Mc Graw Hill Education

Program Overview

INTEGRATED iSCIENCE

GLENCOE

COURSE 2

Ease the Transition to Next Generation Science!

Whether your district has already adopted Next Generation Science Standards (NGSS) or is considering adopting them or any other new standards, ***Glencoe iScience*** ensures a seamless transition.

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!

We deliver to you the most effective, innovative, and inspiring middle school science curriculum that meets both NGSS and local science standards. Whether you're looking for a hybrid digital-print or a digital-first program, McGraw-Hill Education is your trusted advisor.

With *Glencoe iScience* you are equipped to:

- Meet science standards **Performance Expectations** (PEs)
- Integrate **Science and Engineering Practices** into your science classroom
- Apply the **Disciplinary Core Ideas** (DCIs)
- Correlate your lessons to **NGSS**

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

McGraw-Hill Education: Our tools, platforms, and services are focused on serving the needs of educators and learners through our purposeful technology, proven differentiated pedagogy, and unmatched professional development.

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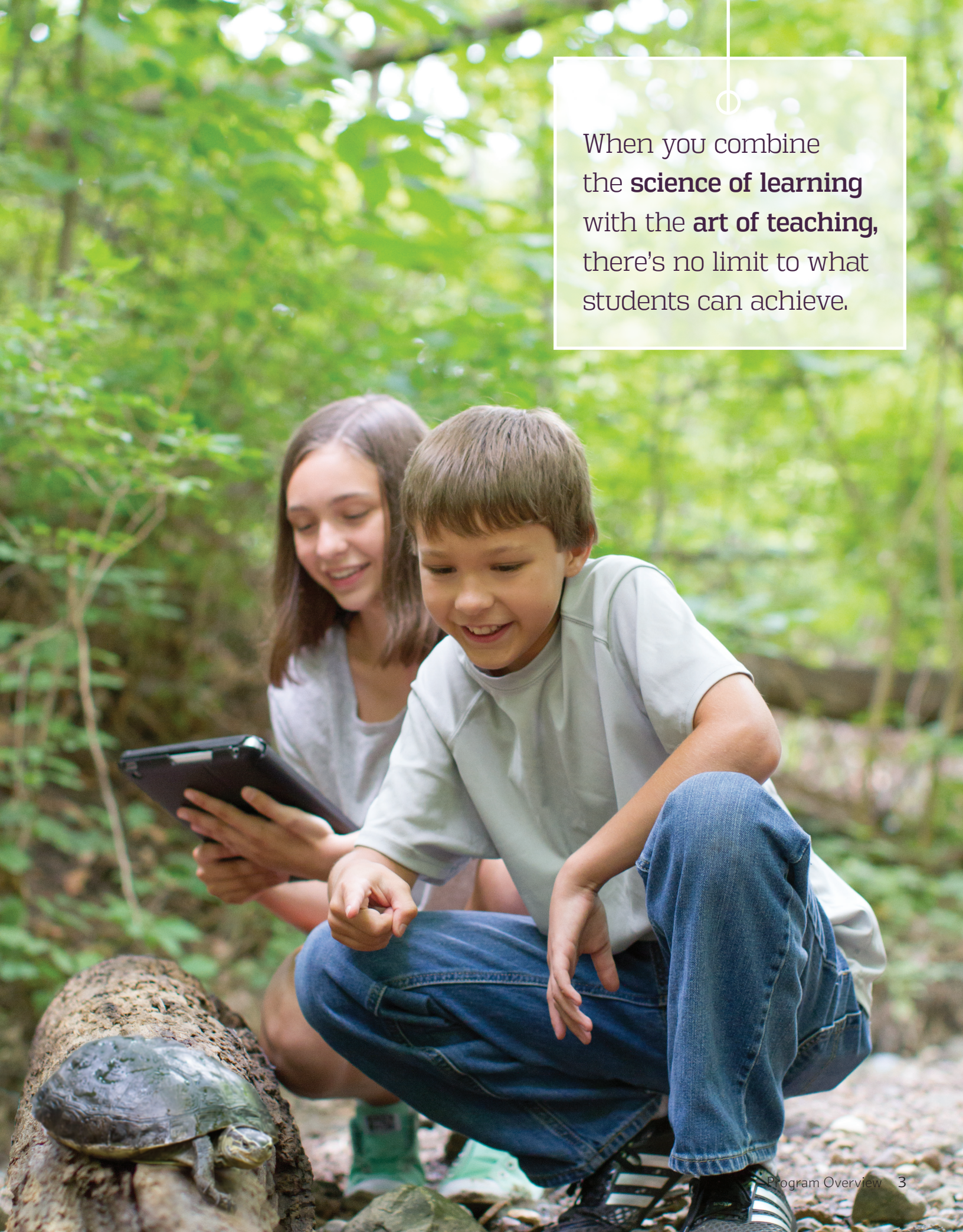


When you combine the **science of learning** with the **art of teaching,** there's no limit to what students can achieve.

