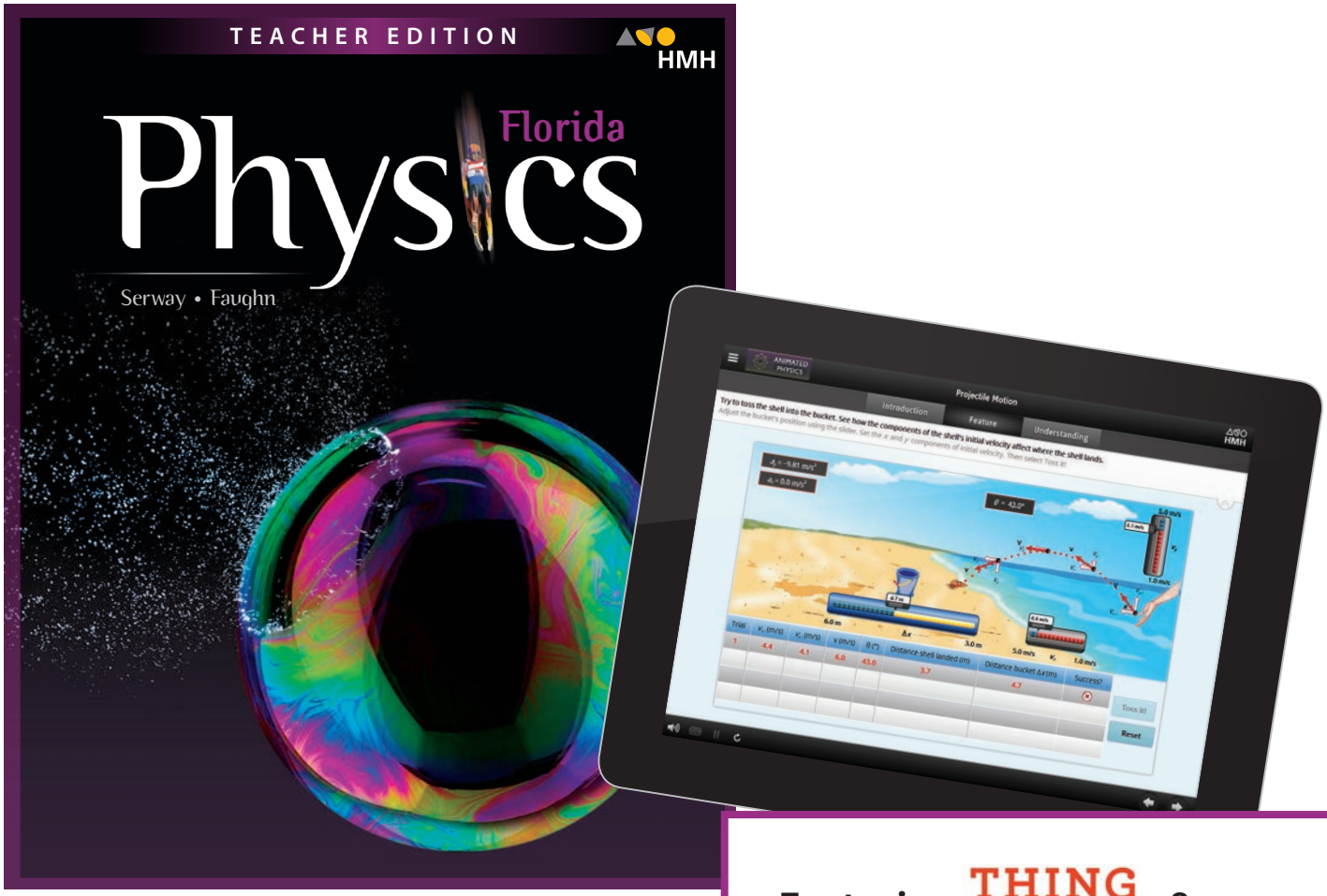
Houghton Mifflin Harcourt

Physics

Reviewer's Guide



Featuring THING EXPLAINER &

Google Expeditions

Tired of hauling your books back and forth from school to home?

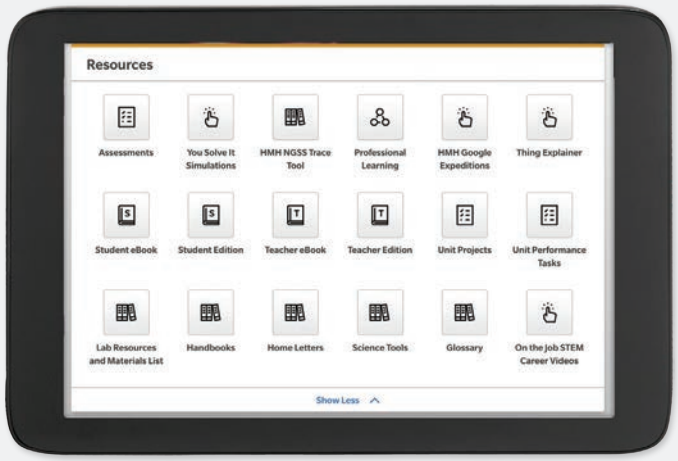
Houghton Mifflin Harcourt® *Physics*
Less Paper, More Convenience

Everything you need—now in one convenient online location!

The Interactive Online Edition gives you and your students 24/7 point-of-use access to all program components.

Concept Maps
Each chapter includes an interactive concept map graphic organizer that helps strengthen student learning schemas.

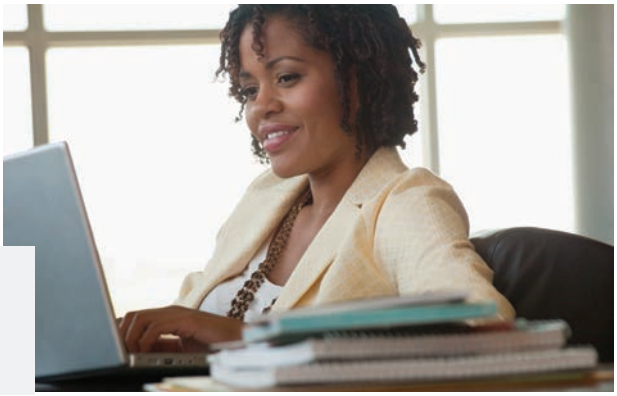
Virtual Labs
Students can hone their lab skills using the comprehensive set of 24 labs featuring everything they need to conduct traditional labs—in a virtual setting.



Interactive Demonstrations
Interactive Demonstrations show how to solve a specific type of physics problem. The **Try It Yourself** feature helps students apply what they have learned. Each includes a full audio narrative.

Animated Physics
Each chapter includes stimulating animations or simulations to help students visualize and comprehend complex physics concepts.

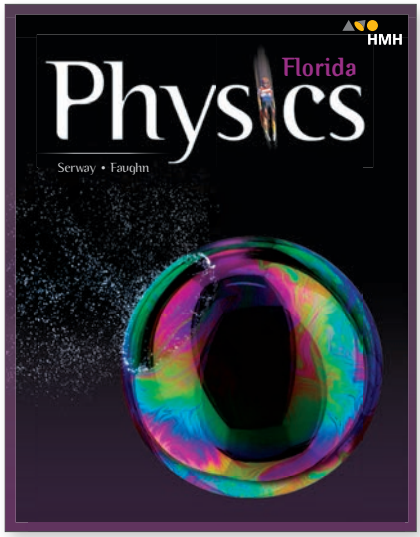
Dashboard
Classrooms using **Florida *Physics* © 2019** will now have the benefit of the **improved** online interface provided by the HMH Dashboard. This also includes *my*SmartPlanner, enabling you to combine calendar functionality with curriculum mapping and program resources.



For Online Access please contact your local Account Executive
hmhco.force.com/replocator

Print Components **Designed** and **Aligned** for Easy Access

HMH® Florida *Physics* enables you to reach all learners by providing time-saving, easy-to-use resources to help students of all abilities achieve understanding and success.

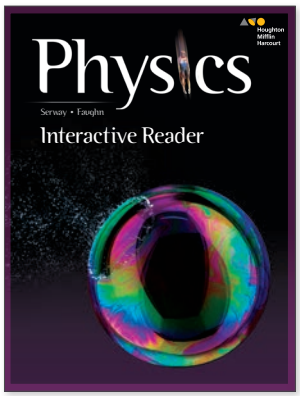


Florida Student Edition

Offers features that make physics concepts more accessible, such as **highlighted vocabulary, problem-solving support,** and references to online student support tools.

