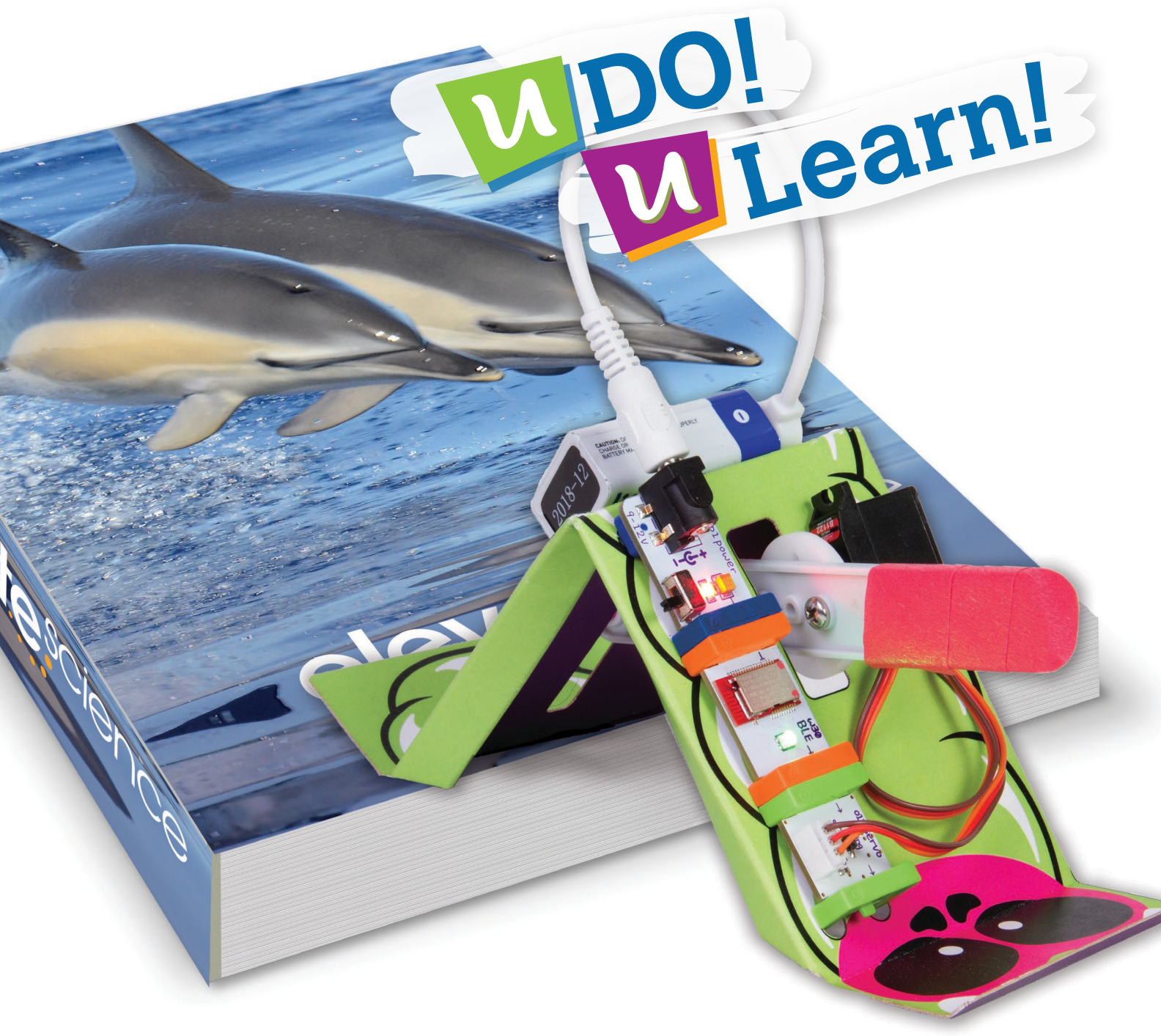
SAVVAS

PROGRAM OVERVIEW
GRADES K-5



elevate science

elevate science

uDo! uLearn!

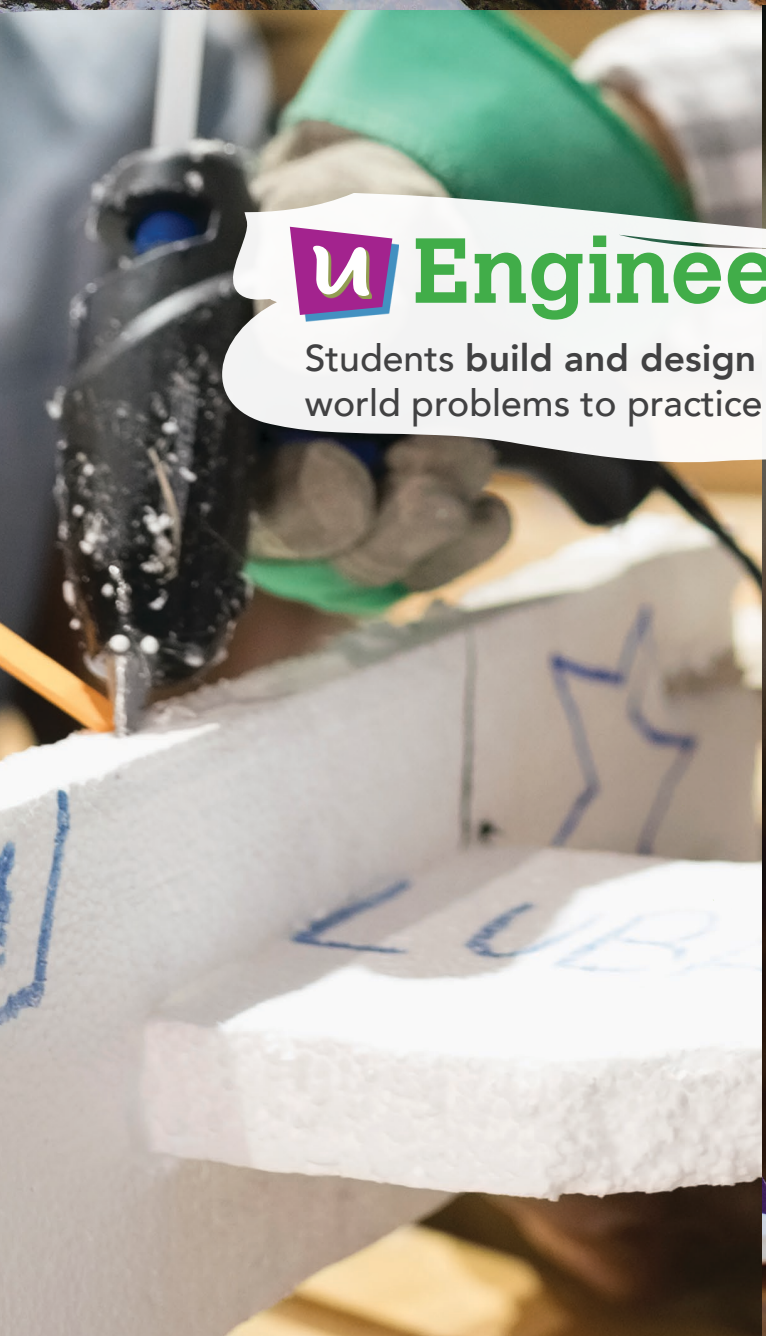
Let students experience the wonder of science—the doing, questioning, and digging. ***Elevate Science*** supports teaching the Next Generation Science Standards. Students investigate phenomena, engineer solutions, and demonstrate their understanding of key concepts. ***Elevate Science*** connects the heart of science knowledge with the science of "doing."

uDemonstrate

Students **exhibit proficiency** in key concepts, and science and engineering practices.

