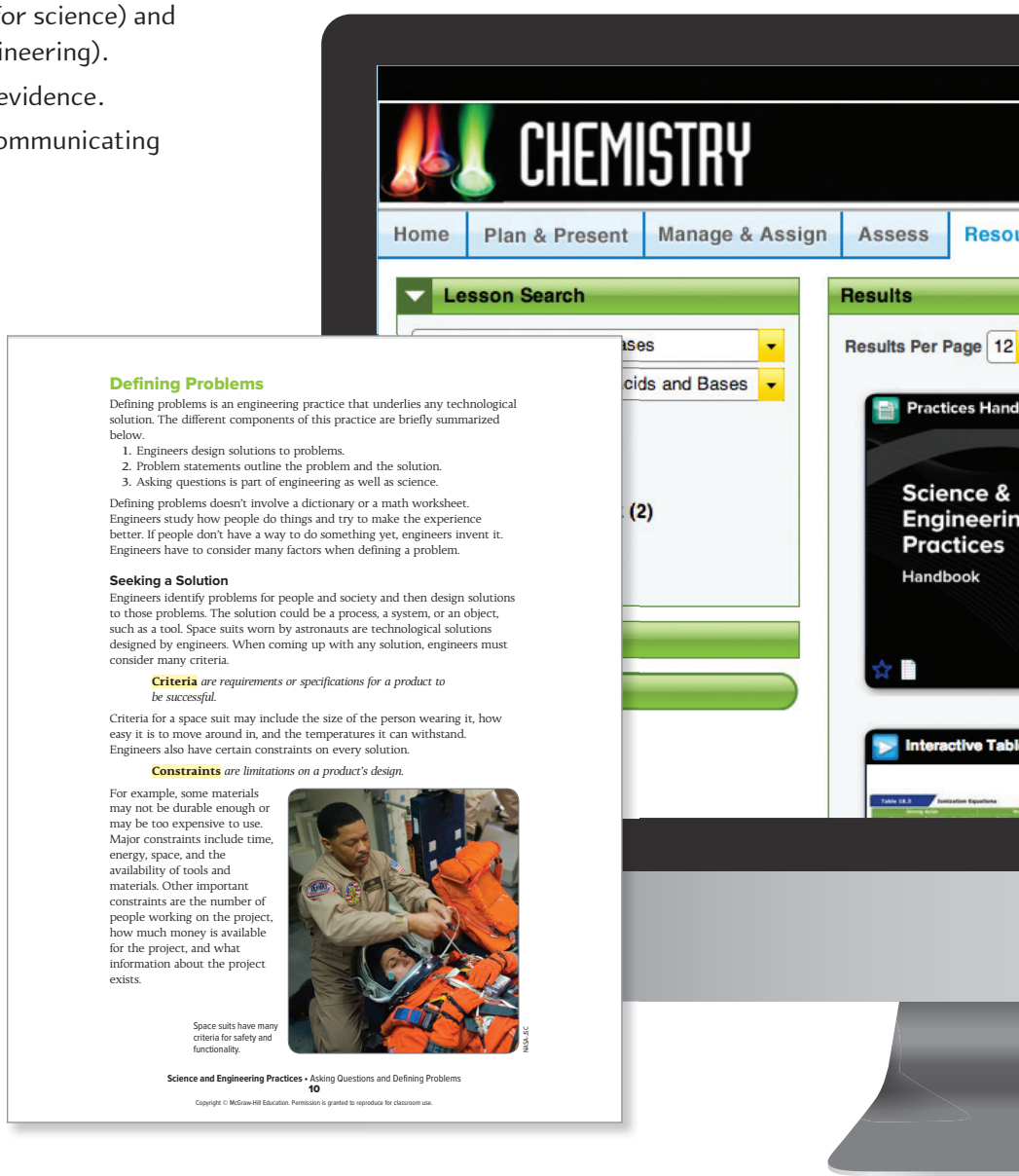
# Real-world Connections

Be confident helping students achieve more! Use the ***Science and Engineering Practices Handbook*** to introduce the practices to students and support their scientific investigations and engineering projects.

A reference book, the ***Science and Engineering Practices Handbook*** provides students with background information, definitions, examples, and Quick Practice activities to stimulate learning through practice.