RAMP UP THE ENGAGEMENT...

To create memorable learning experiences.

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

Mc Graw Hill Education connectED

ConnectED is your digital teaching platform making it easy and convenient to customize lessons, review assignments, and communicate with students.

Plan, Teach, and Assess with *ConnectED*.

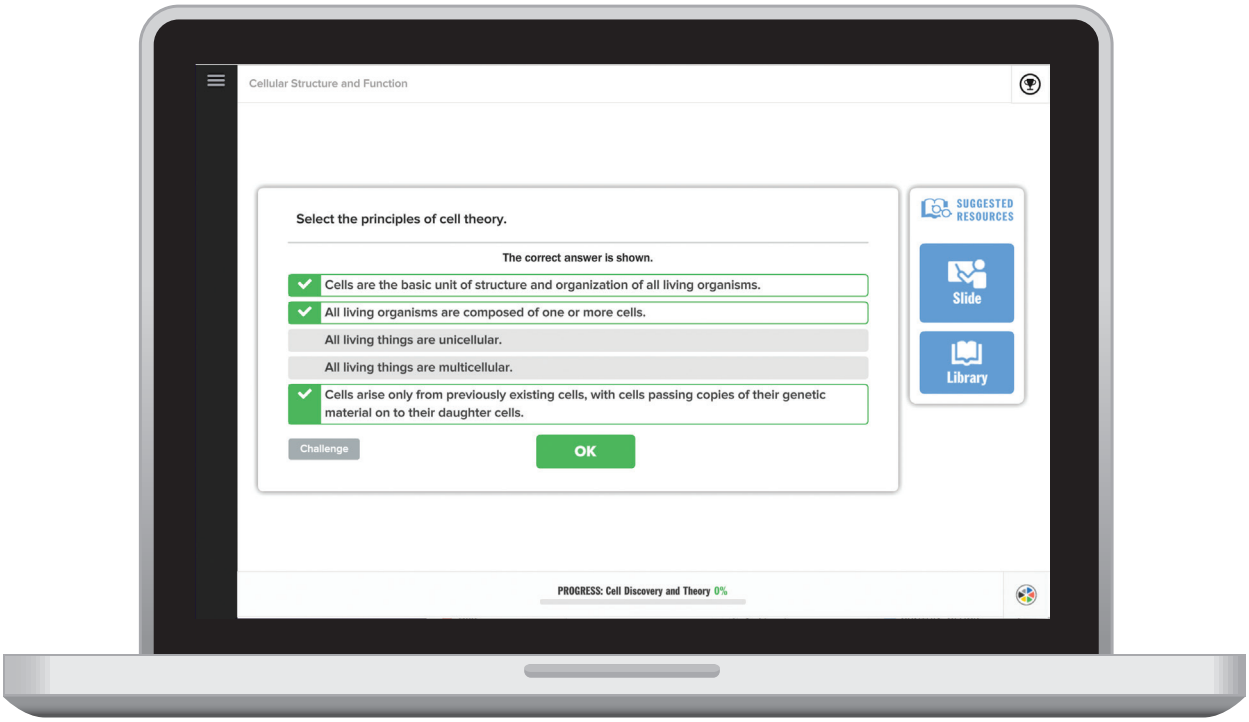
Increase Knowledge Retention with LEARNSMART®.

The ***LearnSmart***® adaptive learning engine with ***SmartBook***® gives every student a unique learning path and every teacher the power to reach all students in class.

SmartBook is an eBook whose text is fully integrated with ***LearnSmart*** technology. As a student reads, this technology determines precisely which learning objectives he/she understands and which ones he/she struggles with, highlighting the most critical content for the student to read next.

Learning Resources close knowledge gaps by immediately clarifying the concepts the student finds most challenging.

