



Pearson

K-5 PROGRAM OVERVIEW

elevate<sup>science</sup>

TAKE **SCIENCE** TO THE NEXT LEVEL



# The Next Level of Inquiry and Wonder

Motivate every student to reach higher and go further. **Elevate Science** is a complete K–5 science program, including a blended print and digital curriculum, that elevates thinking, learning, and teaching.

## TAKE **SCIENCE** TO THE NEXT LEVEL

- Real-world, relevant, and interesting topics introduce the core ideas.
- Student-centered investigations utilize the science/ engineering practices.
- Problem-based learning promotes application and student understanding.

PRINT, DIGITAL,  
OR BLENDED  
LEARNING



## elevate<sup>thinking</sup>



Promote Investigation, Critical Thinking, and Analysis

- **Phenomena-based** Quests
- STEM and engineering activities
- Interdisciplinary connections



## elevate<sup>learning</sup>



Foster Three-dimensional Learning

- Encourages innovation, collaboration, and creativity
- Promotes understanding, application, and synthesis
- Fosters the use of claims, evidence, and reasoning



## elevate<sup>teaching</sup>



Transform Learning and Manage Changing Classrooms

- Scaffolded questions guide discussions and promote thinking
- ELD and Differentiated Instruction strategies
- Supports the 5E Learning Model



## Promote Investigation, Critical Thinking, and Analysis

Exploration is the heart of science. The Quest problem-based activity anchors each topic. Students “figure out” the problem’s solution as they navigate the topic’s lessons. It’s real science with engaging phenomena. Students apply their knowledge and skills to **master the new science standards**.

### Phenomena-Based Learning



### ▲ QUEST FOR IDEAS, ANSWERS, AND EVIDENCE

“Find the right mix—and step on it!” In this Quest, students engineer a stepping stone. Each topic centers on a real-world, problem-based activity to make learning fun.



## Quest Connection



Do you think that color and texture are important properties of a stepping stone? Explain your answer.

---



---



---

## QUEST CONNECTIONS

Learning is structured and intentional. Students explore the Quest phenomenon throughout the lessons.

## QUEST CHECK-INS

What materials are needed to solve the Quest? Check-Ins ask students to reflect on the problem as they design their solutions.



## Quest Findings

STEM

### Find the Right Mix—and Step on It!

*How can we mix ingredients to make a model stepping stone?*

#### Identify Factors and Retest

When you made the dough, you provided criteria. With a group, discuss if your model stepping stone met the criteria you set.

Discuss how you would change your model to improve it. Write a procedure for testing your improved model. Retest your model.

#### Construct Explanations

Did the change to your model improve it? How do you know?

Do you think the same change to the concrete stepping stone would result in a better product? Why or why not?

**INTERACTIVITY**  
Organize data to support your Quest Findings.

#### Procedure to Retest

---



---



---



---

## QUEST FINDINGS

At the close of each topic, students synthesize information and construct explanations as they complete their Quest.



# The Next Level of **STEM** Education

*Elevate Science* connects Science, Technology, Engineering, and Mathematics in every topic, at every grade. STEM activities fuel innovation, problem solving, collaboration, and reasoning—skills for future careers.

## **Quest Kickoff**

**STEM**

### Find the Right Mix— and Step on It!

How can we mix ingredients to  
make a model stepping stone?

#### **STEM QUEST KICKOFF**

Students use STEM practices to solve the Quest problem in each topic.

**STEM**

**uConnect Lab**

### What happens to mass when objects are **mixed**?

Materials scientists investigate how substances can mix together by performing experiments and collecting data. How can you investigate

**STEM**

**Quest Check-In**

**Lab**

### How can you compare the properties of **matter**?

The work of materials scientists involves understanding how the properties of materials vary. How can you learn about the properties of



#### **STEM LABS**

Make STEM hands-on! STEM Labs let students experiment, model, design, and construct.