### The *Science and Engineering Practices Handbook* is an easy-to-use reference for all eight practices.

1. Asking questions (for science) and defining problems (for engineering).
2. Developing and using models.
3. Planning and carrying out investigations.
4. Analyzing and interpreting data.
5. Using mathematics and computational thinking.
6. Constructing explanations (for science) and designing solutions (for engineering).
7. Engaging in argument from evidence.
8. Obtaining, evaluating, and communicating information.




**Find the Practices Handbook in your teacher resources.**

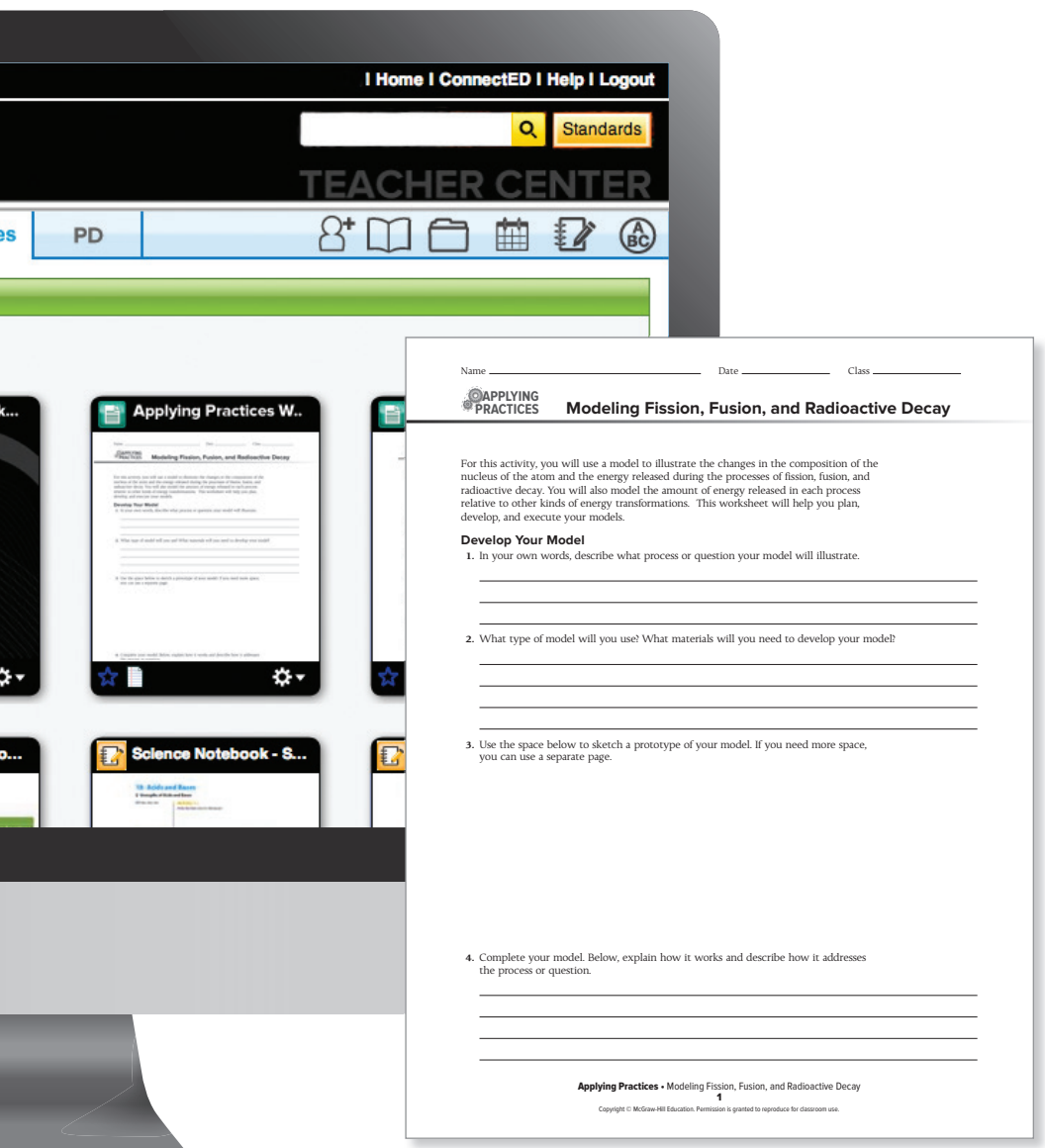
# Interactive Student Resources

Written to meet each Next Generation Science Standard (NGSS) performance expectation, **Applying Practices Worksheets** and **Project-Based Learning Activities** (PBLs) challenge your students to solve real problems in the real world. These sheets are editiable, downloadable, accessable online, and designed to meet specific performance expectations.