Investigate

Students **experience phenomena** to build scientific and engineering understanding.



Engineer

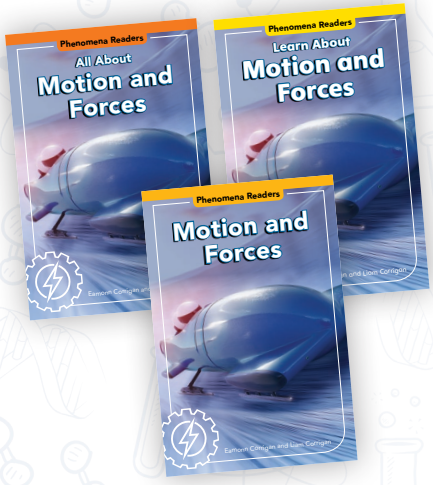
Students **build and design solutions** to real-world problems to practice and apply SEPs.

Flexible Implementation Options

Elevate Science is adaptable to any instructional time frame. Whether you teach within a dedicated science block or integrate into your literacy block, students will be fully engaged in science concepts and experience science and engineering practices.

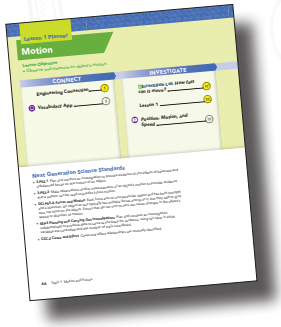
Option 1: Full Program Experience

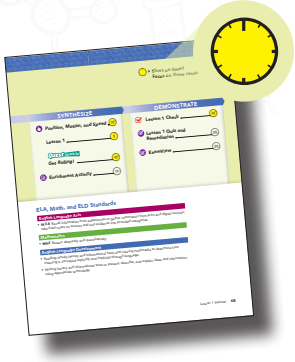
- Student Edition, Teacher Edition, Leveled Readers, Digital Course -

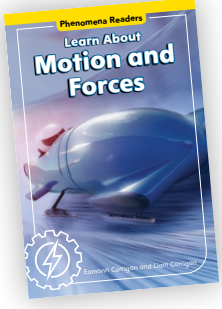


Option 2: Short on Time!

- Teacher Edition, Leveled Readers, Digital Course -

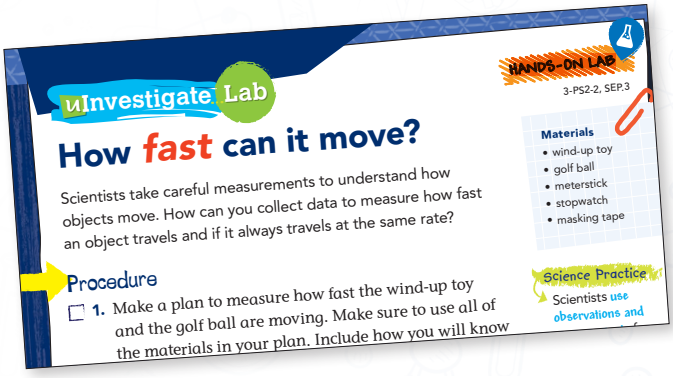


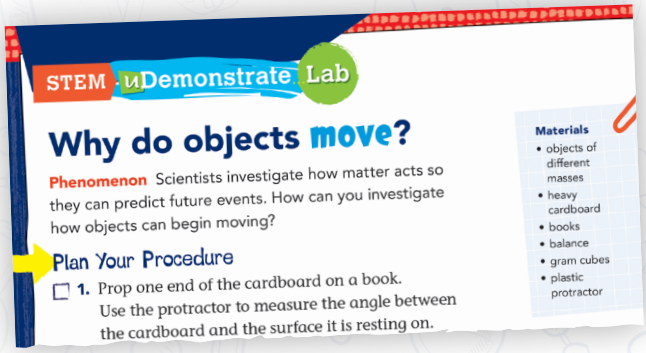


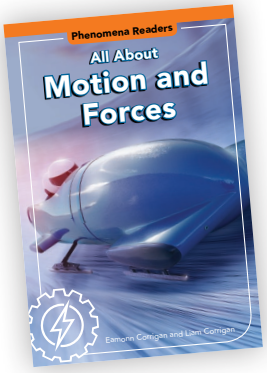


Option 3: Integrate into Reading

- Quest investigations, Labs, Leveled Readers, Digital Course -

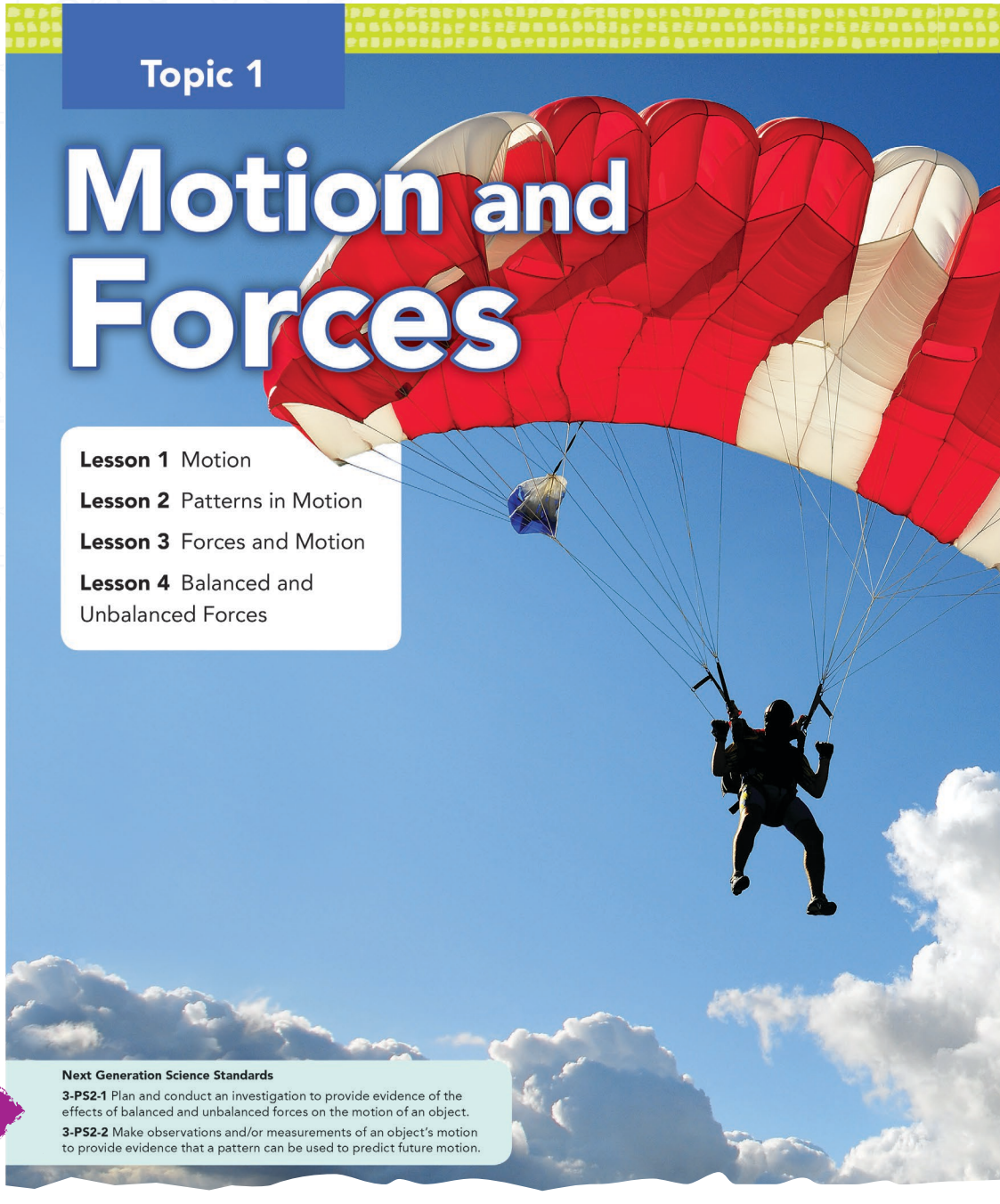






Activate Phenomena

The **Topic Opener** introduces the central idea and awakens students' restless curiosity. The **Essential Question** jumpstarts the conversation and generates the need for investigation.