### STEM Connection

When a building is constructed, engineers and builders use different materials to put it together. Modern buildings over a few stories tall are often built using steel beams and concrete. These materials are strong and durable. Even if the materials are strong, people may want to remove a building. It may not be designed for modern uses. A taller or more modern building design may use the land better. When a building is knocked down using heavy equipment, the material it is made of does not change. The concrete is still concrete even though it is broken into small pieces. The beams are still made of steel even if they are bent and crumpled. The materials do not change, but their shape changes.

### STEM CONNECTIONS

STEM Connections help students think critically about real-world problems.

### STEM Engineering Reader

## Parents and Offspring

Catherine Little



### STEM ENGINEERING READER

Share engineering experiences with young students using these leveled readers.

### ENGINEERING CONNECTION

Integrate science and engineering practices throughout the curriculum.

### ENGINEERING Connection

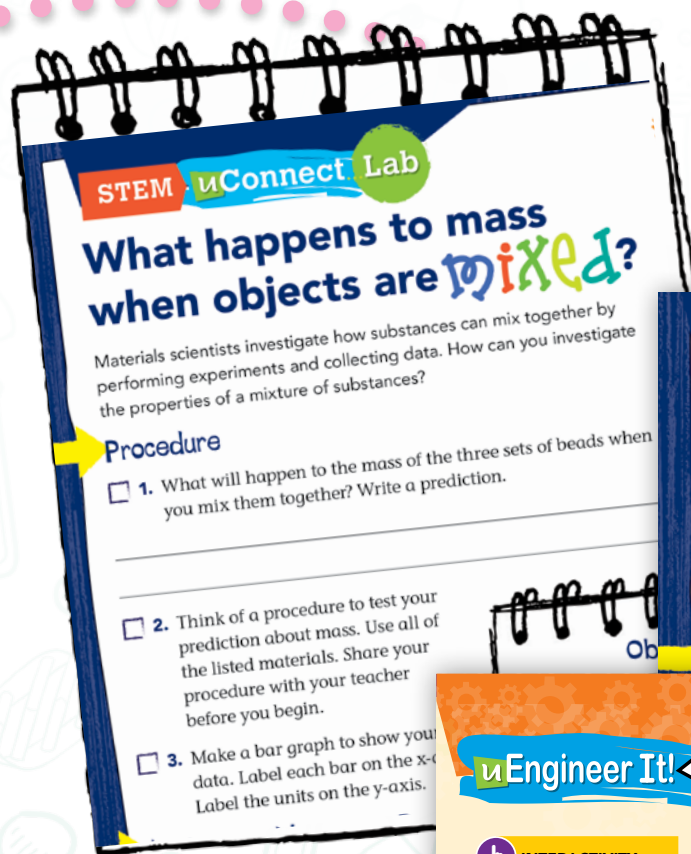
Salt is a natural resource that people need in their diets. The salt that you use in your kitchen may come from a salt deposit. In these deposits, the salt is often a large solid mass, like rock. People use tools to break it apart into smaller pieces. Even these small chunks are too big to use on your food. Sometimes the salt is crushed small enough to pour from a saltshaker. Another way to break the salt into smaller pieces is by using a salt grinder.

**Predict** What would happen if you could keep grinding the salt particles.



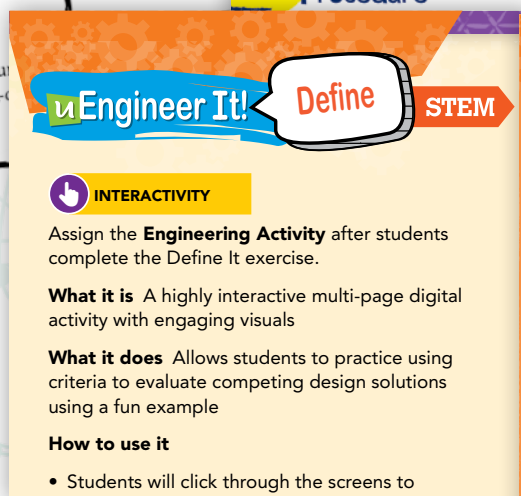
## Focus on the NEW Standards and the Science/Engineering Practices

The new science standards emphasize the practice of scientific inquiry. *Elevate Science* helps shift the cognitive load from guided inquiry to student-initiated experiences. Explicit strategies vary the guidance based on student needs.