Interactive student resources, learning activities, and worksheets are embedded for point-of-use access. Students can use these dynamic resources immediately to practice new concepts.

### Students practice chemistry in action with these learning tools.

- **Project-Based Learning Activities** that integrate traditional science content with engineering content.
- Design-your-own labs.
- Guided Laboratory Investigations.
- Modeling activities.
- Research and communicate projects.




Name _____ Date _____ Class _____

APPLYING PRACTICES

**Modeling Fission, Fusion, and Radioactive Decay**

For this activity, you will use a model to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay. You will also model the amount of energy released in each process relative to other kinds of energy transformations. This worksheet will help you plan, develop, and execute your models.

**Develop Your Model**

1. In your own words, describe what process or question your model will illustrate.

2. What type of model will you use? What materials will you need to develop your model?

3. Use the space below to sketch a prototype of your model. If you need more space, you can use a separate page.

4. Complete your model. Below, explain how it works and describe how it addresses the process or question.




Find **Applying Practice Worksheets** in your teacher resources and teacher blades. Also accessible at point-of-use in student resources.

# TIME SAVING TECHNOLOGY...

## Creates interactive digital solutions

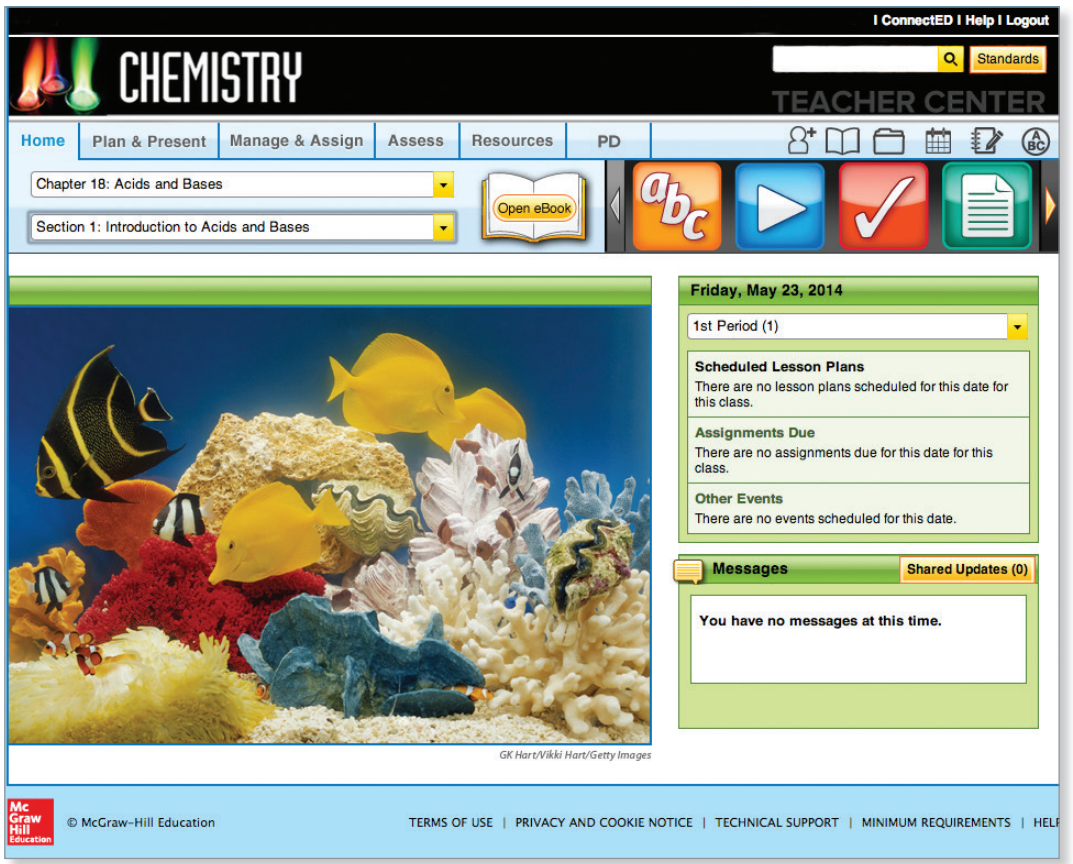
**To meet you wherever you are on the digital spectrum, *Chemistry Matter and Change* interactive learning and teaching resources are easy-to-use, whether you're a technology novice, digital native, or somewhere in the middle.**

- ***ConnectED*** is your digital teaching platform making it easy and convenient to customize lessons, review assignments, and communicate with students.
- **eSolutions** manual with always up-to-date answers and available 24-7 helps you identify knowledge gaps with premade or customized problem sets.