Next Generation Science Standards
Identifies the essential focus across the Topic exploration.

Launch with Phenomena

Use Topic Opener images to spark a classroom discussion and engage students in the phenomenon before diving into instruction.

Digital Resources

Use online digital resources to further engage students in the phenomenon.

Essential Question

Build excitement around the phenomenon through student discourse.

Go on a Quest Adventure

Each topic in ***Elevate Science*** begins with a **Quest** problem-based challenge centered on **phenomena** to encourage open-ended inquiry.

Quest Kickoff
launches the problem-based challenge, engaging the student in the phenomenon featured in the topic.

Quest Check-In
Each lesson connects student learning within the lesson to the problem-based challenge.

Quest Kickoff

STEM

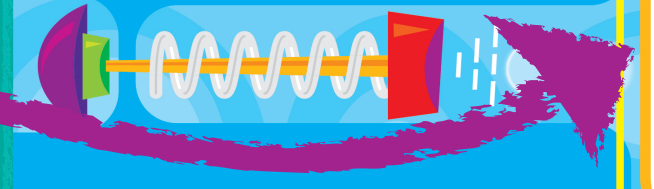
Pinball Wizard!

How can you use different types of forces to design a pinball machine?

Phenomenon Hi there! My name is Andrew Platt. I am designing a new pinball game for a contest. The object of the game is to collect points while you keep the ball from rolling off the surface. I need your help to design the new game.

In this problem-based learning activity, you will learn how designers use different forces to cause the ball to move in different ways.

Follow the path to learn how you will complete the Quest. The Quest activities in the lessons will help you complete the Quest! Check off your progress on the path when you complete an activity with a QUEST CHECK OFF. Go online for more Quest activities.



Next Generation Science Standards

3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

3-PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

Quest Check-In 1

Lesson 1

Learn about how objects move. Understand how you can get your pinball rolling.

The **Quest** presents an authentic storyline, reinforcing the key concepts and linking the lessons together in a logical progression that builds student understanding.

Quest Findings
Students present solutions to the original challenge using the evidence at the end of a topic.

Empower Students

Based on the 5-E learning cycle, the new **CISD Instructional Model** (Connect, Investigate, Synthesize, Demonstrate) empowers students to become more self-directed, curious, and accountable.

CONNECT
(Engage)

- Phenomena Interactions
  - Observable
  - Hands-on
  - Digital

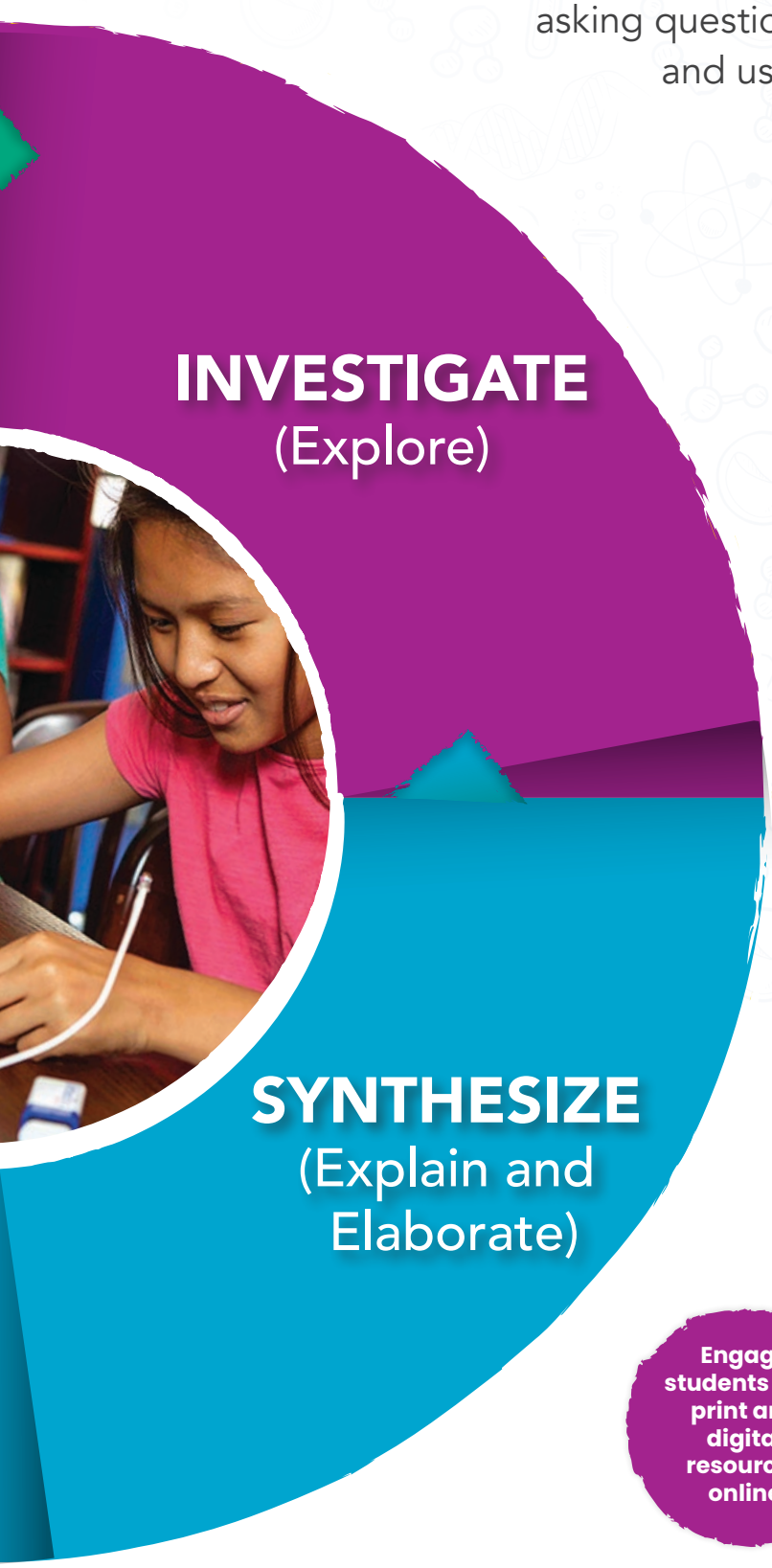
DEMONSTRATE
(Evaluate)

- Formative Assessments with Remediation Activities
- Rubrics

Short on Time?

No worries! We have built in an **alternate route**. Just look for the yellow clock in the lesson planner to ensure you teach all you need in less time.

Students "do science" by synthesizing ideas, asking questions, gathering evidence, analyzing and using data, and demonstrating their understanding.