### uCONNECT LAB

Students engage with the phenomena and connect it to the disciplinary core ideas.



### uENGINEER IT! LAB

Students engage in engineering practices to design, build, and apply core ideas to new situations.

### uINVESTIGATE LAB

Students investigate the core ideas to build a strong understanding of the topic's concepts.



## ▼ CLASSROOM MATERIALS KITS

Organized equipment kits provide the materials to support all of the program labs.



## ▼ uENGINEER IT! MAKER CRATES

Encourage creative building and tinkering. These crates contain materials to support and extend the uEngineer It! Labs.



Materials are packaged to facilitate easy and efficient set-up

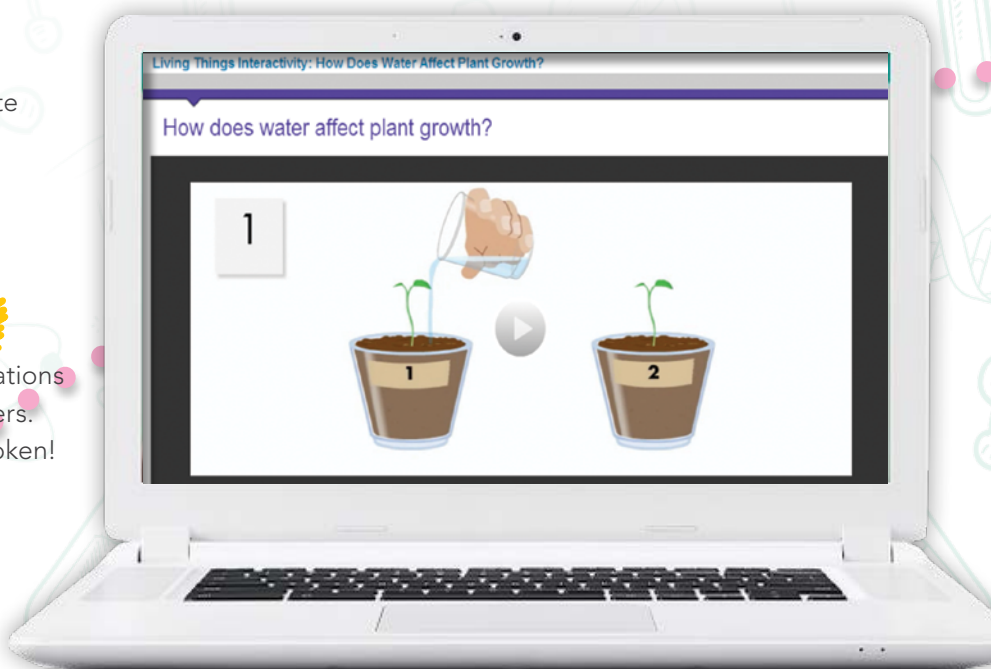
## littleBits

### littleBITS EXTENSION KITS

Inspire inventors! Students can make programmable robots, vehicles, and machines using simple, modular electronics.

## ▶ VIRTUAL LABS

Virtual science simulations engage digital learners. Plus nothing gets broken!





# The Next Level of Integration

Raise the bar on ELD/Literacy and Mathematics Standards.

**Elevate Science** helps students think about, read about, write about, and talk about science. By integrating **phenomena** with these crucial skills, you'll 'elevate' results in all disciplines.



## ELD/Literacy Standards

### Use Evidence from Text

When you read carefully, you look for evidence. Use these strategies to help you look for evidence.

- Do a first read.
- Do a close read.
- Underline important facts.

Read the text to find out how materials scientists can help remove oil pollution from the environment.

#### Oil Spills and Aerogels

Small amounts of oil end up in streams and threaten the environment. One way to clean up this oil is with materials called aerogels. Aerogels are solids made from gels.