The personalized study resources your students need today to master state assessment tomorrow



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 science 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

TIME SAVING TECHNOLOGY...

To optimize your productivity

Give your students the resources they need on the go! The *student eBook* helps students turn science 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 science as-it-happens with the ***student eBook*** which learners can access anytime and anywhere using the Open eBook icon.

Plan and Prepare On-The-Go

The ***ConnectED Mobile App*** gives access to your ***iScience*** program including your ***student eBook,*** planning tools, reference materials, and other program resources. ***ConnectED Mobile*** is available on select Chromebook, iOS, and Android™ devices.

Use the *ConnectED Mobile App* to:

- Access all the courses available to you in ***ConnectED.***
- Download ***student eBook*** for use offline, whenever you need it.
- Review lesson plans from the Plan & Present tab from the ***ConnectED Teacher Center*** dashboard.
- Manage the content you download to the app.
- Retrieve a comprehensive list of resources from the Resource tab from the ***ConnectED Teacher Center*** dashboard.

Real-World Connections

Help students build confidence and keep them motivated lesson-to-lesson with engaging **Project-Based Learning Activities (PBLs)** to deepen their understanding of science content through real-world applications. PBLs integrate traditional science with engineering content.

With PBLs you can help students develop:

- Problem-solving skills
- Engineering design process understanding and application
- 21st century research competency
- Confidence, motivation, and excitement about science

Truly 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 as they are introduced.

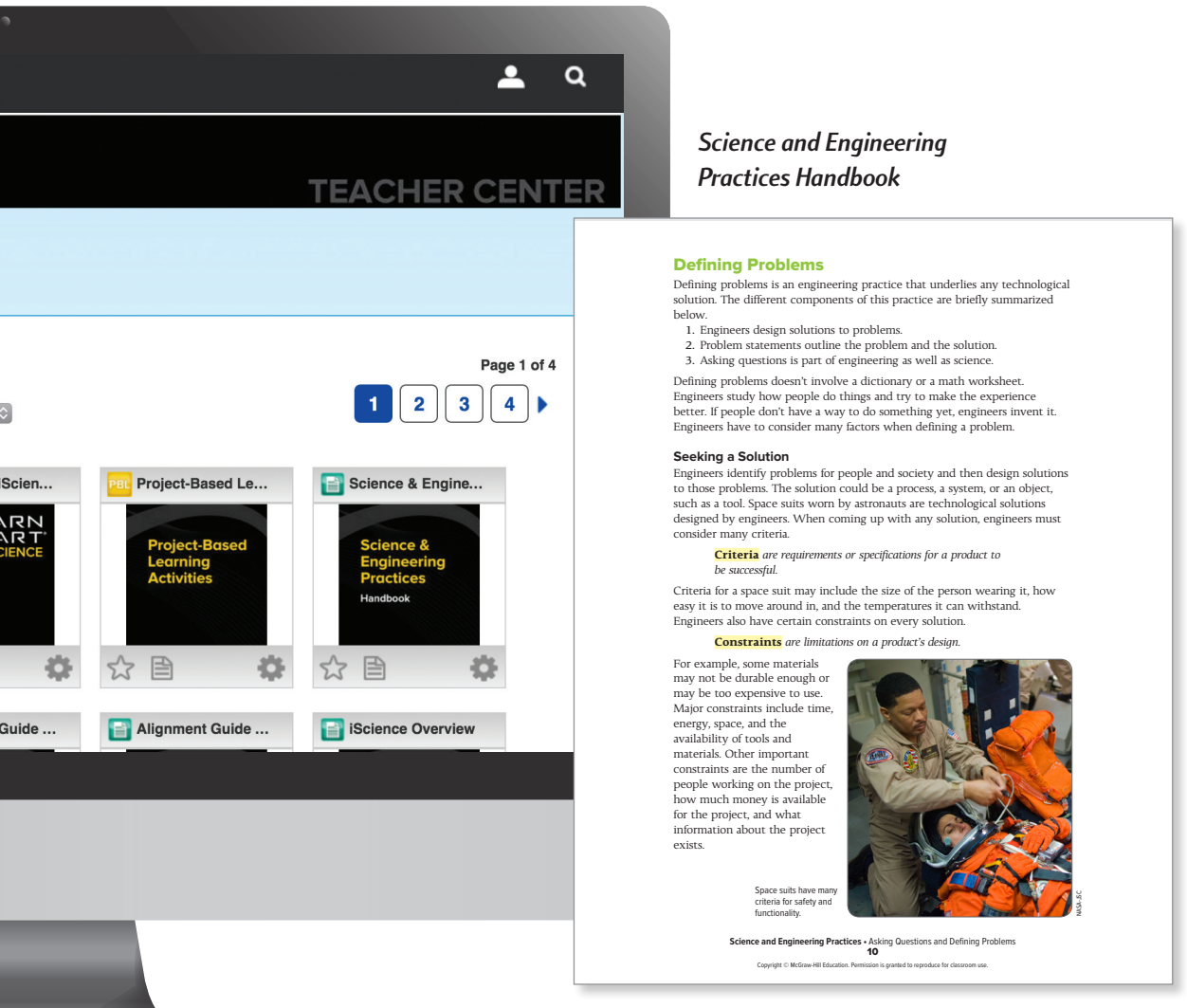
Be confident helping students achieve more!