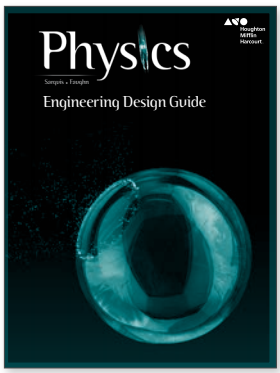
Florida Teacher Edition

Packed with a wide variety of **strategies** to help all students master physics concepts, plus **extended learning** opportunities for advanced students. Correlated to the **Florida Next Generation Sunshine State Standards** for Physics.



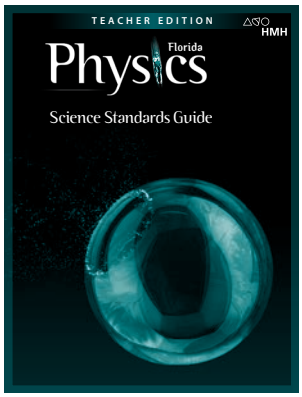
Interactive Reader (Student and Teacher Editions)

A **write-in worktext** that provides all of the essential content and vocabulary of the Student Edition at a reading level one to two grades below the text. A great resource for students of all ability levels, the Interactive Reader is both a core instructional tool for **struggling students** and a useful **study guide** for all students. The Answer Key provides teacher notes and answers for every section of the Interactive Reader.



Engineering Design Guide (Student and Teacher Editions)

This Engineering Design Guide provides an overview of the **engineering design process** along with activities and checklists that can help foster students' **critical-thinking** and **problem-solving skills**.



Florida Science Standards Guide (Student and Teacher Editions)

A two-page **Challenge Activity** for every physics standard, the **Florida Science Standards Guide** includes teacher notes and evaluation guidelines for each challenge as students perform a **lab, an investigation, a research project**, or another activity.

How do you put your students in the moment?

Digital Tools That **Motivate** and **Engage**

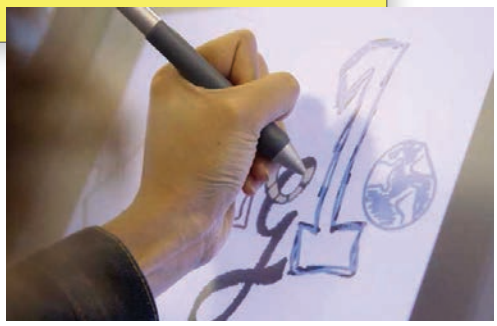
HMH *Physics* offers the latest multimedia resources that speak directly to your students in a visual language they understand—ensuring that they will stay engaged.

HMH Field Trips

powered by

Google Expeditions

As a Google® content partner, HMH® has developed K–12 field trips for Google Expeditions. Using a virtual reality viewer—like Google Cardboard™—and a smartphone, students are swept away into immersive virtual worlds where learning and engagement are maximized. These virtual field trips are 3D, 360-degree panoramas from fascinating locations, directly tied to science content! An **HMH Teacher Guide** provides ideas for incorporating the Expeditions into your lessons, as well as tips on how to guide and customize the experience.



On the Job **Graphic Designer**

On the Job STEM Videos

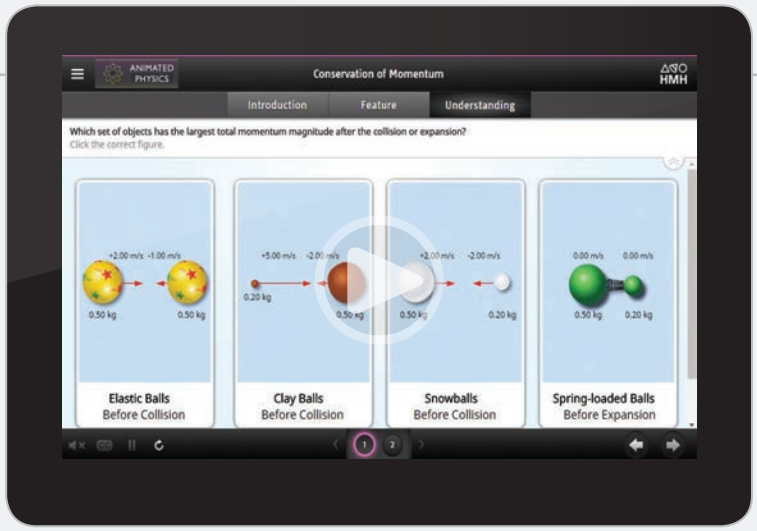
Are your students gamers who dream of creating the next big hit? Or music lovers who want to work with the biggest artists? Or thrill seekers with designs in mind for race cars or roller coasters?

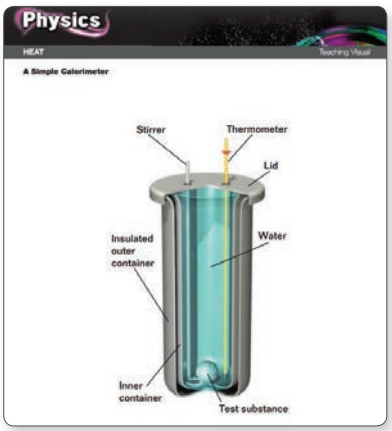
As part of our Premium, Hybrid, and Digital Enhanced offerings, HMH now includes 29 *On the Job* STEM videos that **profile STEM careers** in today's fastest-growing industries. Our energetic hosts shadow passionate professionals in a day "on the job." These short segments are inspirational and entertaining with the hosts actually performing parts of the job! These videos will **motivate students** to enter emerging STEM fields.

Scan here to view ***On the Job*** STEM videos.

Animated Physics

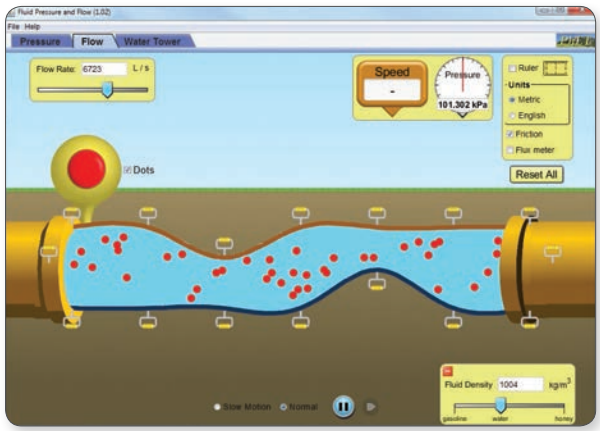
Each chapter includes stimulating animations or simulations to help students visualize and comprehend complex physics concepts. Each **Animated Physics** includes a three-part instructional model: an **Introduction** to focus and motivate students, an **Interactive Feature** to teach the concept, and **Check Your Understanding** to check student comprehension





Teaching Visuals

Digital versions of key illustrations and diagrams are ideal for **whole-class instruction.**

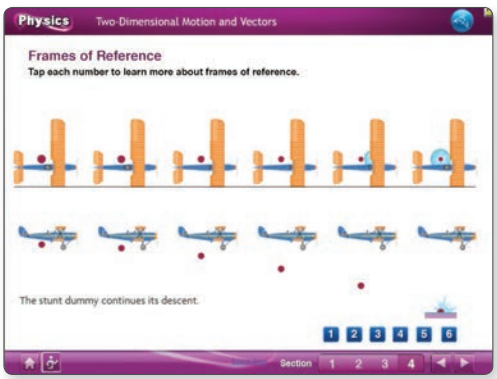


PhET Simulations

Interactive online simulations produced under Creative Commons licensing by the University of Colorado at Boulder. They provide fun, interactive, **research-based simulations** of real-life phenomena.

WebLinks

Hand-selected resource links save you endless hours of research, bringing the BEST of the Internet to the classroom to **extend and enrich** each chapter's content.