INVESTIGATE
(Explore)

- *u*Investigate Labs
- Interactivities
- Virtual Labs
- Science Notebooking Activities

SYNTHESIZE
(Explain and Elaborate)

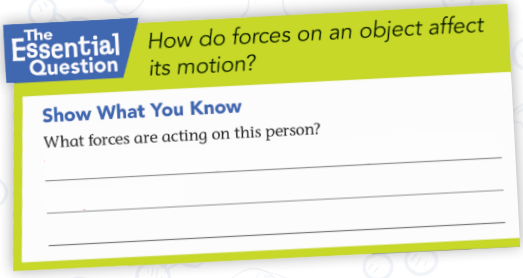
- Interactive Model It, Question It, Design It
- Quest Interactivities, Labs, and Check-Ins
- Hands-on Labs
- Focus on Mastery Activities
- Science Notebooking Activities
- Enrichment Activities

Engage students with print and digital resources online

Investigate and Understand Phenomena

Elevate Science provides scaffolded lab activities that motivate students to explore the phenomenon featured within a topic. Students follow the Inquiry Steps to Mastery below to experience science like scientists or engineers.

1

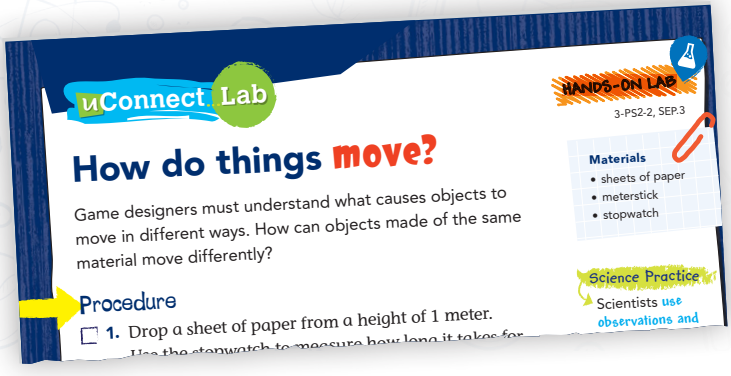


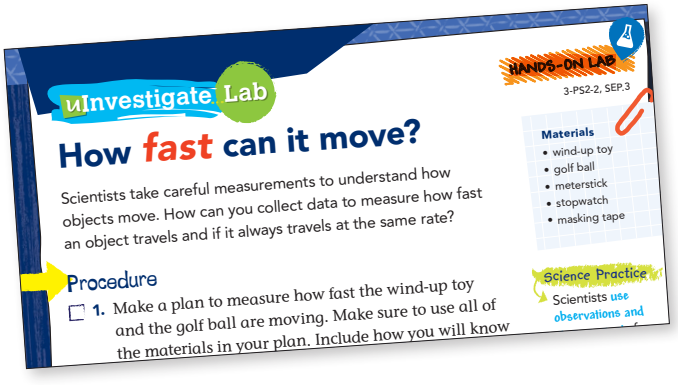
The **Essential Question** introduces the topic's phenomenon, exposes the Big Idea, and engages students in discourse.

2

*u*Connect

- Activates the Phenomenon
- Builds a foundational, common experience
- Connects core ideas with Science and Engineering Practices





3

*u*Investigate

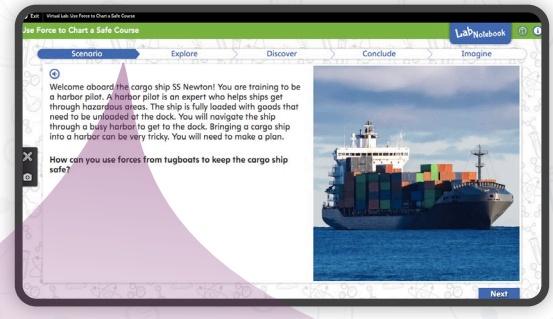
- Explores the topic's core ideas
- Encourages students to construct knowledge while connecting concepts
- Supports evidence gathering as students move along the Quest

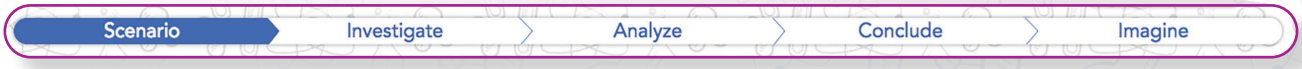
Investigate

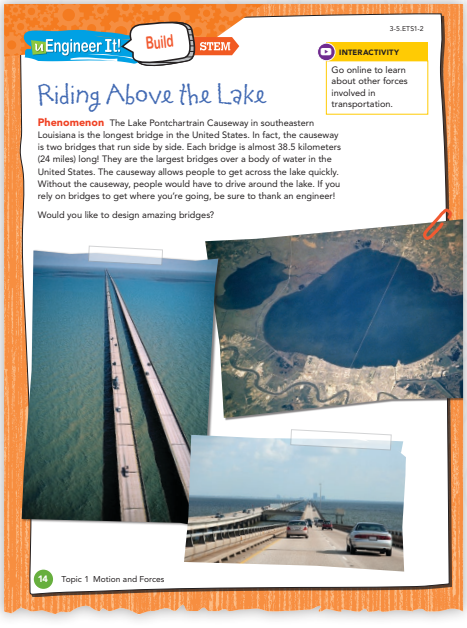
4

Virtual Labs

- Quick, accessible, multivariable digital investigations
- Provides instant feedback for students
- Develops skills for evidence gathering and critical thinking





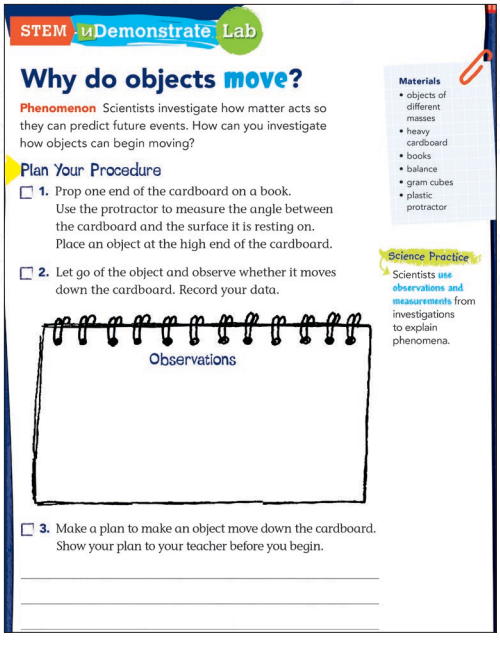


5

uEngineer it!

- Models the engineering and design process
- Develops critical thinking and communication skills
- Encourages creativity and collaboration