Use the ***Science and Engineering Practices Handbook*** to introduce practices to students and support their scientific investigations and engineering projects.

This online reference book is searchable and provides students with background information, definitions, examples, and Quick Practice activities to stimulate their learning through practice.

The framework for K–12 Science Education and new science standards calls for educators to build science knowledge around three dimensions:

- Science and Engineering Practices
- Crosscutting Concepts
- Disciplinary Core Ideas (content) in four disciplinary areas: Life Sciences, Physical Sciences, Earth and Space Sciences, and Engineering, Technology, and Applications of Science



Science and Engineering Practices Handbook

Defining Problems

Defining problems is an engineering practice that underlies any technological solution. The different components of this practice are briefly summarized below.

1. Engineers design solutions to problems.
2. Problem statements outline the problem and the solution.
3. Asking questions is part of engineering as well as science.

Defining problems doesn't involve a dictionary or a math worksheet. Engineers study how people do things and try to make the experience better. If people don't have a way to do something yet, engineers invent it. Engineers have to consider many factors when defining a problem.

Seeking a Solution

Engineers identify problems for people and society and then design solutions to those problems. The solution could be a process, a system, or an object, such as a tool. Space suits worn by astronauts are technological solutions designed by engineers. When coming up with any solution, engineers must consider many criteria.

Criteria *are requirements or specifications for a product to be successful.*

Criteria for a space suit may include the size of the person wearing it, how easy it is to move around in, and the temperatures it can withstand. Engineers also have certain constraints on every solution.

Constraints *are limitations on a product's design.*

For example, some materials may not be durable enough or may be too expensive to use. Major constraints include time, energy, space, and the availability of tools and materials. Other important constraints are the number of people working on the project, how much money is available for the project, and what information about the project exists.

Space suits have many criteria for safety and functionality.

NASA JSC

Science and Engineering Practices • Asking Questions and Defining Problems
10

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Science in Action

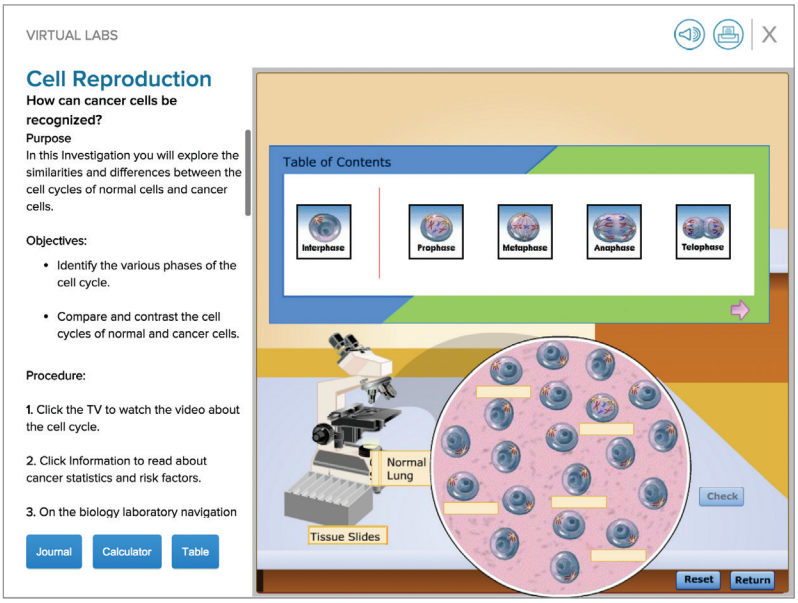
Glencoe iScience offers you diverse lab opportunities to deepen your students' understanding of science by experiencing it and experimenting with science first-hand!