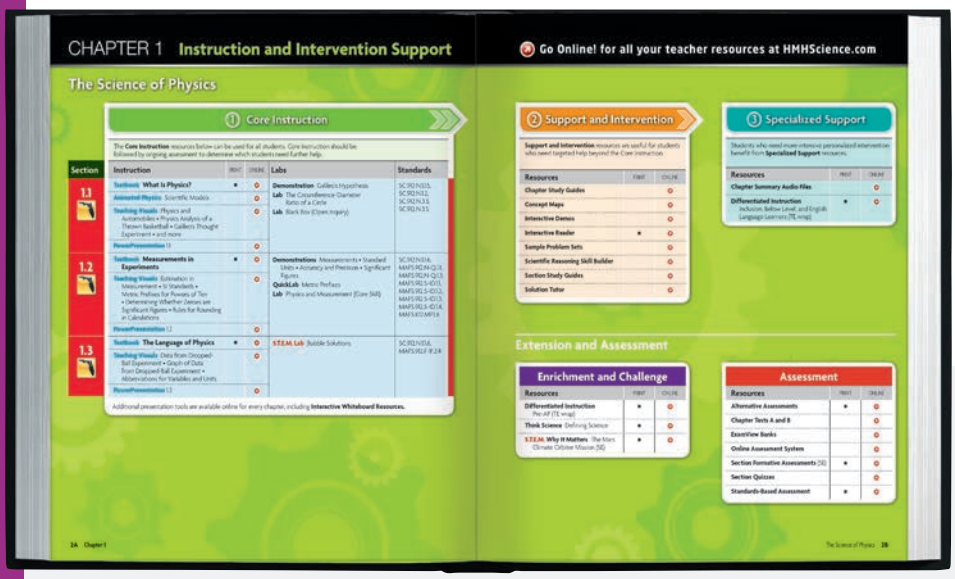


Interactive Whiteboard Resources

Key teaching visuals from each chapter have been adapted specifically for interactive whiteboard use.

Unparalleled Resources for
Differentiated Instruction

Students approach physics with a wide variety of skills and levels of preparation. HMH *Physics* provides you with the tools to ensure all students succeed.



Florida Teacher Edition

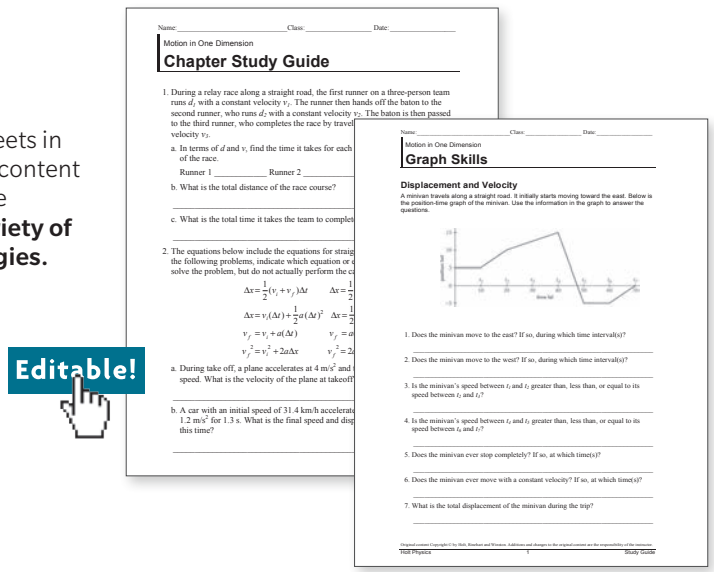
The **Instruction and Intervention** feature located in each chapter of the Teacher Edition provides **strategies for every lesson** to assist you in helping students with a wide range of needs. To simplify lesson planning, these support pages at the beginning of each chapter provide a full listing of the activities and classroom resources available for each section.

The side margin of the Teacher Edition includes a **Differentiated Instruction** feature with a wide variety of strategies to help all students master physics concepts. Categories include Below Level, English Learners, Pre-AP®, and Inclusion.

Select **Teaching Strategies** have been extracted from the Teacher Edition and made available online. This enables you to use these valuable **Differentiated Instruction** strategies with or without the textbook.

Chapter and Section Study Guide

The student worksheets in this guide cover the content in each section of the textbook using a **variety of questioning strategies.**



Editable!

Chapter Summaries Audio Files

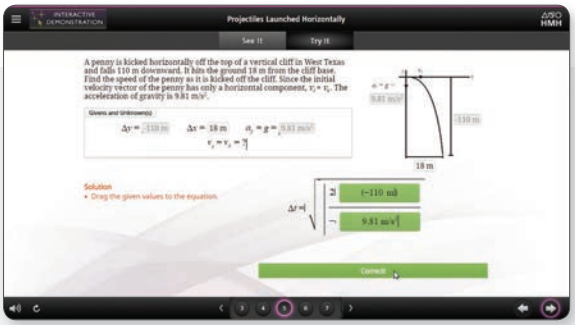
A brief and effective summary of each chapter is professionally read to help **bolster learning comprehension.**

and Problem Solving

HMH *Physics* provides a variety of sample problems that challenge and strengthen students' problem-solving skills.

Solution Tutor

Guides students step by step through selected problems, recognizes their error patterns, and then provides hints and targeted remediation to improve their problem-solving skills.

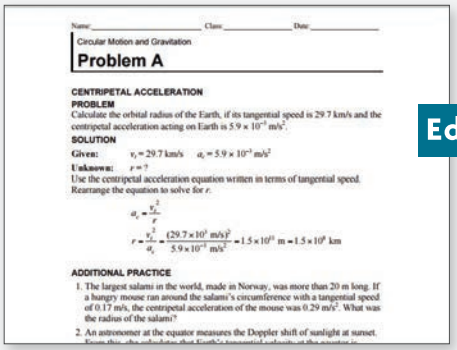


Interactive Demonstrations

Each sample problem in the textbook has an accompanying **Interactive Demonstration** that shows students **how to solve** that type of physics problem. The **Try It Yourself** feature helps student apply what they have learned. Each includes a **full audio narrative.**

Sample Problem Sets I & II

These skills worksheets provide problem-solving strategies and an extensive bank of student **practice problems** for every type of physics problem in the textbook.



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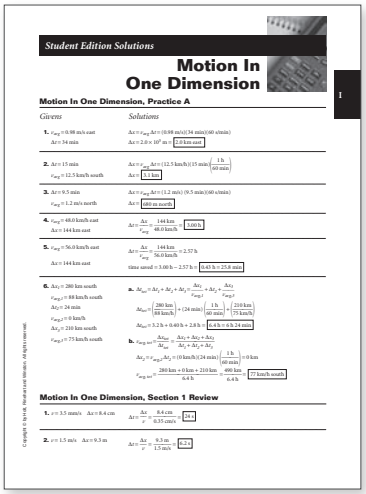


Textbook Solutions

This teacher tool provides **worked-out**, step-by-step solutions to all the physics problems in the textbook.

Problem-Solving Steps

These are organized in a way that is familiar to students. **Key formulas** have been highlighted to help students focus. The **unknown variable** in the sample problem has been highlighted for greater clarity.