To make aerogels, materials scientists remove the liquid from the gel and replace it with gas. This process changes the physical properties of the gel. Aerogels are nicknamed "frozen smoke" because they are see-through and are the world's lightest solids. Some aerogels are very absorbent. Materials scientists tested the ability of these aerogels to clean up oil by mixing them with water and corn oil. In one investigation, the aerogel absorbed seven times its own weight in oil!

**READING CHECK Use Evidence from Text** Why do you think aerogels could be used to clean up oil spills in your community? Underline the important facts from the text that support your claim with evidence.

### Literacy Connection

#### GAME

Practice what you learn with the Mini Games.



### LITERACY CONNECTION

Every topic targets a critical literacy skill, such as using evidence from texts to make well-defended claims.

### LITERACY TOOLBOX

Reminders throughout the topic reinforce the target literacy skill and help students read closely.

### Literacy Toolbox

#### Use Evidence from Text

Water is formed by the combination of atoms of two different elements—hydrogen and oxygen. Is the smallest particle of water an atom or a molecule? Why do you think so?

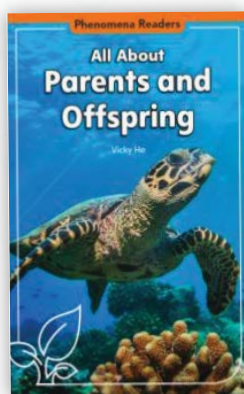


## ✓ READING CHECK

Have volunteers share the text evidence they used to support what they think would happen if their community used aerogels to treat an oil spill.

## ◀ READING CHECK

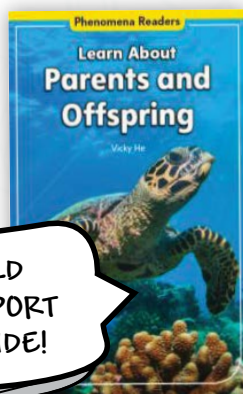
Formative assessment opportunities help you provide feedback to improve students' learning.



Below



On



Above

ELD  
SUPPORT  
INSIDE!

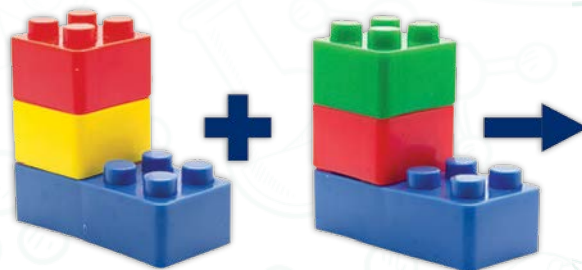
## ◀ LEVELED READERS

The **Phenomena Series** leveled readers teach the same concepts at different Lexile levels. Also includes a STEM/Engineering reader for every topic.

## Mathematics Standards

### Math ▶ Toolbox

**Use Models** Models can help you represent thoughts or ideas. How can you use the blocks in the image below to explain the idea that particles rearrange when they form new substances?



## ▲ MATH TOOLBOX

Bring math relevance and depth to science! Integrated math practices apply concepts to real situations.

### STEM Math Connection

#### Lines of Symmetry

Something has symmetry if one side matches the other side when you draw a line to divide it in half. Almost all animal bodies show some form of symmetry.

**Identify** Simple shapes, such as the circle, rectangle, and triangle, have symmetry. Draw lines of symmetry on the three shapes.



**Identify** It is easier to find out whether something in a picture is symmetrical by drawing a line. Draw a line through the center of each animal to show its symmetry.





# The Next Level of Assessment and Differentiation

In a differentiated classroom, all learners have a better chance of mastering the new science standards. *Elevate Science* helps teachers make strong connections between assessment and differentiated instruction.

## Assessment for Three-Dimensional Learning

### LESSON CHECK

Formative assessment in every lesson helps you monitor and support student progress.