Downloadable and Editable Labs Online



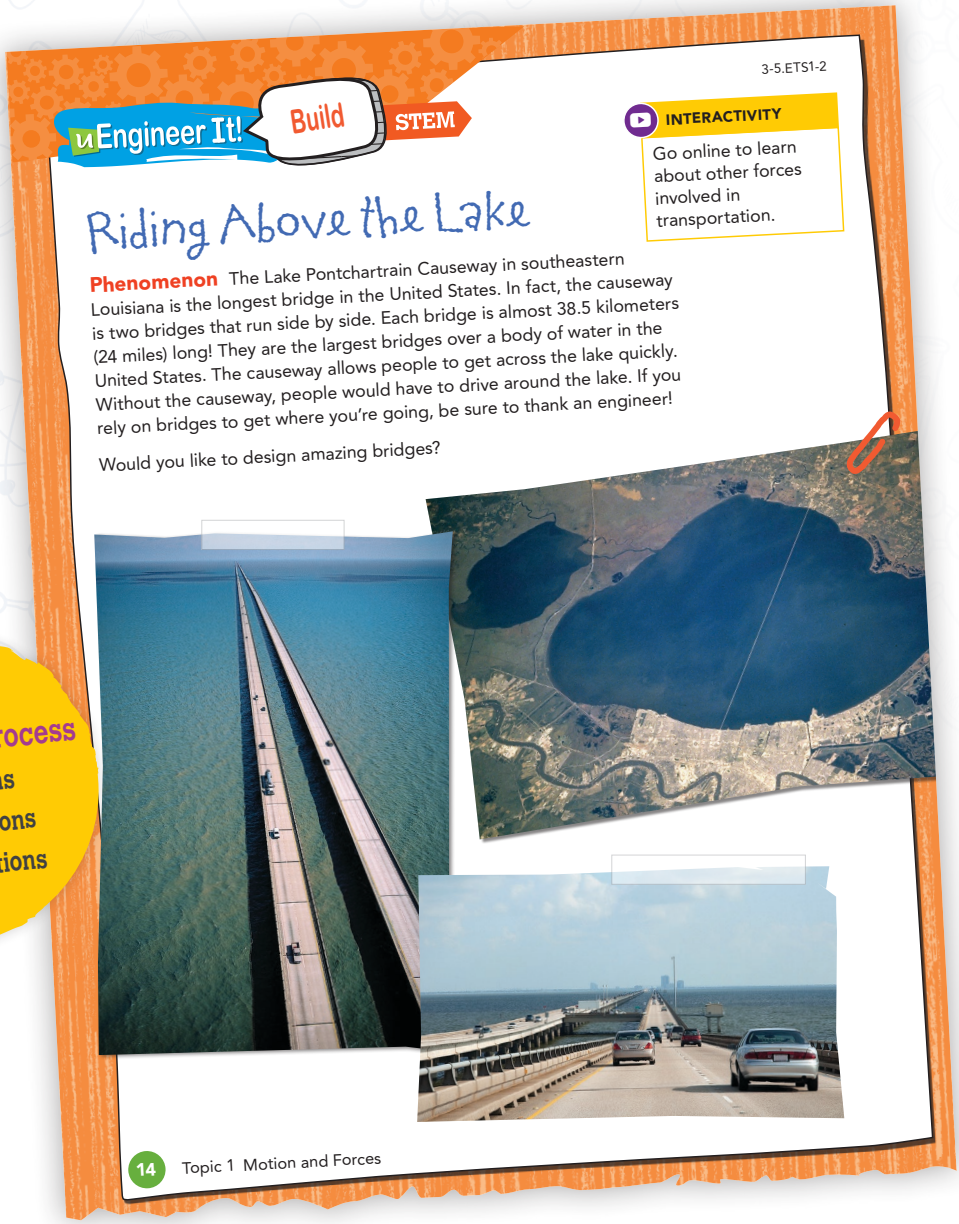
6

uDemonstrate

- Summative Performance-Based Assessment opportunity at topic close
- Makes use of Claim-Evidence-Reasoning
- Reflects outcome of three-dimensional learning

Innovate, Design, and Engineer *IT*!

Elevate Science engages and empowers all students to be the world's next generation of inventors, explorers, innovators, and scientists by inspiring a restless curiosity and craving for exploration.



3-5.ETS1-2

uEngineer It! Build STEM

INTERACTIVITY

Go online to learn about other forces involved in transportation.

Riding Above the Lake

Phenomenon The Lake Pontchartrain Causeway in southeastern Louisiana is the longest bridge in the United States. In fact, the causeway is two bridges that run side by side. Each bridge is almost 38.5 kilometers (24 miles) long! They are the largest bridges over a body of water in the United States. The causeway allows people to get across the lake quickly. Without the causeway, people would have to drive around the lake. If you rely on bridges to get where you're going, be sure to thank an engineer!

Would you like to design amazing bridges?

14 Topic 1 Motion and Forces

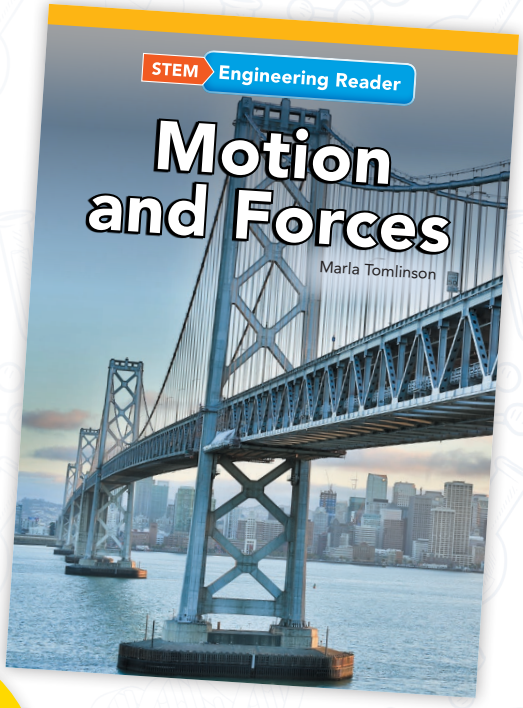
Follows the Engineering Process

- Define Problems
- Develop Solutions
- Optimize Solutions

STEM Engineering Readers

On-level texts refine important science and engineering practices, as students apply critical thinking and literacy skills to investigate real-world phenomena.

- Introduces engineering models
- Tasks apply engineering practices
- Prompts focus reading



littleBits activities further energize STEM/STEAM innovation and inventiveness.

uEngineer It! Maker Crates

Students channel "inventor" creativity with materials that support the Engineering Design Process. Each kit includes plenty of reusable materials for ongoing innovation, iteration, and design improvement.

Collect Evidence, Communicate, Demonstrate

Elevate Science is rich with assessment opportunities to inform teaching and improve learning.

Examples of Assessments Found in *Elevate Science*

Diagnostic

- Entry-level
- Readiness

Formative

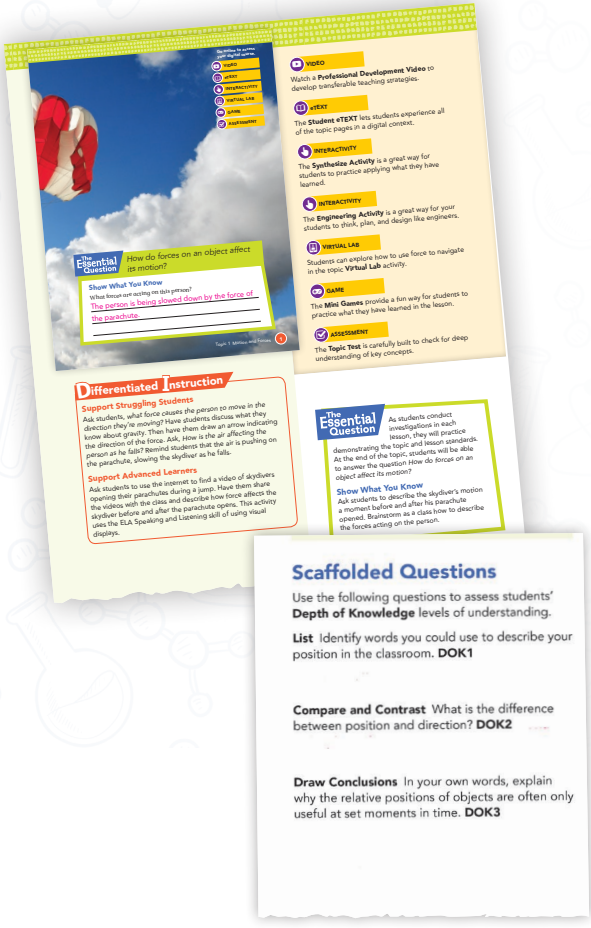
- Scaffolded Question Probes
- Checkpoint Questions
- Lesson Checks
- Lesson Quizzes
- Topic Reviews
- *u*Investigate Labs

Summative

- Topic Tests
- Evidence-Based Assessments
- Benchmark Assessments
- End-of-Year Assessments

Performance Tasks

- *u*Demonstrate Labs
- *u*Engineer It STEM Labs
- Virtual Labs
- Quests



Scaffolded Questions

- Probes student's prior knowledge before beginning a topic
- Questions increase in difficulty and complexity
- Includes a depth of knowledge (DOK) level

Evidence-Based Assessment

Read this scenario and answer questions 1–4.