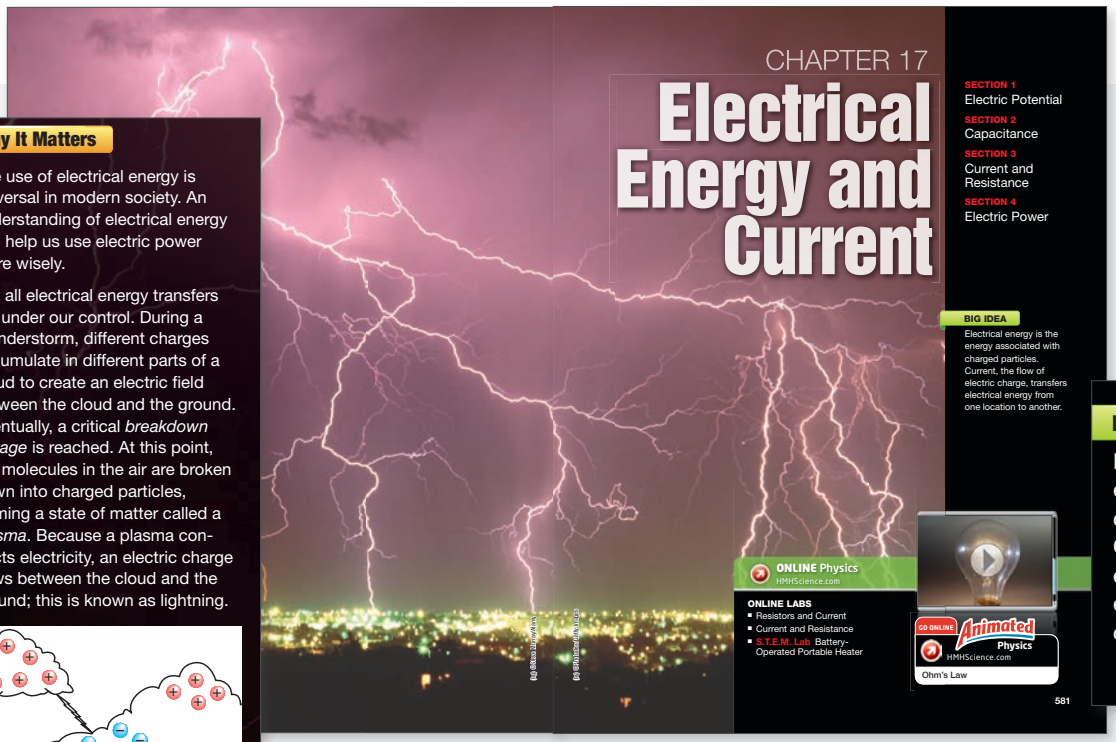
PowerPresentations

Editable!

These pre-built files offer a valuable resource of engaging multimedia presentations that cover the core material and provide helpful **problem-solving practice**. Outline Style presentations are standard presentations, while the Inquiry-Based presentations are more student driven.

Wide-Ranging Support for Reading and Vocabulary

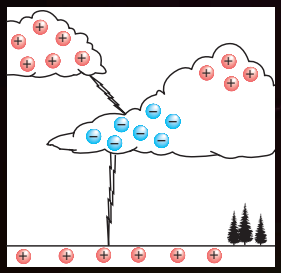
Your students will get the most out of their reading with numerous print and multimedia point-of-use resources that enable them to build understanding and retain more information on key concepts.



Why It Matters

The use of electrical energy is universal in modern society. An understanding of electrical energy can help us use electric power more wisely.

Not all electrical energy transfers are under our control. During a thunderstorm, different charges accumulate in different parts of a cloud to create an electric field between the cloud and the ground. Eventually, a critical *breakdown voltage* is reached. At this point, the molecules in the air are broken down into charged particles, forming a state of matter called a *plasma*. Because a plasma conducts electricity, an electric charge flows between the cloud and the ground; this is known as lightning.



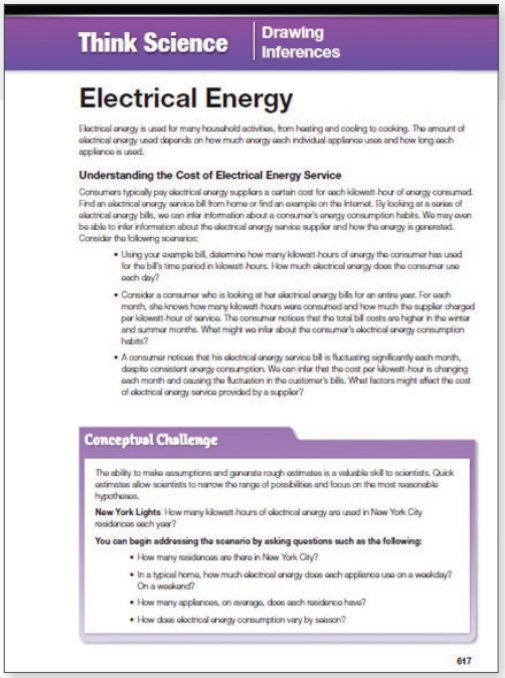
BIG IDEA

Electrical energy is the energy associated with charged particles. Current, the flow of electric charge, transfers electrical energy from one location to another.

Student Edition

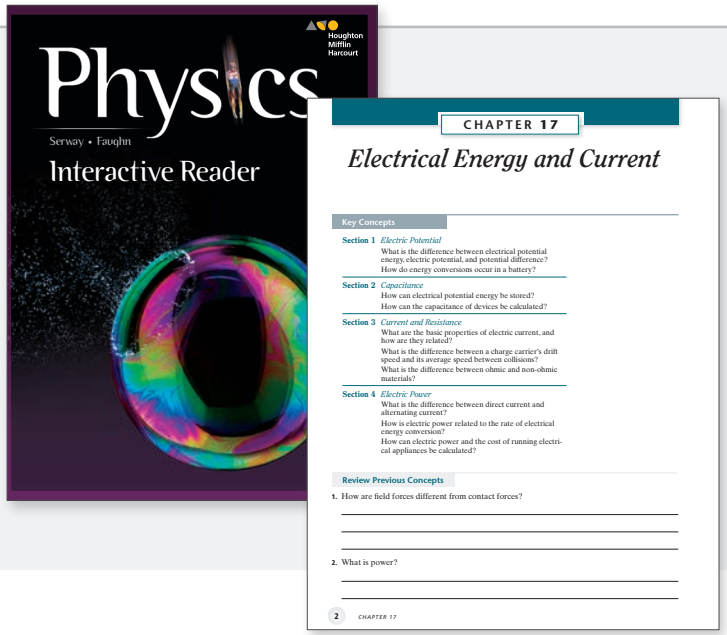
Big Ideas in every Chapter Opener & Summary help students concentrate on key concepts.

Why It Matters showcases updated content with increased relevance to students so they can connect their reading with the world around them.



Think Science

Scientific literacy and the Nature of Science topics are showcased throughout the textbook with the addition of a **Think Science** feature in every chapter. This new feature brings to mind **high-level scientific thinking** as it applies to the materials in each chapter, helping students to think like and observe the world as scientists.

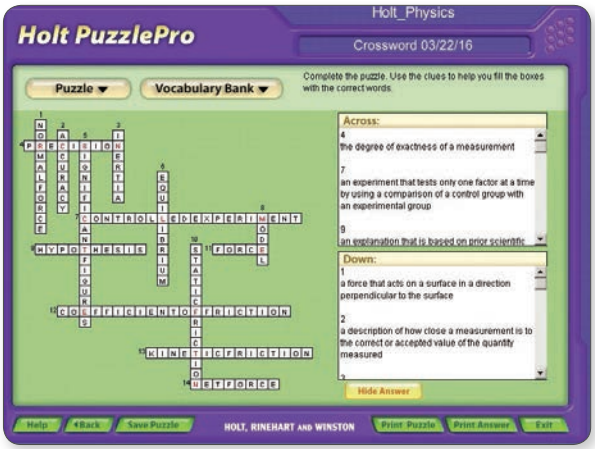


Interactive Reader

This write-in worktext presents all the vocabulary and essential content from the textbook in a lower-level, **easy-to-read** text, with instructional visuals and frequent comprehension checks. This unique component is a great tool for all students—the core content for struggling students and a useful **study guide** for others.

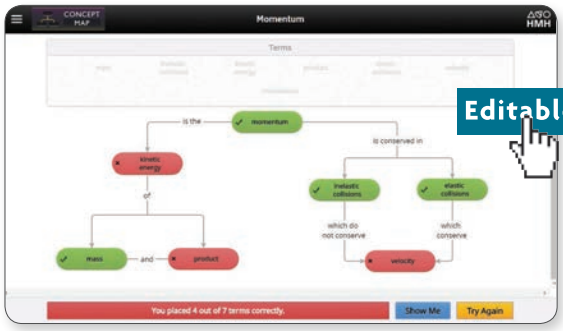
eBook

This online version of the print Student Edition offers **point-of-use references** to online animations, simulations, video clips, and virtual labs that bring physics to life. Features include on-page media links, bookmarking, search, notes, and highlighting functionality. **Audio files** of the chapter summaries offer students an alternative way to access the content and enhance comprehension.



PuzzlePro™

This tool for creating crossword puzzles and word searches makes **learning vocabulary** words fun.



Interactive Concept Maps

Each chapter includes an interactive, advanced **graphic organizer** that shows the relationships among concepts covered and helps students develop logical thinking and study skills.

Convenient Access to Labs, Data Analysis, and STEM

How do students really *understand* science without *doing* science? HMH Florida *Physics* includes the most comprehensive lab resources with its wide variety of print and digital lab options for every classroom, along with the most robust data-analysis strand to help students develop these critical skills.