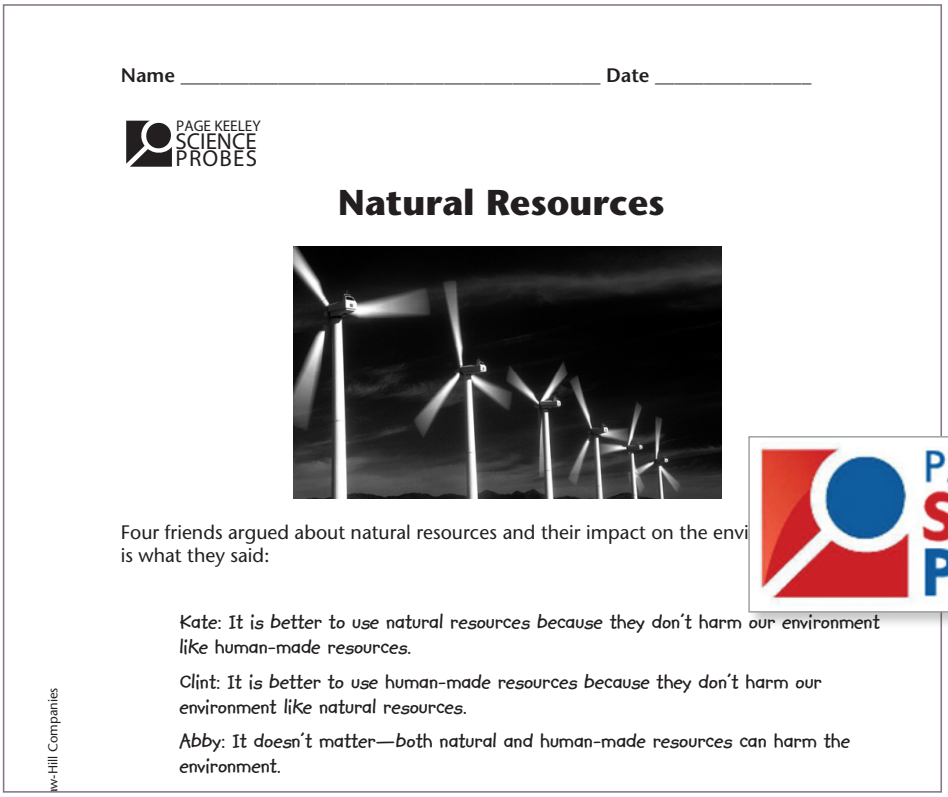
Use these lab activities included in every chapter to bring science to life for your students.

- Launch Labs
- MiniLabs
- Skill Practice
- Inquiry Labs

More lab resources are available to you through ConnectED, including:

- Virtual Labs

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PAGE KEELEY SCIENCE PROBES

Natural Resources

Four friends argued about natural resources and their impact on the envi
is what they said:

Kate: It is better to use natural resources because they don't harm our environment like human-made resources.

Clint: It is better to use human-made resources because they don't harm our environment like natural resources.

Abby: It doesn't matter—both natural and human-made resources can harm the environment.