#### Lesson 1 Check

##### Question 1

If students do not understand how to read the table, **then** review the properties of each substance individually. Help students identify similarities and differences among the three substances.

##### Question 2

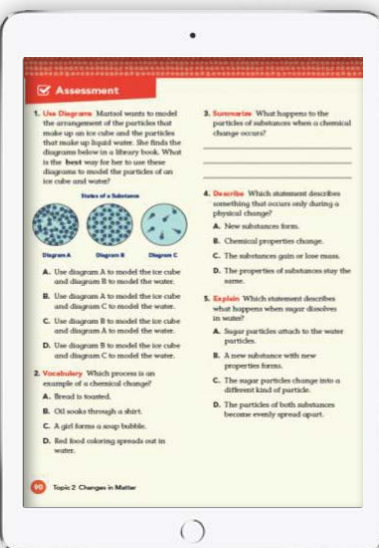
This question assesses student understanding of the lesson objective: Explain that matter is made of tiny particles too small to be seen.

If students have difficulty explaining atomic theory, **then** remind students to think about what they learned about atoms and molecules. Remind students that matter is made of particles too small to be seen, but that scientists use special tools to observe this matter.

Evidence-Based Assessment	
A strong student can answer 7 items of an unlabeled solution of water, liquid in a glass jar. The student is told that the mass of the substance is 100 g. The student is told that the substance is water. The student is told that the substance is water. The student is told that the substance is water.	
Properties of Matter	Observed Characteristics
Color	White
Odor	Colorless
Taste	Highly sweet
Boiling point	100°C
Freezing point	0°C
Phase change	From liquid to solid (ice) and from solid to liquid (melt)

### EVIDENCE-BASED ASSESSMENT

Put students on the path to success with practice aligned towards demonstrating their mastery of science concepts.



### END-OF-TOPIC ASSESSMENT

Summative assessment at the end of each topic helps to refine teaching practices.



### PERFORMANCE-BASED ASSESSMENT

End-of-topic performance assessments allow students to demonstrate mastery of the new science standards.

## ELD Support ELD.K12.ELL.SI.1, ELD.K12.ELL.SC.1

**Reading** Use the "STEM Connection" paragraph to help students practice their English vocabulary.

**Entering** Ask students to identify words that describe who helps in building construction.

**Beginning** Have students identify the sentence that describes qualities of a good building.

**Developing** Have students identify the sentences that describe why a building may be removed.

**Expanding** Have students skim the text and tell a partner a sentence or two describing the broken-down pieces of building material.

**Bridging** Have students sketch the broken-down building material and building material.

### Scaffolded Questions

Use the following questions to assess students' **Depth of Knowledge** levels of understanding.

**Define** What is the atomic theory? **DOK1** (The atomic theory is the idea that everything is made of small particles.)

**Compare** How does the sand castle compare to the matter that makes it up? **DOK2** (The castle looks like one large object, but it is actually made up of lots of smaller pieces. Even the smallest grain of sand is made up of smaller particles that cannot be seen without special tools.)

**Assess** How does the atomic theory apply to other matter around us? **DOK3** (All matter is made up of particles that are too small to be seen.)

## ELD and Differentiation

### ELD SUPPORT

Integrate English language development for varying proficiency levels.

### SCAFFOLDED QUESTIONS

Reduce student frustration and help them focus on **Depth of Knowledge** (DOK).



### DEPTH OF KNOWLEDGE (DOK)

Multiple DOK level questions help students focus on the "Big Ideas."

### Differentiated Instruction

#### Support Struggling Students

Have students complete four vocabulary maps, one for each of the highlighted terms: *atoms*, *atomic theory*, *compound*, *molecule*. For each map, have students write a term in a circle and add rays out from the circle for writing definitions and examples. Then have students explain how all four words are related to each other.

#### Support Advanced Learners

Challenge advanced students to explore how elements are arranged on the Periodic Table of Elements. Have students predict why the periodic table is arranged in the way that it is. With a partner, encourage students to discuss if they are familiar with any of the elements on the table.