Laboratory Experiments

Over 200 Editable Labs!

Wide variety of labs located at point of use on **HMHScience.com**:

- Editable lab sheets
- Teacher notes and answer keys
- Referenced on Instruction and Intervention pages in Teacher Edition

Quick Labs

Reinforce concepts at point of use in the Student Edition; easy to prepare and easy to complete in less than one class period

Core Skill Labs

Provide practice of inquiry skills and scientific methods

Standard Labs

Designed to guide students through all stages of learning physics, from the initial exploration of concepts to their application—all reinforcing science concepts in the chapter

Open Inquiry Labs

Specifically designed to be short project-based labs that encourage students to collaborate, strategize, construct, and evaluate a lab challenge of their own creation

STEM Labs

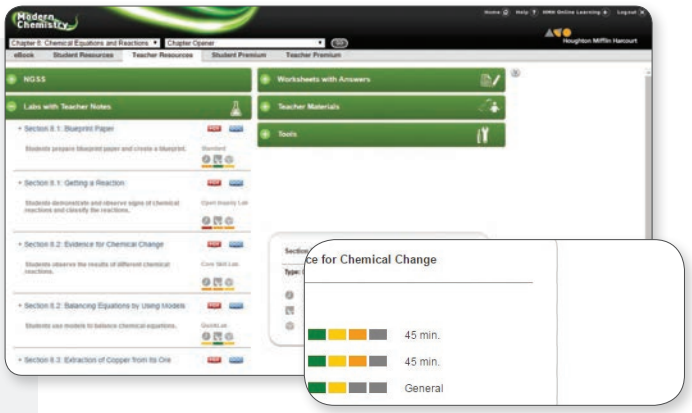
Problem-based labs that emphasize the engineering design process and incorporate team inquiry methodologies

Probeware Labs

Labs that integrate technology and physics concepts

Forensic Labs

Application labs that have students demonstrating laboratory skills through the exploration of forensic and applied science scenarios



Labeled Labs

Lab activities are labeled online by **class time**, **prep time**, and **difficulty** to help teachers choose appropriate activities to fit their classroom needs.

Smart Grapher

A powerful, easy-to-use online graphing tool with which students can use their own data to create line graphs, circle graphs, and more.

S.T.E.M. in the Student Edition

Features that include cutting-edge topics, like this **Engineering and Technology feature**, reflect our constantly expanding understanding of science through new discoveries.

S.T.E.M. ENGINEERING AND TECHNOLOGY

Hybrid Electric Vehicles

Charging stations for electric vehicles (EVs) are cropping up all over the United States. The EV is not new, however. It has been around since the 1800s. The first EVs were slow (14–20 mph) and had a limited range (30–40 miles). Due to the limited power infrastructure in the U.S., the EV was popular only among the wealthy in urban areas. At the beginning of the 20th century, improved road conditions gave travelers access to greater distances with more ease, but the EV still lacked range. Cars that burned gasoline in internal combustion engines (ICEs) didn't have this problem. By the 1910s, EV makers stopped production.

Defining the Problem: Range and Charging of EVs

In 1973, the Organization of Petroleum Exporting Countries (OPEC) cut off their oil exports for political and economic reasons. Gasoline shortages occurred and prices soared. In an attempt to lower our dependency on foreign oil, the U.S. began research and development programs on electric vehicles in earnest. In the 1990s, the EV started its comeback. As federal and state laws required greater fuel efficiency and lower emissions, automakers responded by developing electric and hybrid electric car models. EVs, however, were still unpopular and suffered the same design problems of limited range and lack of recharging facilities and capabilities. People had "range anxiety" about EVs: they feared that their EV would not make it to the next charging point and would strand the occupants.

In the late 2000s, a global economic depression caused many people to abandon their less fuel-efficient sport-utility vehicles (SUVs) for smaller, more fuel-efficient cars. In 2008, the first highway-capable, all-electric vehicle in serial production was released to the public. The Tesla Roadster boasted a driving range of 220 miles. The cost of this long-range EV was beyond many people's budgets. However, other EVs appeared on the market with driving ranges of 50–80 miles per charge, priced comparably with ICEs. So why aren't more people driving EVs?

Designing Solutions

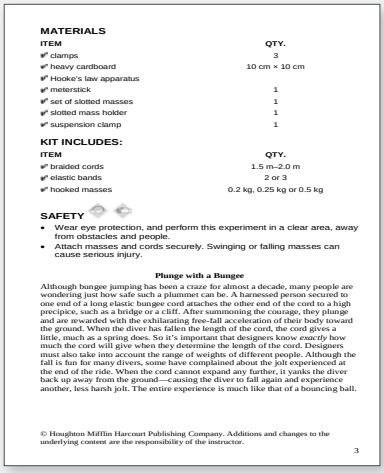
Although a recent study at Columbia University indicates that 95% of daily driving needs could be met with current EV ranges, Americans are still wary. Range anxiety could be partly addressed with engineering solutions such as increased battery life and driving range. Range anxiety may also be quelled by gaining consumer trust in the range reading number that glows on the car's dashboard.

Another engineering solution would be to provide convenient charging, which takes into account charging locations and charging time. Gas stations in the U.S.outnumber EV charging stations about 10 to 1. This infrastructure will no doubt grow as the demand for EV charging stations swells. Most charging of EVs is done overnight at the owner's home, at a relatively slow charging rate. During the day and on long-distance road trips, consumers want fast recharging of their EV batteries.

626

Data Analysis Support for Students

To help students develop the data analysis skills necessary to collect, graph, and analyze data like scientists, **HMHScience.com** includes resources to support the data analysis lesson in every chapter.



MATERIALS

ITEM	QTY.
clamps	3
heavy cardboard	10 cm × 10 cm
Hooke's law apparatus	
meterstick	1
set of slotted masses	1
slotted mass holder	1
suspension clamp	1

KIT INCLUDES:

ITEM	QTY.
braided cords	1.5 m–2.0 m
elastic bands	2 or 3
hooked masses	0.2 kg, 0.25 kg or 0.5 kg

SAFETY

- Wear eye protection, and perform this experiment in a clear area, away from obstacles and people.
- Attach masses and cords securely. Swinging or falling masses can cause serious injury.

Plunge with a Bungee

Although bungee jumping has been a craze for almost a decade, many people are wondering just how safe such a plummet can be. A harnessed person secured to one end of a long elastic bungee cord attaches the other end of the cord to a high precipice, such as a bridge or a cliff. After summoning the courage, they plunge and are rewarded with the exhilarating free-fall acceleration of their body toward the ground. When the diver has fallen the length of the cord, the cord gives a little, much as a spring does. So it's important that designers know *exactly* how much the cord will give when they determine the length of the cord. Designers must also take into account the range of weights of different people. Although the fall is fun for many divers, some have complained about the jolt experienced at the end of the ride. When the cord cannot expand any further, it yanks the diver back up away from the ground—causing the diver to fall again and experience another, less harsh jolt. The entire experience is much like that of a bouncing ball.

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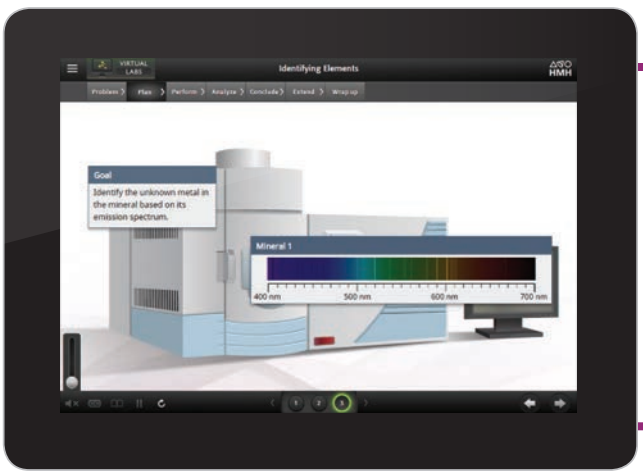
3

STEM Labs

10 STEM labs located throughout the program emphasize the **engineering design process.** These problem-based labs incorporate team inquiry methodologies.

Graphing Calculator Activities

HMH has partnered with Texas Instruments® to present nine **graphing activities** for use with the TI-Nspire® graphing calculator.