Mike is a scientist who is learning how to ski. The photo shows Mike standing at the top of one side of a half pipe. A half pipe is a skiing feature that has a sloping hill on two sides. Mike wants to know where he will end up after he starts moving. To find out, he collects some data. Examine the diagram, and then answer questions 1–4.

1. **Evaluate** Mike is standing still at the top of a half pipe. Which two arrows represent forces that are balanced?
   - **A.** X and Z
   - **B.** W and Y
   - **C.** X and Y
   - **D.** Y and Z

2. **Identify Variables** What does the Y arrow in the diagram represent?
   - **A.** the force of gravity
   - **B.** the force of friction
   - **C.** Mike's falling motion
   - **D.** the speed of falling snow

3. **Evaluate** Mike begins to push with his ski poles, but he does not move. Which of these choices explains why?
   - **A.** The force of gravity is holding Mike on Earth's surface.
   - **B.** The force of friction is stronger than the force of Mike's push.
   - **C.** The force of gravity is balanced by the force of the hill pushing up.
   - **D.** The force of Mike's push is unbalanced because of the wind's force.

4. **Patterns** Mike pushes a little harder and starts moving down the hill. Write a prediction about what will happen to Mike's motion and why it will happen.

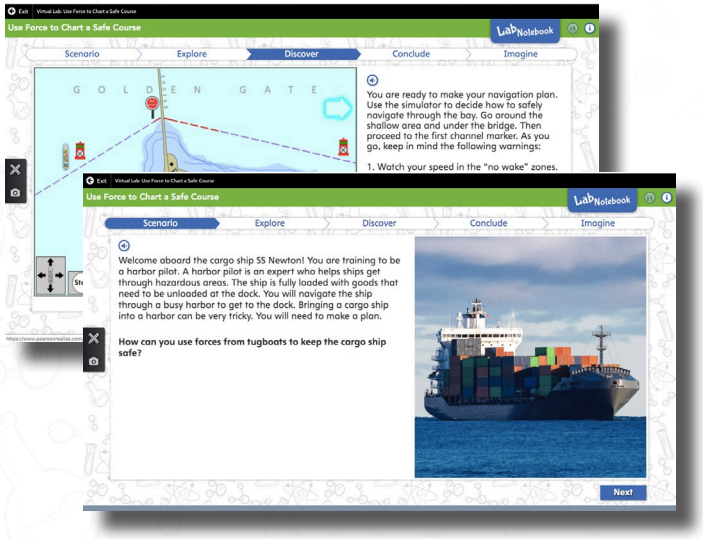
Evidence-Based Assessments

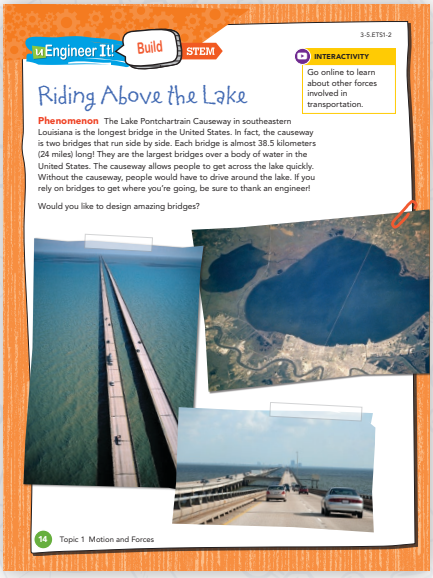
Evidence-Based Assessments found at the end of each topic present a scenario-based, multi-component task. The task will not only simultaneously assess multiple practices, but also measure a student's conceptual understanding of the topic's science ideas.

Design. Build. Test. Repeat!

Virtual Labs

- Quick, accessible, efficient digital investigations
- Open-ended with multiple simulations
- Assesses all dimensions of the Performance Expectation



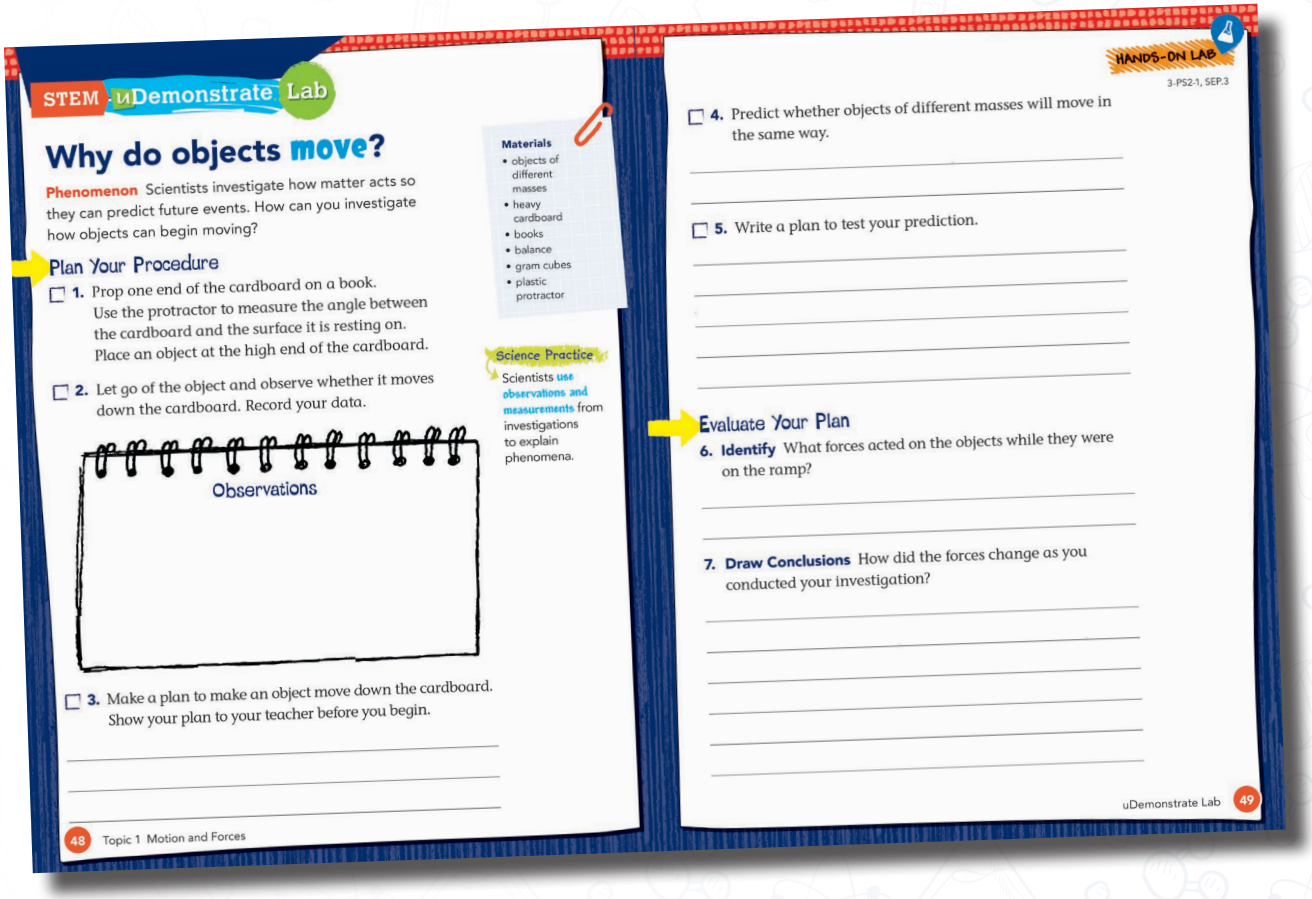


*u*Engineer It STEM Lab

Focuses on the Nature of Science and Engineering standards, where students apply the topic knowledge to an engineering challenge or problem

Quests

- **Quest Kick-off** provides authentic, open-inquiry experiences with a real-world phenomenon
- Check-in tasks separately assess student proficiency in individual dimensions
- Create products
- **Quest Findings** determine students' ability to integrate the 3-dimensions in a specific context



STEM uDemonstrate Lab

Why do objects move?