### Guiding Inquiry

If your students need more direction on this lab, use the following procedure.

1. Label each beaker Sugar, Salt, and Baking Soda. Fill each beaker  $\frac{1}{4}$  full with water.
2. Add 1 spoonful of sugar into the beaker labeled Sugar. Stir until the sugar dissolves. Repeat with the salt and baking soda. Use a different spoon each time. Record your observations.
3. Place the beakers in a sunny window. Leave the beakers uncovered to let the water evaporate.
4. Over the course of the next few days, record your observations. Each day, note any similarities and differences that you observe.

Students may also suggest using a hot plate to heat the beaker and boil the water to separate the sugar, salt, and baking soda.

### Focus on Next Gen!

**Asking Questions** As students consider how to design a stepping stone, challenge them to consider the importance of asking questions. Talk about why scientists and engineers should ask questions as they design things. Explain that some questions are more useful than others, but any question can lead to interesting answers and observations.

Have students make a list of questions they might need to answer before they begin the Quest, for example:

- What do I want to figure out about the design of a stepping stone?
- What do I know about stepping stones and their construction already?

Have students share their questions and keep them handy as they work through the Quest.

### DIFFERENTIATED INSTRUCTION

On-the-spot strategies help support struggling students and advanced learners.

### GUIDING INQUIRY

Find useful procedures to guide inquiry when more support is needed.

### FOCUS ON MASTERY

Help students achieve mastery by focusing on the Science and Engineering Practices.



## Transform Learning and Manage Changing Classrooms

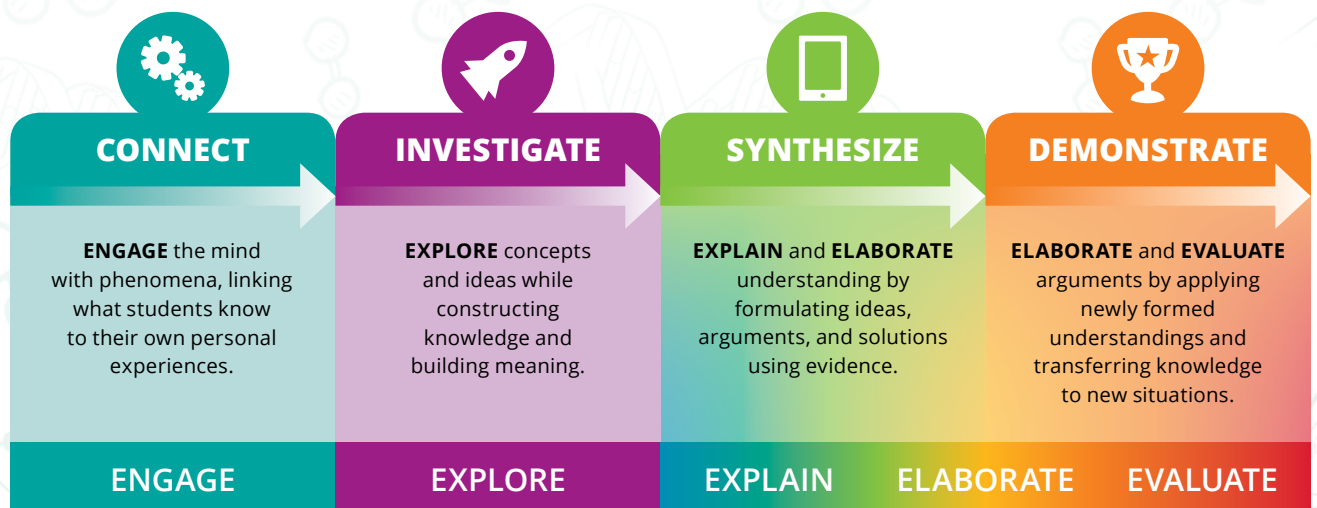
Feel confident teaching science! *Elevate Science* helps teachers create a learning culture that's nimble, personalized, and student-centered. The curriculum includes all needed resources to implement new science standards identified at point of use.