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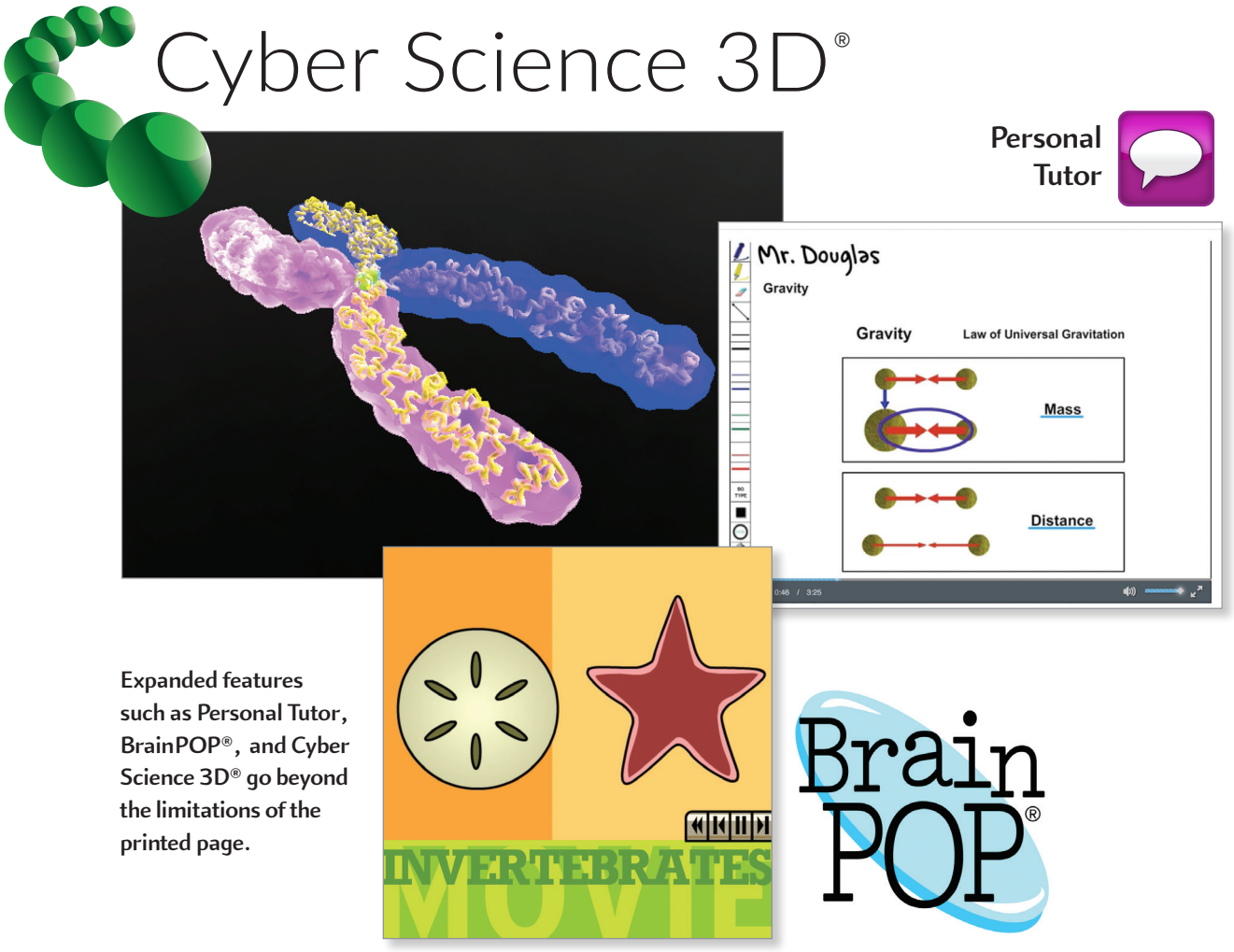
PAGE KEELEY SCIENCE PROBES

Page Keeley Science Probes **will help uncover student misconceptions.**



Expanded features such as Personal Tutor, BrainPOP®, and Cyber Science 3D® go beyond the limitations of the printed page.

Apply Interactive Practice

Students have their own digital learning platform called the ***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.

Use expanded ***Student Center*** features such as **Personal Tutor, BrainPOP®**, and **Cyber Science 3D®** videos to go beyond the limitations of the printed page and bring science into your students' lives like never before.

EFFECTIVE RESULTS...

To Motivate Student Achievement

Easy to use *eAssessment* and on demand Professional Development resources are embedded in your McGraw-Hill Education *iScience* program and accessible to you at point of use.

- ***eAssessment*** supports diverse types of evaluations and includes online scoring and report generation for digital and/or print distribution.
- **Professional Development** resources include pertinent information on new science standards and implementation best practices, available 24/7.