Phenomenon Scientists investigate how matter acts so they can predict future events. How can you investigate how objects can begin moving?

Materials
- objects of different masses
- heavy cardboard
- books
- balance
- gram cubes
- plastic protractor

Science Practice
Scientists use observations and measurements from investigations to explain phenomena.

Plan Your Procedure

1. Prop one end of the cardboard on a book. Use the protractor to measure the angle between the cardboard and the surface it is resting on. Place an object at the high end of the cardboard.
2. Let go of the object and observe whether it moves down the cardboard. Record your data.

Observations

3. Make a plan to make an object move down the cardboard. Show your plan to your teacher before you begin.

48 Topic 1 Motion and Forces

HANDS-ON LAB
3-PS2-1, SEP.3

4. Predict whether objects of different masses will move in the same way.
5. Write a plan to test your prediction.

Evaluate Your Plan

6. **Identify** What forces acted on the objects while they were on the ramp?
7. **Draw Conclusions** How did the forces change as you conducted your investigation?

uDemonstrate Lab 49

*u*Demonstrate Labs

The *u*Demonstrate labs conclude every topic. Labs integrate all the dimensions of the performance expectations. Student will investigate by building and observing models, and designing and engineering solutions. Each *u*Demonstrate has a complete rubric included online to guide and assess students' work.

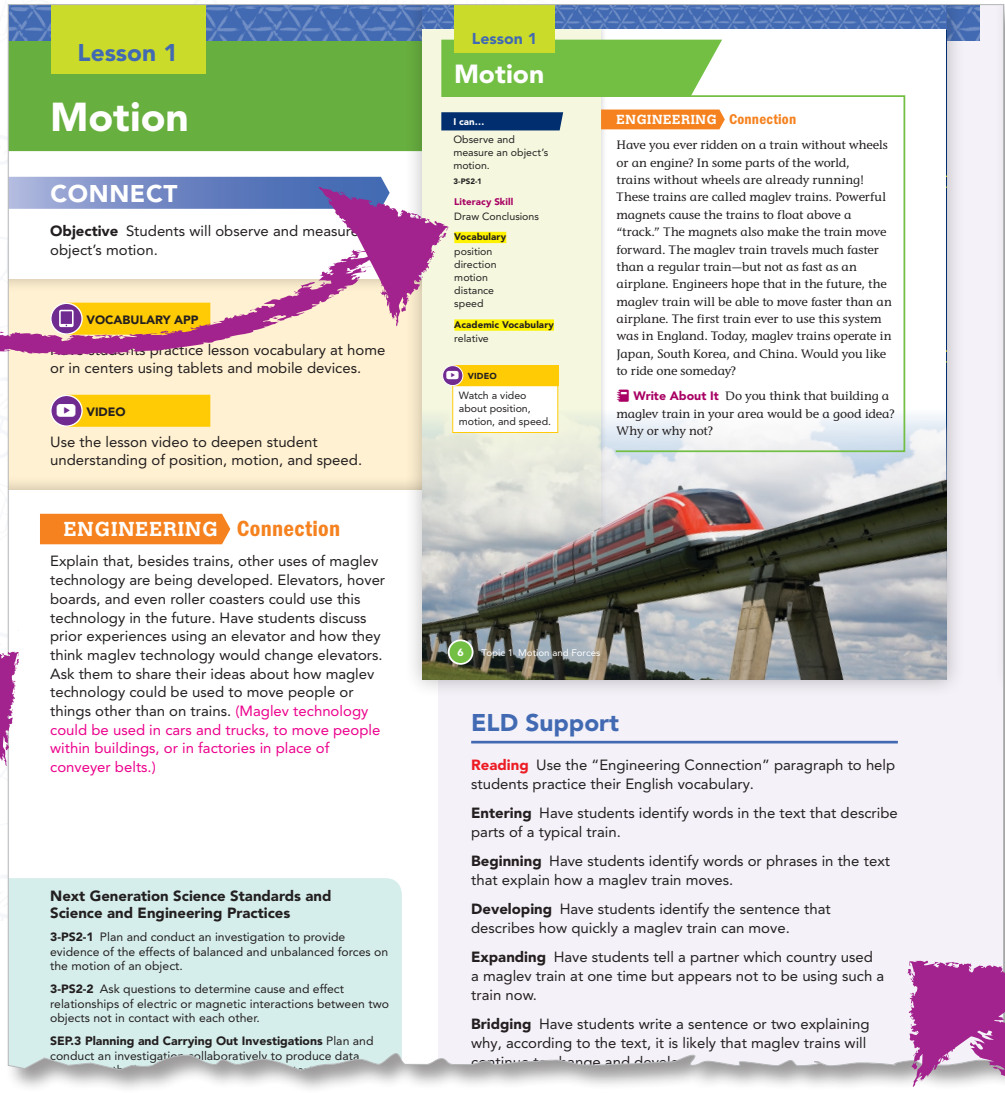
Teaching Made Easy

Elevate Science provides point-of-use resources to support the diverse needs of students.

Convenient Integration of ELA and Math Skills

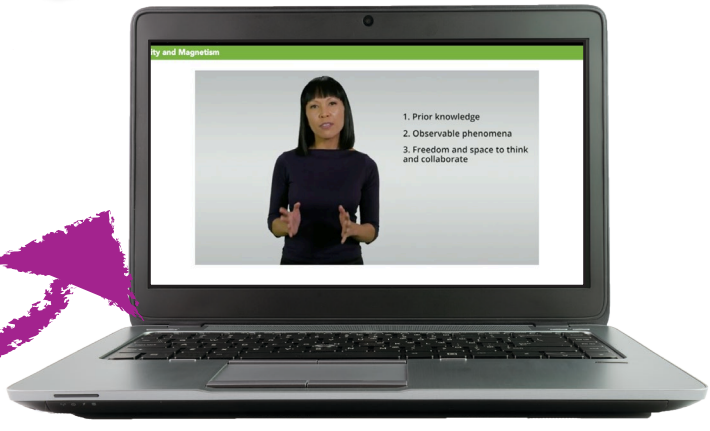
Literacy Connections, Math Toolboxes, and visual literacy opportunities provide standards-based connections and are purposefully placed to enhance student understanding.