# Effective Teaching and Learning

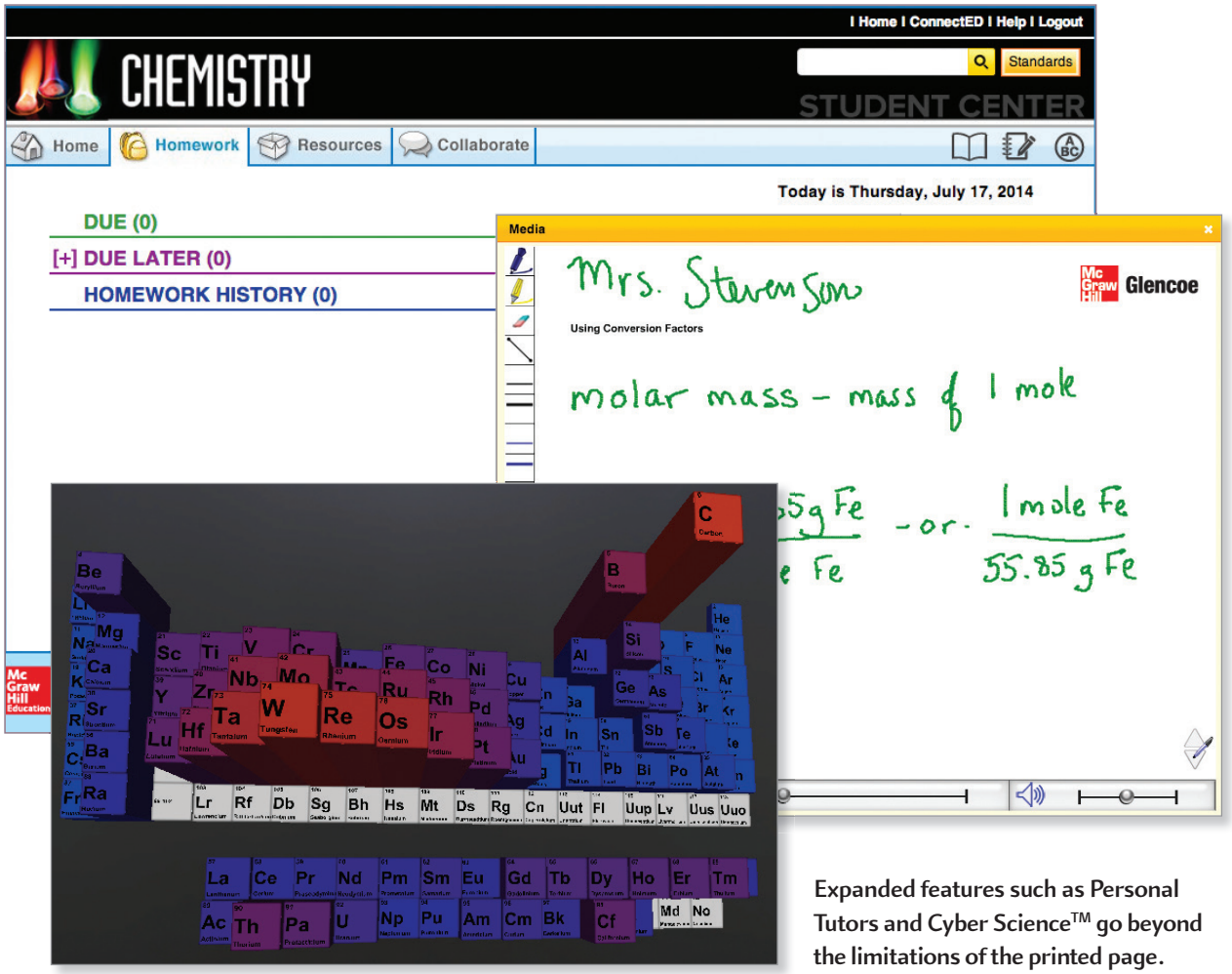
The new **ConnectED** digital platform for high school science brings a new level of engagement and effectiveness to your classroom.

A one-stop shop where you access Student eBooks, assessments tools, worksheets, presentations, messaging tools, and so much more!