Scan here to view ***Virtual Labs***.

Virtual Labs

Students can hone their lab skills in a virtual environment using the comprehensive set of 24 labs online. Fun, safe, and highly interactive, these labs focus on experiments for which equipment and materials are often expensive or difficult to acquire.

Flexible **Assessment Tools** to Track Student **Progress**

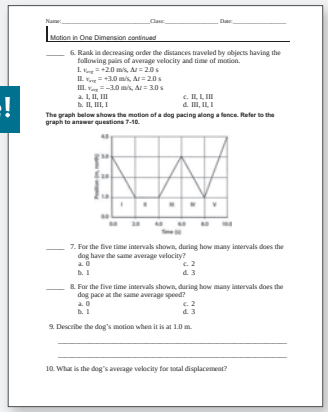
The comprehensive assessment options located on HMHScience.com bring together all HMH *Physics* assessment tools into one convenient place, giving you many choices for the best way to assess your students' learning.

EXAMVIEW® ASSESSMENT SUITE

ExamView® Banks

A complete ExamView Assessment Suite includes all assessment questions for the program and more than **1,900 additional questions** in **Bonus Banks**.

Editable!


Motion in One Dimension continued

6. Rank in decreasing order the distances traveled by objects having the following pairs of average velocity and time of motion.
I. v_{avg} = +2.0 m/s, Δt = 2.0 s
II. v_{avg} = +3.0 m/s, Δt = 2.0 s
III. v_{avg} = –3.0 m/s, Δt = 3.0 s
a. I, II, III c. II, I, III
b. II, III, I d. III, II, I

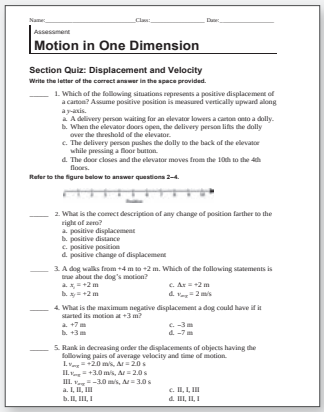
The graph below shows the motion of a dog pacing along a fence. Refer to the graph to answer questions 7-10.

7. For the five time intervals shown, during how many intervals does the dog have the same average velocity?
a. 0 c. 2
b. 1 d. 3

8. For the five time intervals shown, during how many intervals does the dog pace at the same average speed?
a. 0 c. 2
b. 1 d. 3

9. Describe the dog's motion when it is at 1.0 m.

10. What is the dog's average velocity for total displacement?


Assessment
Motion in One Dimension

Section Quiz: Displacement and Velocity
Write the letter of the correct answer in the space provided.

1. Which of the following situations represents a positive displacement of a carton? Assume positive position is measured vertically upward along a y-axis.
a. A delivery person waiting for an elevator lowers a carton onto a dolly.
b. When the elevator doors open, the delivery person lifts the dolly over the threshold of the elevator.
c. The delivery person pushes the dolly to the back of the elevator while pressing a floor button.
d. The door closes and the elevator moves from the 10th to the 4th floors.

Refer to the figure below to answer questions 2–4.

2. What is the correct description of any change of position farther to the right of zero?
a. positive displacement
b. positive distance
c. positive position
d. positive change of displacement

3. A dog walks from +4 m to +2 m. Which of the following statements is true about the dog's motion?
a. x_i = +2 m c. Δx = +2 m
b. x_f = +2 m d. v_{avg} = 2 m/s

4. What is the maximum negative displacement a dog could have if it started its motion at +3 m?
a. +7 m c. –3 m
b. +3 m d. –7 m

5. Rank in decreasing order the displacements of objects having the following pairs of average velocity and time of motion.
I. v_{avg} = +2.0 m/s, Δt = 2.0 s
II. v_{avg} = +3.0 m/s, Δt = 2.0 s
III. v_{avg} = –3.0 m/s, Δt = 3.0 s
a. I, II, III c. II, I, III
b. II, III, I d. III, II, I

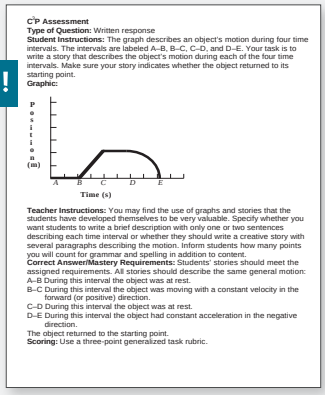
Section Quizzes

A 10-question multiple-choice and short-answer quiz for each section of the textbook. These are designed for student **formative assessment** to aid in remediation.

Alternative Assessments

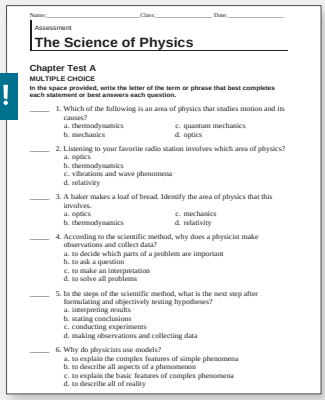
For students who benefit from **non-traditional assessments**, these tests provide another way of determining their understanding of physics facts, concepts, and principles.

Editable!


C²P Assessment
Type of Question: Written response
Student Instructions: The graph describes an object's motion during four time intervals. The intervals are labeled A–B, B–C, C–D, and D–E. Your task is to write a story that describes the object's motion during each of the four time intervals. Make sure your story indicates whether the object returned to its starting point.
Graphic:

Teacher Instructions: You may find the use of graphs and stories that the students have developed themselves to be very valuable. Specify whether you want students to write a brief description with only one or two sentences describing each time interval or whether they should write a creative story with several paragraphs describing the motion. Inform students how many points you will count for grammar and spelling in addition to content.
Correct Answer/Mastery Requirements: Students' stories should meet the assigned requirements. All stories should describe the same general motion:
A–B During this interval the object was at rest.
B–C During this interval the object was moving with a constant velocity in the forward (or positive) direction.
C–D During this interval the object was at rest.
D–E During this interval the object had constant acceleration in the negative direction.
The object returned to the starting point.
Scoring: Use a three-point generalized task rubric.

Editable!


Assessment
The Science of Physics

Chapter Test A
MULTIPLE CHOICE
In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

1. Which of the following is an area of physics that studies motion and its causes?
a. thermodynamics c. quantum mechanics
b. mechanics d. optics

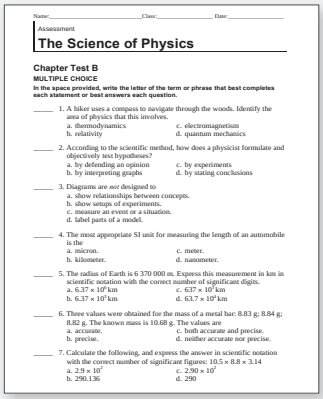
2. Listening to your favorite radio station involves which area of physics?
a. optics
b. thermodynamics
c. vibrations and wave phenomena
d. relativity

3. A baker makes a loaf of bread. Identify the area of physics that this involves.
a. optics c. mechanics
b. thermodynamics d. relativity

4. According to the scientific method, why does a physicist make observations and collect data?
a. to decide which parts of a problem are important
b. to ask a question
c. to make an interpretation
d. to solve all problems

5. In the steps of the scientific method, what is the next step after formulating and objectively testing hypotheses?
a. interpreting results
b. stating conclusions
c. conducting experiments
d. making observations and collecting data

6. Why do physicists use models?
a. to explain the complex features of simple phenomena
b. to describe all aspects of a phenomenon
c. to explain the basic features of complex phenomena
d. to describe all of reality


Assessment
The Science of Physics

Chapter Test B
MULTIPLE CHOICE
In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

1. A hiker uses a compass to navigate through the woods. Identify the area of physics that this involves.
a. thermodynamics c. electromagnetism
b. relativity d. quantum mechanics

2. According to the scientific method, how does a physicist formulate and objectively test hypotheses?
a. by defending an opinion c. by experiments
b. by interpreting graphs d. by stating conclusions

3. Diagrams are *not* designed to
a. show relationships between concepts.
b. show setups of experiments.
c. measure an event or a situation.
d. label parts of a model.

4. The most appropriate SI unit for measuring the length of an automobile is the
a. micron. c. meter.
b. kilometer. d. nanometer.