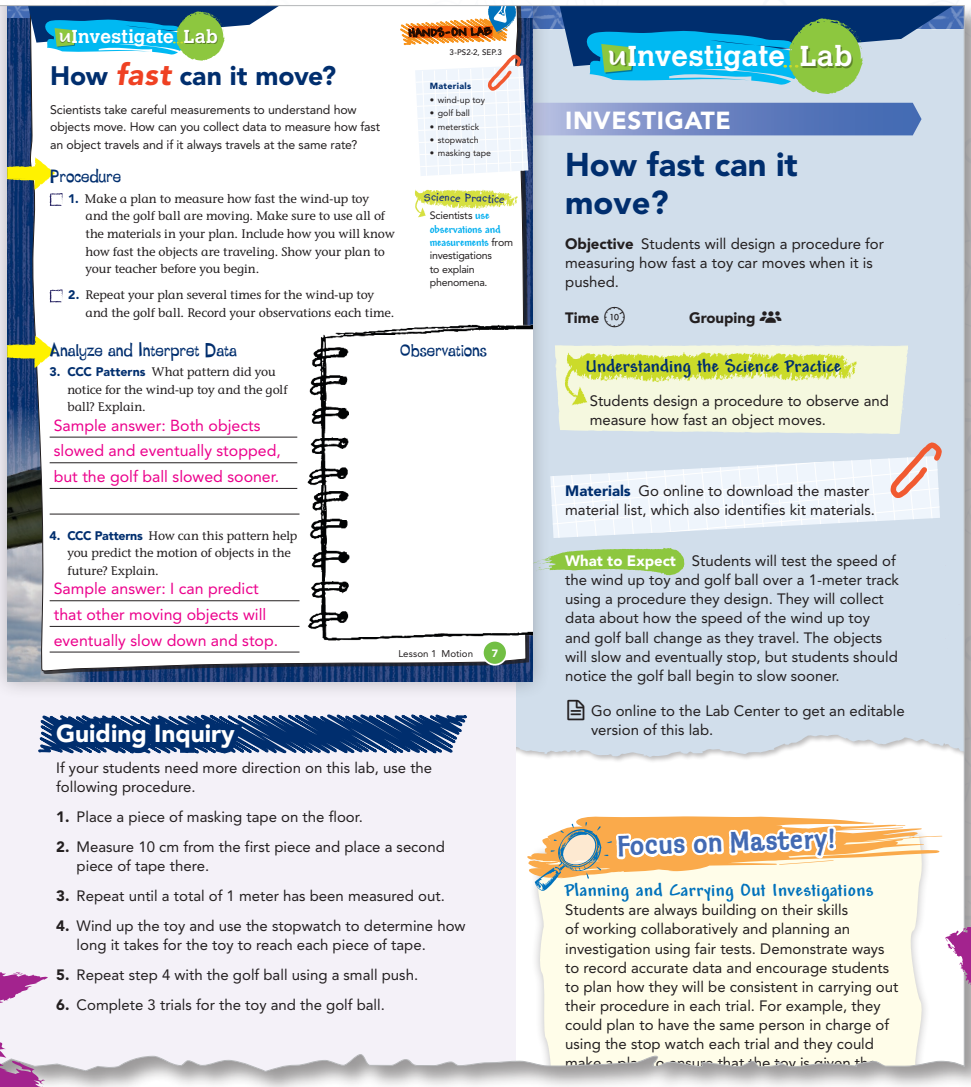
Activate **prior knowledge** to connect students to important science concepts.



Professional Development Videos

Preview a lesson and understand strategies and outcomes.





uInvestigate Lab

How *fast* can it move?

HANDS-ON LAB
3-PS2-2, SEP.3

Scientists take careful measurements to understand how objects move. How can you collect data to measure how fast an object travels and if it always travels at the same rate?

Materials
- wind-up toy
- golf ball
- meterstick
- stopwatch
- masking tape

Science Practice
Scientists use observations and measurements from investigations to explain phenomena.

Procedure

1. Make a plan to measure how fast the wind-up toy and the golf ball are moving. Make sure to use all of the materials in your plan. Include how you will know how fast the objects are traveling. Show your plan to your teacher before you begin.
2. Repeat your plan several times for the wind-up toy and the golf ball. Record your observations each time.

Analyze and Interpret Data

3. **CCC Patterns** What pattern did you notice for the wind-up toy and the golf ball? Explain.

Sample answer: Both objects slowed and eventually stopped, but the golf ball slowed sooner.

4. **CCC Patterns** How can this pattern help you predict the motion of objects in the future? Explain.

Sample answer: I can predict that other moving objects will eventually slow down and stop.

Observations

Lesson 1 Motion 7

uInvestigate Lab

INVESTIGATE

How fast can it move?

Objective Students will design a procedure for measuring how fast a toy car moves when it is pushed.

Time 10' **Grouping**

Understanding the Science Practice
Students design a procedure to observe and measure how fast an object moves.

Materials Go online to download the master material list, which also identifies kit materials.

What to Expect Students will test the speed of the wind up toy and golf ball over a 1-meter track using a procedure they design. They will collect data about how the speed of the wind up toy and golf ball change as they travel. The objects will slow and eventually stop, but students should notice the golf ball begin to slow sooner.

Go online to the Lab Center to get an editable version of this lab.

Guiding Inquiry

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

1. Place a piece of masking tape on the floor.
2. Measure 10 cm from the first piece and place a second piece of tape there.
3. Repeat until a total of 1 meter has been measured out.
4. Wind up the toy and use the stopwatch to determine how long it takes for the toy to reach each piece of tape.
5. Repeat step 4 with the golf ball using a small push.
6. Complete 3 trials for the toy and the golf ball.

Focus on Mastery!

Planning and Carrying Out Investigations
Students are always building on their skills of working collaboratively and planning an investigation using fair tests. Demonstrate ways to record accurate data and encourage students to plan how they will be consistent in carrying out their procedure in each trial. For example, they could plan to have the same person in charge of using the stop watch each trial and they could make a pla[illegible]o ensure that the toy is given th

Teaching Tips

- Address preconceptions
- Content area connections
- Engineering and design practices

Targeted Teaching and Learning

Support differentiation for all students for

- ELD
- Special Education
- Below Level
- Advanced Level

Do the Science!

Leveled Readers

Make difficult science concepts accessible for all students, allowing for whole group engagement in student discourse.

Write-In Student Editions

Support the development of writing and thinking about science.

Classroom Material Kits

Provides most of the supplies necessary to do all the hands-on investigations. Includes both consumable and non-consumable materials.

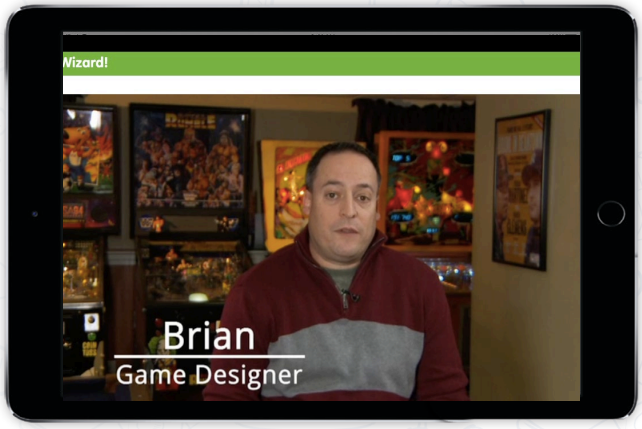
Teacher Materials Include:

- Teacher Edition
- Leveled Reader Teacher Guide

It's as simple as: Click. Teach. Learn.

Realize™ Platform allows for flexibility in teaching and learning.

- Google Integration
  - Google Classroom™
  - Google Drive™
- Rearrange or Hide Topics
- Customize Lessons



Partner

Google for Education

Digital Resources

- Realize™ Reader Student eText
- Interactivities
- Animations
- Games
- Videos
- Virtual Labs
- Lab Worksheets
- Quest Checklists
- Enrichments
- School-to-Home Letters
- Multilingual Glossary
- Assessments
  - Readiness
  - Quizzes
  - Topic Tests
  - Benchmark
  - Performance-Based
  - End-of-topic
  - Course Level
  - Rubrics
  - Exam*View*®
- Teacher Edition eText
- Teacher Support
- Reading Strategies
- Target Reading Skills
- Test-Taking Strategies

Experience IT! It's the Science of Doing.

Learn more at Savvas.com/ExperienceIT

elevate science

0320.KF.LB.Sci5.8IR628

SAVVAS
LEARNING COMPANY

Savvas.com
800-848-9500

SAM: 9780768597677
ADV: 9780768597721

Join the Conversation
@SavvasLearning

Get Fresh Ideas for Teaching
Blog.Savvas.com