## Plan, Teach, and Assess with *ConnectED*

- Plan and present personalized lessons with intuitive editing tools.
- Send and receive classroom assignments electronically to your students' **ConnectED** accounts.
- Create and customize premade diagnostic and summative evaluations using eAssessment.
- Access and review notes students take in their eBooks to plan class time and assignments more effectively.
- Search curriculum by keyword or standard.
- Offers tools such as My Files, Planner, Notebook, and eGlossary.
- Communicate with students using Message Center.




Expanded features such as Personal Tutors and Cyber Science™ go beyond the limitations of the printed page.

# Apply Interactive Practice

Students have their own digital learning platform called **ConnectED** Student Center, complete with student worksheets and digital resources. Assignments you create appear in their to-do lists. Students can message you directly and submit their work.

With **ConnectED** Student Center, your students can access their class resources anytime, anywhere.

Use expanded Student Center features such as Personal Tutors and Cyber Science 3D™ videos to go beyond the limitations of the printed page and bring science into your student's lives like never before.

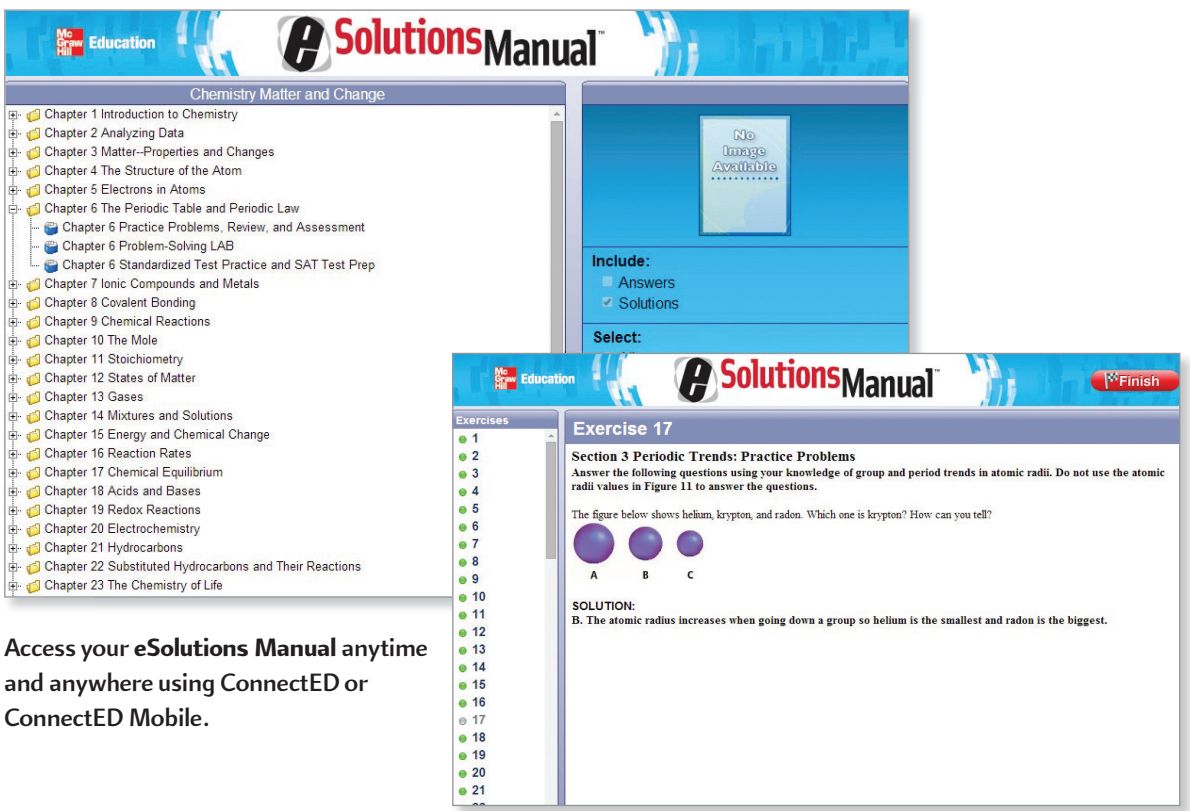
# 24-7 access

Use the **eSolutions Manual** to design a dynamic learning environment and effectively personalize content to meet each students' specific learning needs.

Replace your traditional manual with this digital **eSolutions Manual** to effectively create customized homework assignments and assign ready-made practice activities.