Take Student Achievement to the Next Level with eAssessment

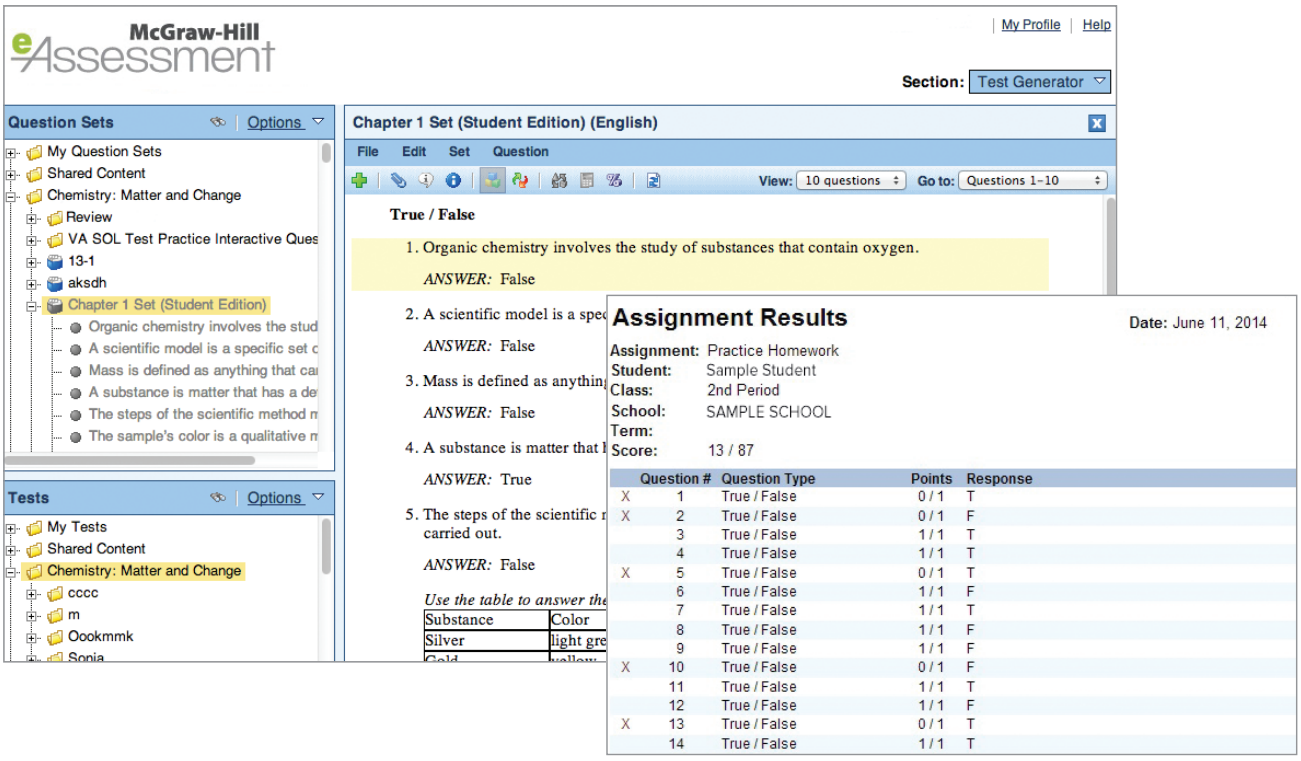
Assessment is a key element to teaching science. McGraw-Hill Education ***eAssessment*** supports you from diagnostic to summative evaluations, giving you the ability to monitor students' progress, make data-driven instructional decisions, and motivate your students' academic achievement.

Simplify Data-Informed Decision Making

Use ***eAssessment*** to create tests and other assignments that can be delivered to students digitally or in print.

Maximize *eAssessment* by generating reports and beneficial data

The ***eAssessment*** reporting feature gives you 24/7 access to valuable data on individual students and whole classes to help you differentiate and support students more effectively.



Other features of *iScience eAssessment* include:

- Question sets with questions organized by chapter and lesson
- Assessment creation
- Report generation on proficiency and accuracy
- Assignment time restrictions and multiple attempts at assignment completion
- Access to ready-made assessments
- Assess using premade diagnostic and summative evaluations

Practical Professional Development

The right tools make all the difference in getting your work done efficiently. Seamlessly embedded digital resources and the convenient print materials of ***Glencoe iScience*** gives you everything you need to make science relevant, rigorous and possible for every student. Designed on the principles of effective professional development (PD), ***Glencoe iScience*** PD includes self-paced courses, Foldables® and NGSS videos, and on-demand webinars.

Get Started

Online, self-paced Quick-Start course designed to get teachers and administrators up and running fast.

Learn More

Online Implementation course designed to help teachers connect professional learning to the classroom.

Watch It

Videos from Dinah Zike and on-demand webinars and videos support great instruction in the classroom.