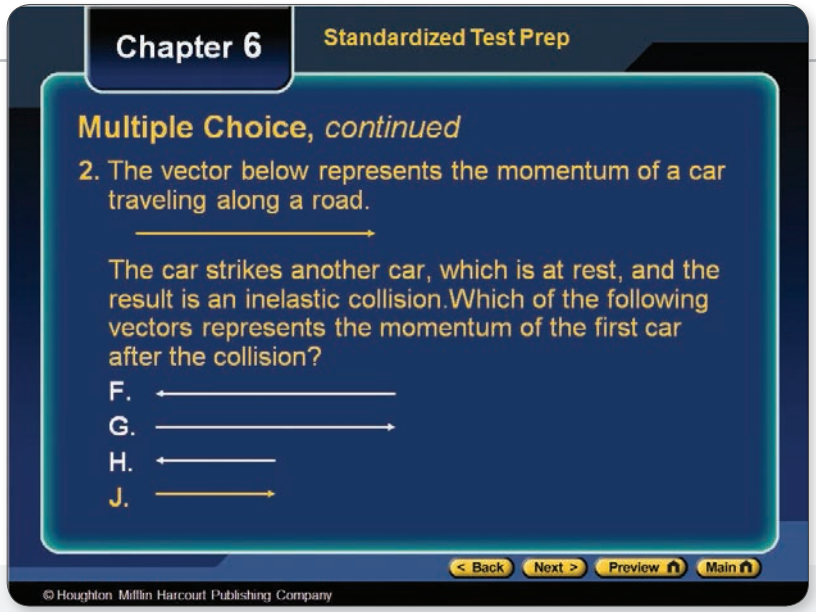
5. The radius of Earth is 6 370 000 m. Express this measurement in km in scientific notation with the correct number of significant digits.
a. 6.37×10^6 km c. 637×10^3 km
b. 6.37×10^3 km d. 63.7×10^4 km

6. Three values were obtained for the mass of a metal bar: 8.83 g; 8.84 g; 8.82 g. The known mass is 10.68 g. The values are
a. accurate. c. both accurate and precise.
b. precise. d. neither accurate nor precise.

7. Calculate the following, and express the answer in scientific notation with the correct number of significant figures: $10.5 \times 8.8 \times 3.14$
a. 2.9×10^2 c. 2.90×10^2
b. 290.136 d. 290

Chapter Tests A & B

Two **full-length** chapter tests of multiple-choice and short-answer questions. Test B is similar to but more challenging than Test A.

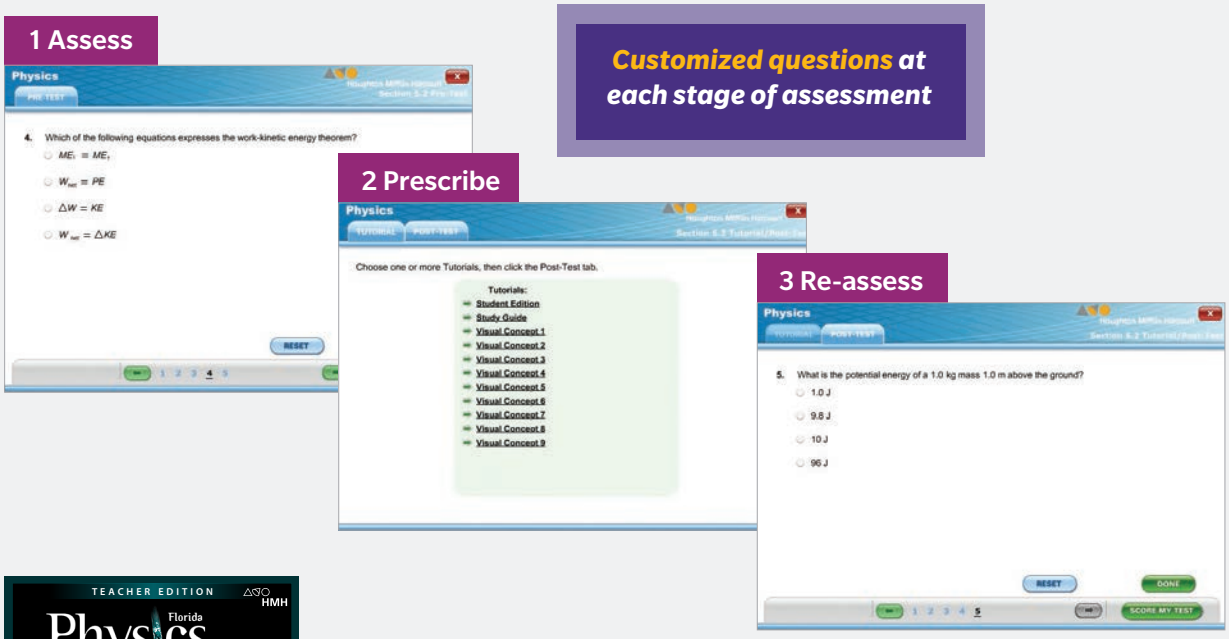


Standardized Test Prep PowerPresentations

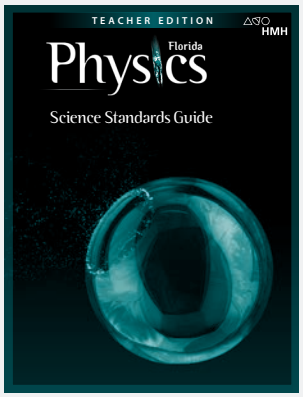
Two versions of test prep PowerPresentations are available per chapter for whole-class warm-ups or practice. Choose from either an Outline or Inquiry format.

Online Assessment System

This online system allows teachers to assign Section Quizzes and Chapter Tests to students. **Student performance** data are recorded for the teacher and **automated remediation** with reassessments is provided for section quizzes to help students achieve mastery.



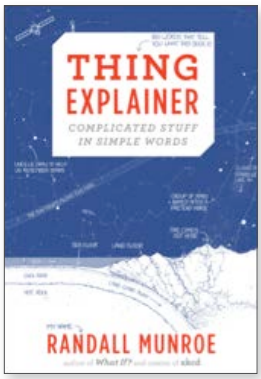
Customized questions at each stage of assessment



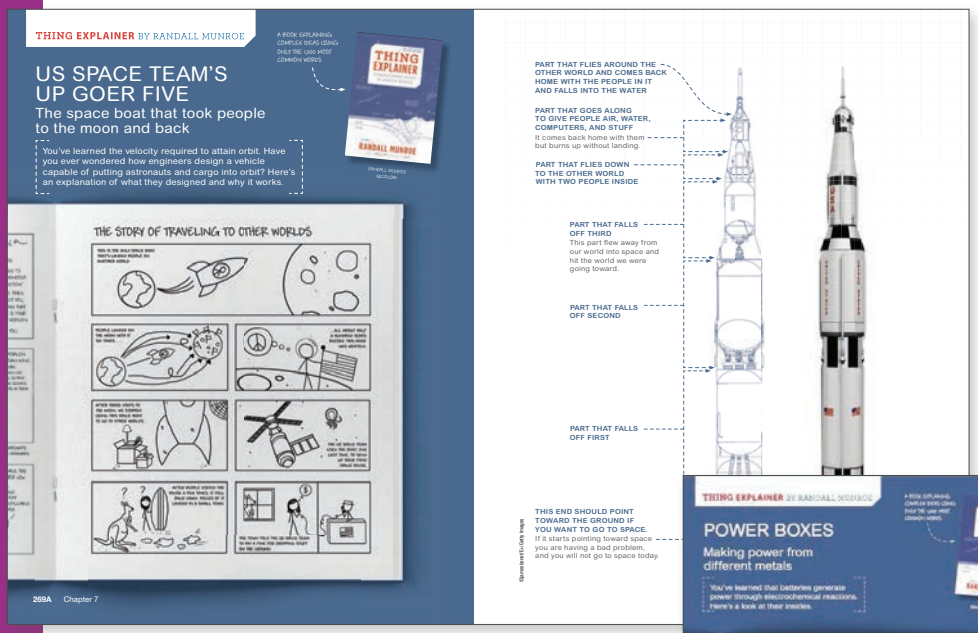
Florida Science Standards Guide (Student and Teacher Editions)

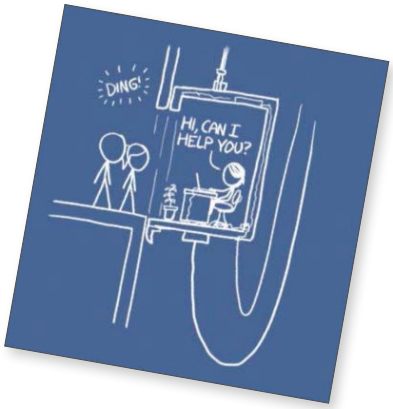
A two-page **Challenge Activity** for every physics standard, the **Florida Science Standards Guide** includes teacher notes and evaluation guidelines for each challenge as students perform a **lab, an investigation, a research project**, or another activity.