The **eSolutions Manual** can help you use class time more effectively. Use the "view online" feature in class and project questions and solutions on a screen or interactive whiteboard to make class time more interactive and productive.

Display questions one at a time, and reveal steps to help students work through problem sets individually or collaboratively.




**Access your eSolutions Manual anytime and anywhere using ConnectED or ConnectED Mobile.**

## The eSolutions Manual features:

- All questions from the Student Edition.
- The flexibility to show answers, solutions, both, or neither.
- The ability to make customized worksheets from questions in the Student Edition, using evens, odds, or all problems.

# EFFECTIVE RESULTS...

## To support student success

**Easy-to-use eAssessment and reporting tools equip you with the data you need to make informed instructional decisions and keep students engaged.**

- **eAssessment** supports diverse types of evaluations and includes online scoring and report generation for digital and/or print distribution.
- **LearnSmart®** an interactive and adaptive learning system, effectively differentiates and supports struggling and advanced learners alike.
- **Professional Development** resources including pertinent information on new science standards and implementation best practices are available to you at point-of-use.

# Turn Students into Star Performers

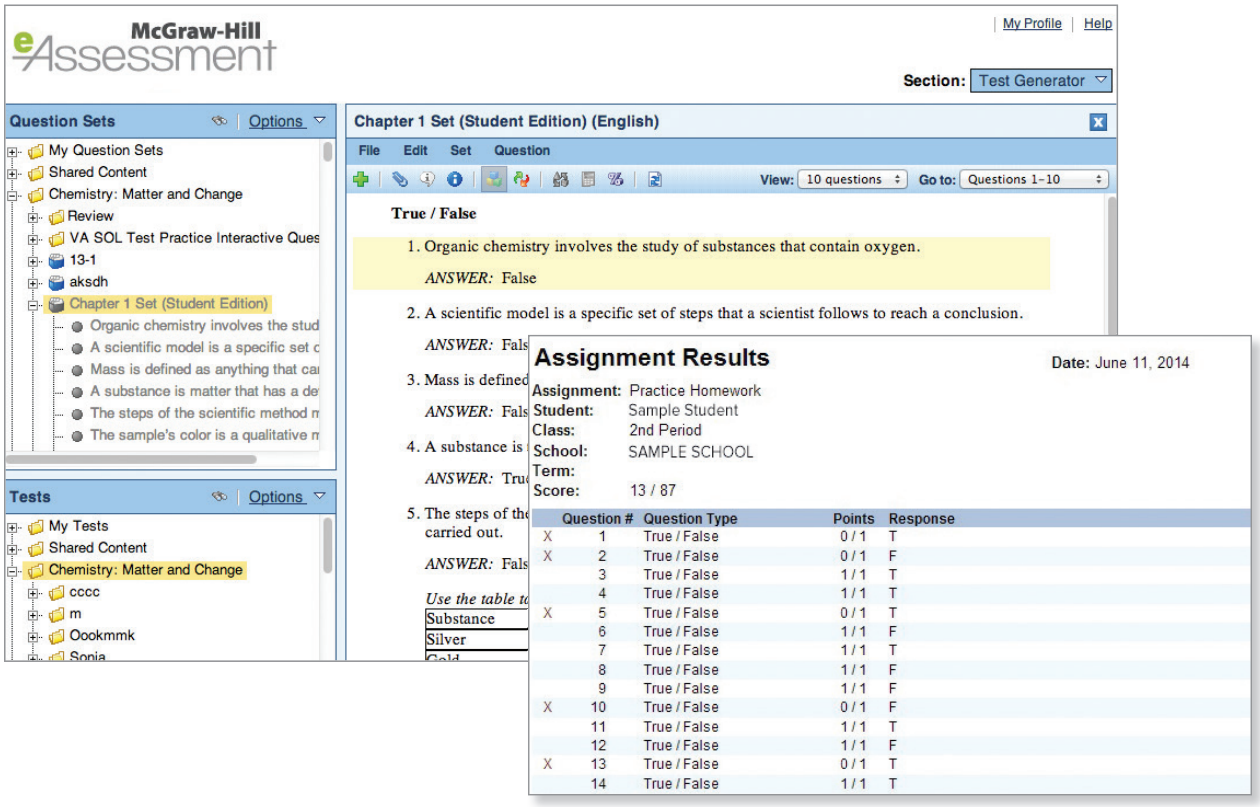
Turn your classroom into a chemistry success center with **eAssessment**. This robust resource gives you powerful tools to assess student progress and make data-driven instructional decisions.