### Inquiry-Based Teaching

*Elevate Science* integrates 5E learning in a new CISD Instructional Model (Connect, Investigate, Synthesize, Demonstrate) and provides an instructional plan designed for today's blended learning environment. Students expand their current thinking as they investigate real problems, synthesize their knowledge in new situations, and demonstrate their understanding of core ideas.



### 5E Learning Intersects with 21<sup>st</sup> Century Competencies

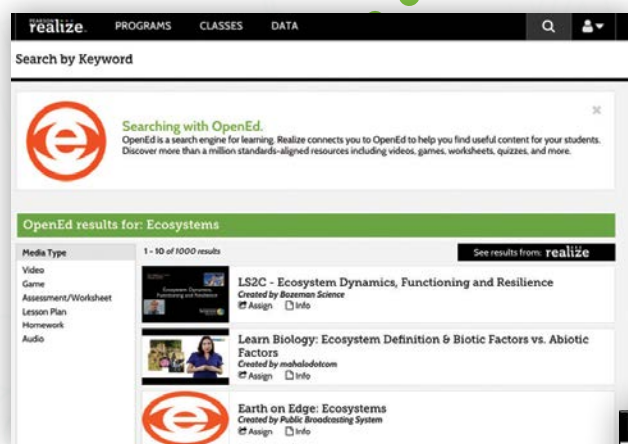
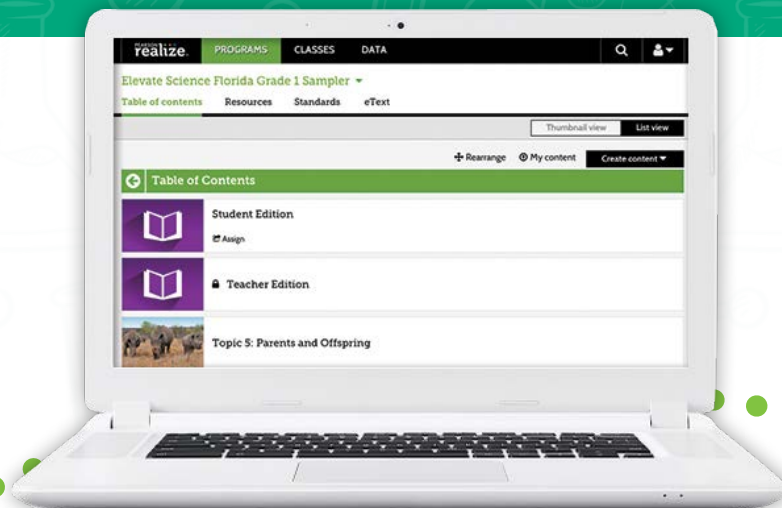


# Digital Power— Single Sign-on!

Log on to PearsonRealize.com

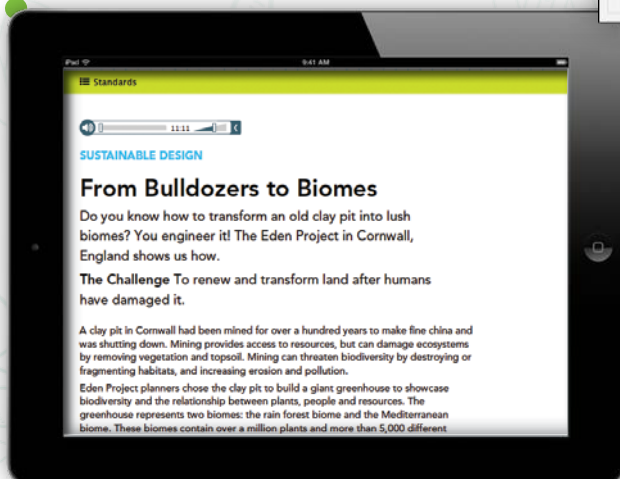
## TEACH THE STANDARDS

Search by Standard or keyword. It's simple and easy to access lessons, assignments, and tools.