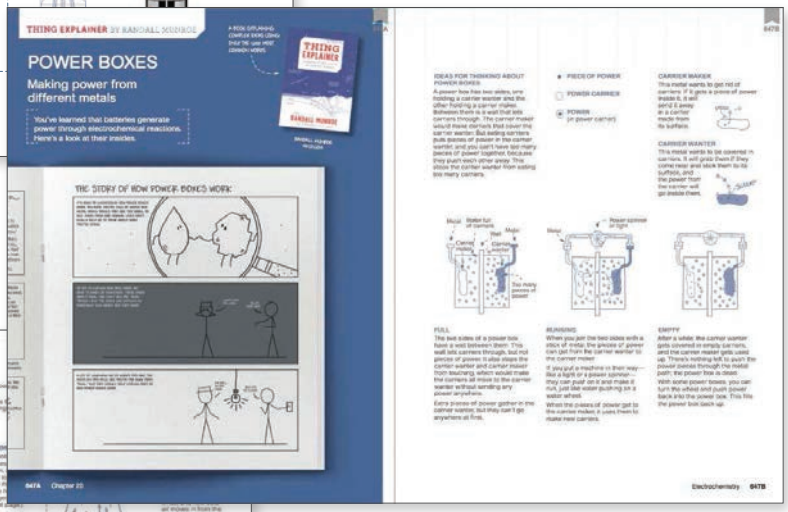
Thing Explainer Enriches HMH *Physics* and Simplifies Concepts

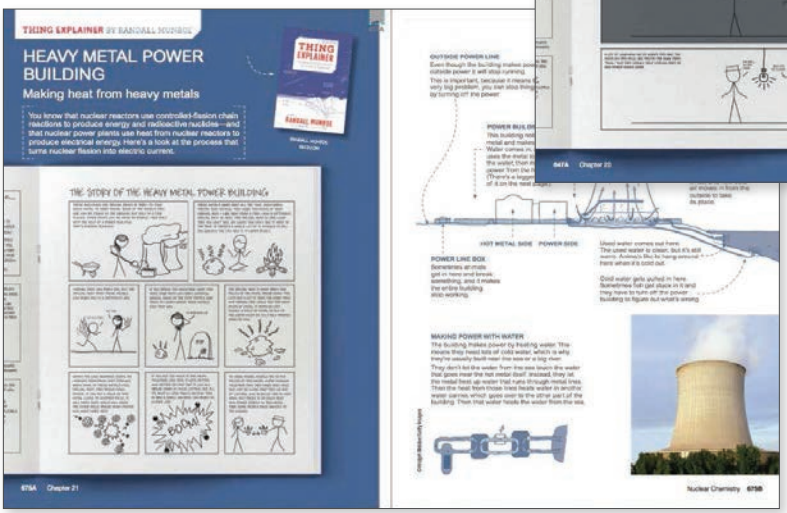


Through an exclusive partnership with former NASA roboticist **Randall Munroe**, author of the popular webcomic **xkcd.com** and *The New York Times* best-selling author of *What If?*, HMH has included blueprints from Munroe's new book, ***Thing Explainer***, in the print and digital editions of ***Physics***. Students will have access to Munroe's clear and engaging artwork and explanations as they delve into the mechanics of the scientific world. Aligned to the curriculum and integrated at point of use, Munroe's drawings humorously explain complex topics in easy-to-understand language.









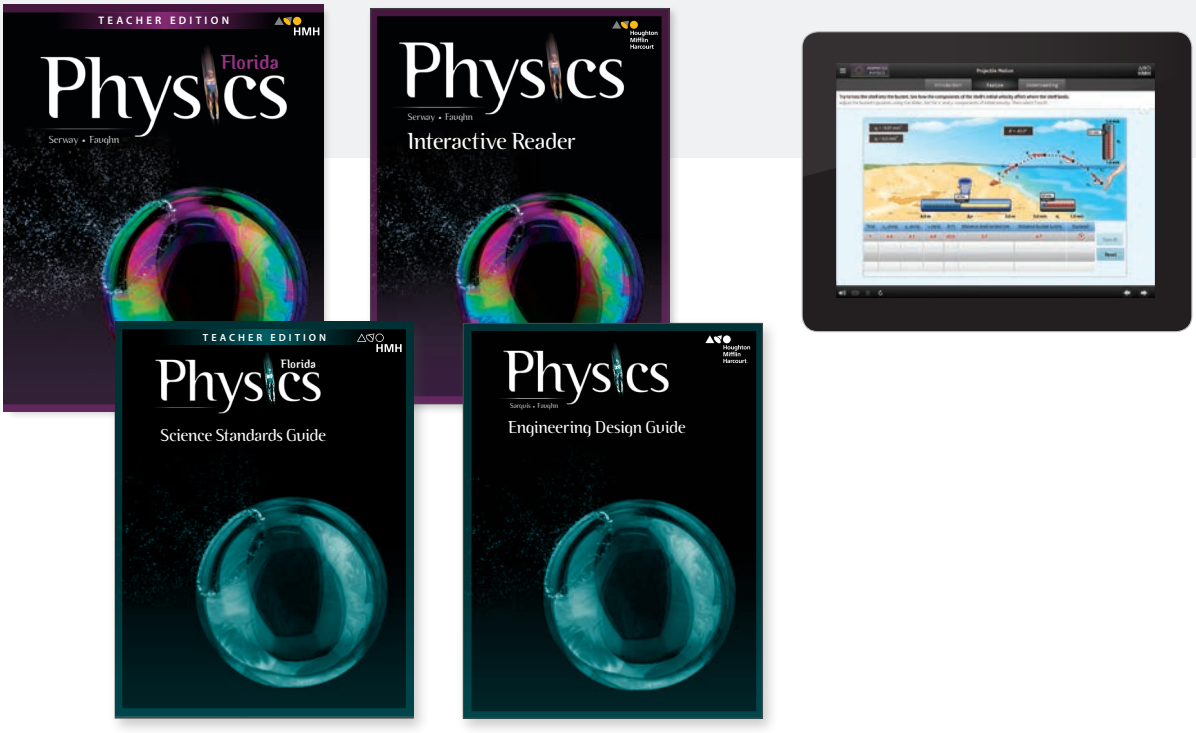
Florida *Physics* Components

Student Resources

- Florida Student Edition
- Student Edition eTextbook ePub
- Downloadable Student Edition PDF
- Interactive Online Student Edition
- *Physics* Interactive Reader
- *Physics* Engineering Design Guide Student Edition
- *Physics* Florida Science Standards Guide

Teacher Resources

- Florida Teacher Edition
- *Physics* Interactive Reader Answer Key
- *Physics* Engineering Design Guide Teacher Edition
- *Physics* Florida Science Standards Guide Teacher Edition
- Online Virtual Lab Class Package
- Online Teacher Management Center
- Downloadable Teacher Resource Tool



Why HMH *Physics?*

Aligned to the Florida Next Generation Sunshine State Standards

HMH Florida Science

Engaged Student Learning

- *On the Job* STEM Videos
- Virtual Labs
- Teacher Guide for Google Expeditions
- Animated Physics
- PhET Simulations
- STEM
- Engineering Design Guide
- Florida Science Standards Guide

The Best Balance of Problem Solving and Conceptual Instruction

- Interactive Demonstrations
- Solution Tutor
- Real World Sample Problems
- Interactive Reader
- *Thing Explainer*
- Concept Maps

Strongest Differentiated Instruction

- Online Assessment with Remediation
- Leveled Chapter Assessments
- Strategies for English Learners, Inclusion, Pre-AP, and Below-level Students

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