Where and When You Need It

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 ***Glencoe iScience*** is your interactive professional learning program. Learn how other science educators have successfully implemented the program and increase your awareness of new science standards.

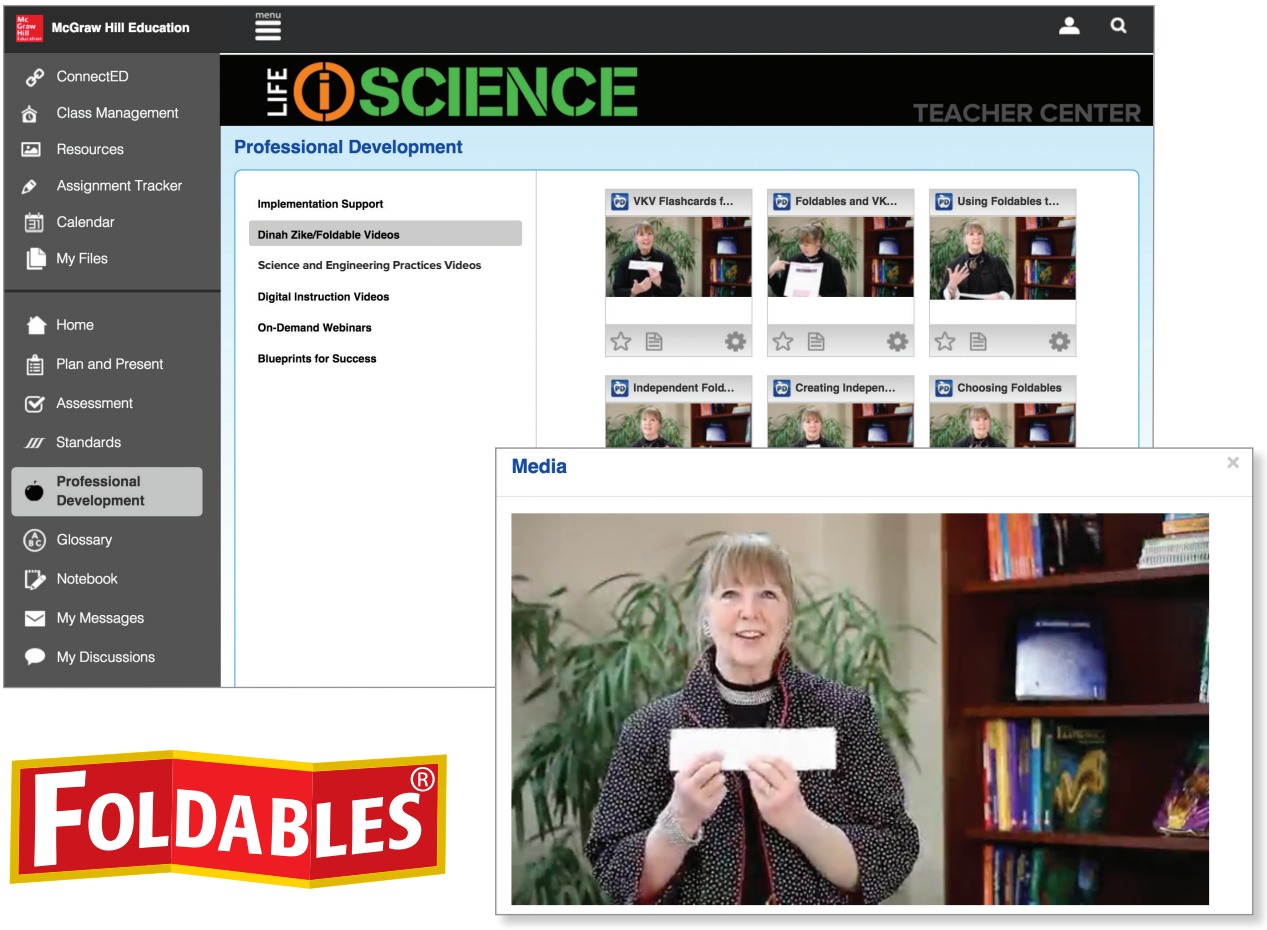
> Customized, comprehensive, and expertly-crafted solutions translate into meaningful program success.

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 these free video libraries:

- Dinah Zike/Foldable Videos
- Science and Engineering Practice Videos
- Pedagogical/Instructional Support Videos
- On-Demand Webinars



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