## ACCESS STUDENT DATA

Check students' mastery of the new science standards. View progress, time spent on task, and assignments.



## MAKE IT YOUR OWN

Add Google docs and OpenEd resources! Modify content and assignments. Easily integrate your class rosters.

For a full description of our online resources, visit [PearsonSchool.com/ElevateSci](http://PearsonSchool.com/ElevateSci)



## WORK OFFLINE OR ONLINE

The Realize™ Reader eText lets students work offline. Everything stays in sync when reconnected to the web.

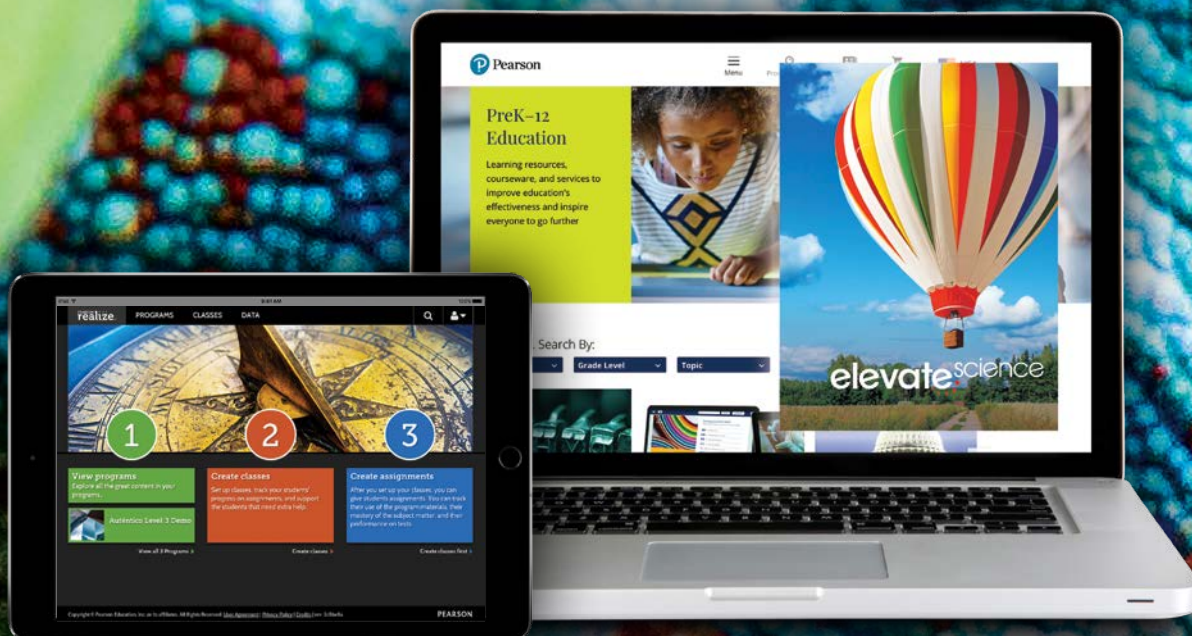


# elevate<sup>science</sup>

**TRY THE ONLINE PROGRAM!**

**PearsonRealize.com**

**User Name: ElevateSci Password: Pearson8**



**Go online to access your digital resources.**

**VIDEO  
eTEXT**

**INTERACTIVITY  
VIRTUAL LABS  
GAMES**

**WORKTEXT  
ASSESSMENT**



**PearsonSchool.com/ElevateSci**  
**800-848-9500**

Copyright Pearson Education, Inc., or its affiliates.  
All rights reserved.

**SAM: 9780134905136**  
**ADV: 9780134905389**

**Contact your Pearson representative to learn more.**

**[PearsonSchool.com/find-my-rep](http://PearsonSchool.com/find-my-rep)**

**Join the Conversation:**

**Twitter.com/PearsonPreK12**  
**Facebook.com/PearsonPreK12**

**Get Fresh Ideas for Teaching: [Blog.PearsonSchool.com](http://Blog.PearsonSchool.com)**