The **eAssessment** reporting feature means you'll always have access to valuable data on individual students and whole classes to help you differentiate and support student mastery of concepts appropriately.

**Identify students with knowledge gaps to make data-driven instructional decisions with eAssessment.**

### Other features of eAssessment to help increase your efficiency:

- Question Bank with questions organized by strand, subject, and lesson.
- Assessment creation or customization of premade assessments.
- Report generation on proficiency and accuracy.



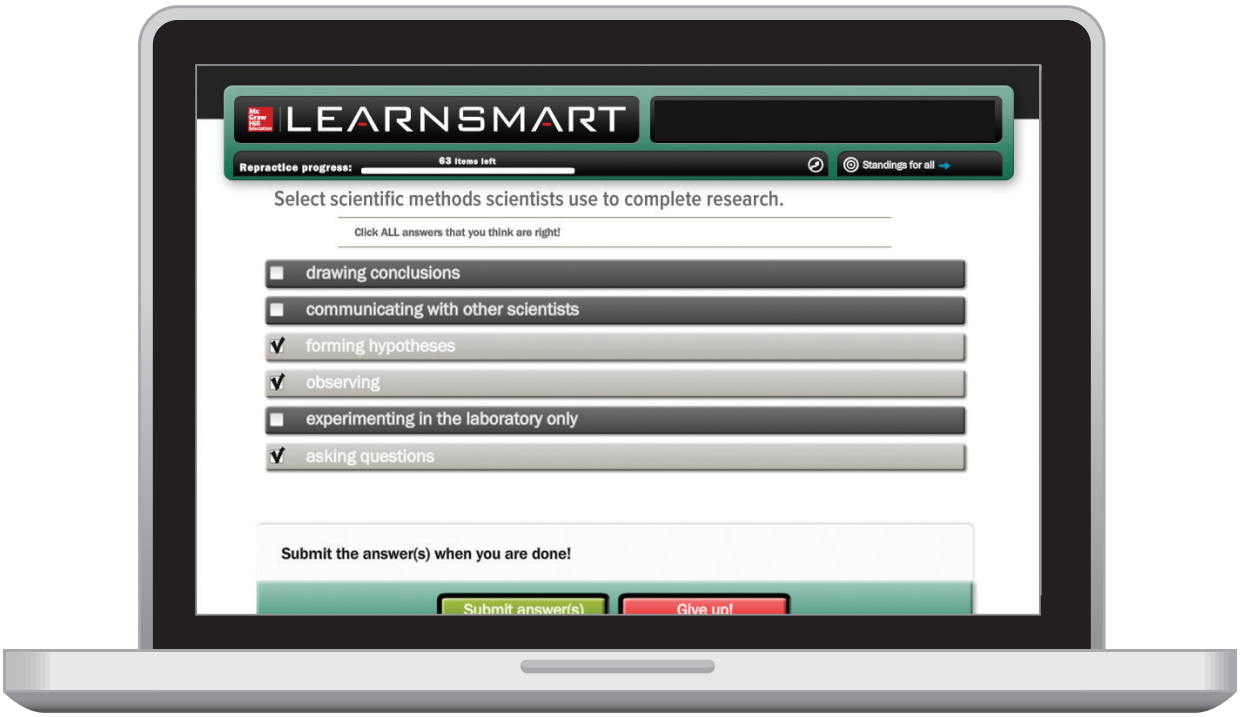

**eAssessment suite collects valuable data for every student and the class.**

# Increase Knowledge Retention

Increase retention of material, improve students' performance, and make your class more interactive and productive with proven adaptive learning system, ***LearnSmart***®.

As an interactive and adaptive learning system, ***LearnSmart***® is designed to help students learn faster, study more efficiently, and retain more knowledge for greater success. Both dynamic and progressive, ***LearnSmart***® adjusts chemistry concepts to align with each student's progress, based on their demonstrated skill and performance.

No two students learn the same way. ***LearnSmart***® personalizes content for each student's unique learning needs.




## Pinpoint knowledge gaps for individual students and across classes.

Empower students to personalize their learning experience with optimal learning paths so they spend more time on what they don't know with ***LearnSmart***®.

- Practice of basic chemistry concepts to improve recall and application before moving on.
- Additional exposure and increased practice to master new concepts.
- Presentation of concepts individual students struggle to master.

# Transform Your Classroom

In just a few clicks, you can quickly access relevant, timely, and ongoing **Professional Development** videos and webinars available to you, on-demand.

Directly embedded in *Chemistry Matter and Change* is your interactive professional learning program. Learn how other science educators have successfully implemented the program and increase your awareness of new science standards.

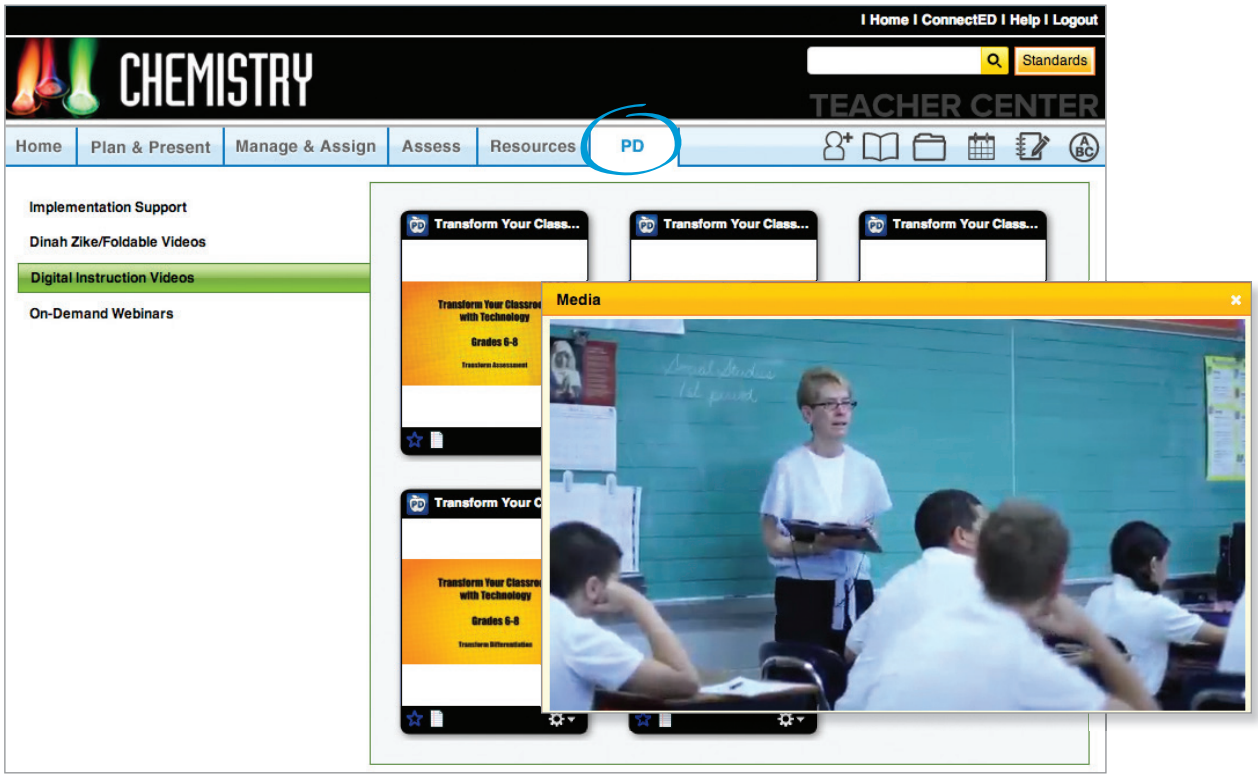
Customized, comprehensive, and expertly-crafted solutions translate into meaningful program success.

### Relevant Resources for science educators.

Rich, web-based resources include modeled classroom instruction videos, implementation support, technology resource optimization, and professional learning community support.

### Use the ConnectED, **Professional Development** tab to access on-demand webinars and these free video libraries:

- Dinah Zike/Foldable Videos
- Mathematical Practice Videos
- Pedagogical/Instructional Support Videos
- Digital Instruction Videos
- STEM Videos



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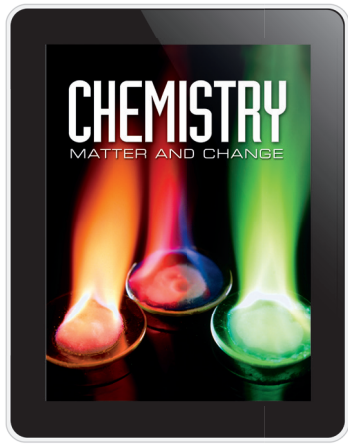


Sample and Discover Online

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