



SUMMIT K12

2024

DYNAMIC PHYSICS

Empowering ALL Texas Learners to Reach their Summit

**Built By Texas Educators
For Texas Educators**

Texas based publisher with curricula created by over 75 current and former Texas educators

**Built for Texas
TEKS-SEPs-RTCs-ELPS**

**Ready to
Learn More?**

Scan the QR code
to visit our website



SBOE Approved!

K-8 English, K-6 Spanish
Biology, Chemistry, Physics, IPC
100% TEKS/100% ELPS

Concise and Complete Teacher Supports

Instructional Resources
Video Resources
Supplemental Resources
Course Information

Teacher Resources

Dynamic Physics

- ☰ Cat 1: Introduction to Physics
- ☰ Cat 2: Linear Motion
- ☰ Cat 3: Projectiles
- ☰ Cat 4: Forces
- ☰ Cat 5: Gravitation and Circular Motion
- ☰ Cat 6: Work, Energy, and Power
- ☰ Cat 7: Momentum and Collisions
 - 7.1 Momentum and Impulse (P.7D)
 - Pacing Guide
 - Lesson Guide
 - Assessments
 - TEKS Lesson Video
 - Vocabulary Mastery
 - Study Guide
 - Study Guide Key
 - Interactive E-Poster
 - Momentum and Impulse (IPC.5C)
 - 7.2 Conservation of Momentum (P.7E)
- ☰ Cat 8: Electrostatics
- ☰ Cat 9: Circuits and Magnetism
- ☰ Cat 10: Waves and Sound
- ☰ Cat 11: Light and Optics
- ☰ Cat 12: Quantum Physics

7.1 Learning Activities

* Indicates Activities that Support the Anchoring Phenomenon

ANCHORING PHENOMENON	
Anchoring Phenomenon: Introduction and Initial Explanation	45 minutes
ENGAGE	
Phenomenon: Moment of Impact When Hitting a Baseball	10 minutes
* Activity: Broom Blitz	30 minutes
INVESTIGATE AND LEARN	
Demonstration: Momentum Depends on Mass	10 minutes
Discussion: Momentum vs. Inertia	5 minutes
* Comparative Investigation: Momentum of Dynamic Collisions	45 minutes
Discussion: Change in Momentum	10 minutes
Guided Practice: Introducing Impulse	25 minutes
* Demonstration: Egg Impulse Throw	15 minutes
Literacy Connection: Force of Impact	30 minutes
Guided Practice: Impulse-Momentum Theorem	15 minutes
Activity: Mythbusters Car Collision	30 minutes
Phenomenon Reflection: Moment of Impact When Hitting a Baseball	15 minutes
PRACTICE AND EXTEND	
Practice: Momentum and Impulse	45 minutes
Research: Do Helmets Prevent Concussions?	45 minutes
Comparative Investigation: Build a Bumper	2 days
Engineering Challenge: Mars Lander	3 days
Study Guide: Momentum and Impulse	30 minutes

TEKS P.7D

Core Vocabulary

change in momentum (Δp)	occurs when there is a change in an object's mass or velocity; caused by an impulse
force (F)	an interaction between two or more objects that causes a change in the motion of either one or both objects
impulse (J)	a force applied to an object over a given period of time that causes a change in momentum (Δp); can be calculated using the equation $J = \Delta p = F\Delta t$

SUMMIT K12

INSTRUCTIONAL RESOURCES

Pacing Guides
Lesson Guides
Assessments
TEKS Lessons/Videos
Vocabulary Mastery
Study Guides/Keys
Interactive E-Posters

VIDEO RESOURCES

Phenomena
TEKS Lesson Videos/Simulations
Texas Virtual Field Investigations
Kate the Chemist Labs

SUPPLEMENTAL RESOURCES

Introduction to Science
SEPs Background/Vocabulary
Science Literacy
Graphic Organizers

COURSE INFORMATION

Pacing Guide
5E Model
Phenomena
Science Lab Explorations
TEKS-SEPs-RTCs Crosswalk

TEACHER SUPPORTS INCLUDE:

- Lesson and Lab Guides
- Scope and Sequence
- Pacing Guides
- Reports and Dashboards
- Anchoring Phenomena Table
- 3D Teaching and Learning
- Image Bank
- Science E-Books
- Formative Assessments
- Year-Round Responsive Support
- Asynchronous Online Teacher Training
- Zoom and Onsite Professional Development

ASSESSMENT BANK

Date Created	Custom Assessment Name	Avg. Score	PLD	Assign
9/28/24	Unit 2 Linear Motion Review	65%	Approaches	
11/4/24	Unit 3 Projectiles Quiz	87%	Meets	
12/4/24	Unit 4 Forces Extra credit	92%	Masters	
1/12/25	Unit 7 Momentum and Collisions Test	81%	Meets	
2/3/25	Unit 8 Electrostatics	90%	Masters	
3/2/25	Dr. Kate's Unit 10 Waves and Sound Test	Start		

Robust assessment bank including new item types.

Kate the Chemist K-12 Video Series



Summit K12 has teamed up with UT Austin Professor and best-selling science author, Dr. Kate Biberdorf, to create Phenomena-based videos specifically for the 2024 Science TEKS.

- K-12 Phenomena-Based Videos
- Teacher Pre-Lab Prep Videos
- Student Pre-Lab Videos
- Full Length Virtual Science Lab Videos

K-12 Texas Virtual Field Investigations

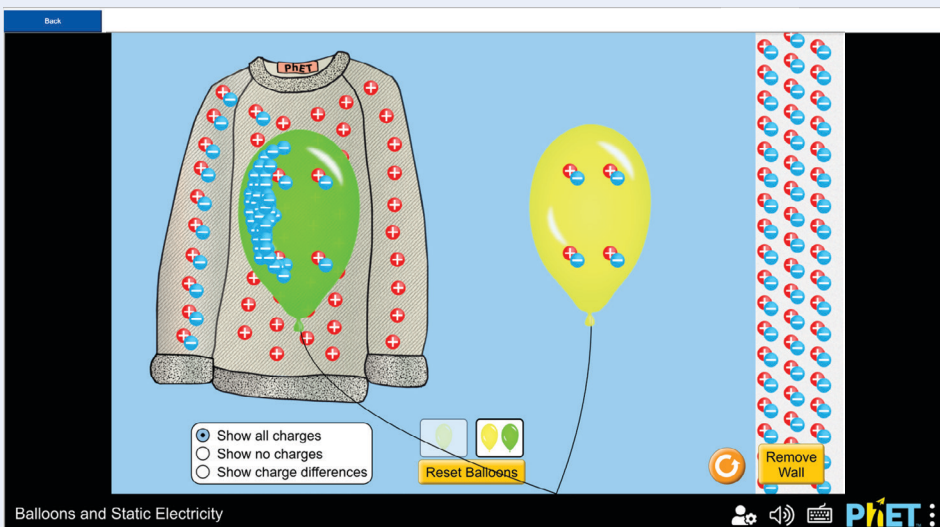
ALL K-12 students will have the opportunity to investigate phenomena throughout dozens of the most popular state parks and engineering marvels in Texas.

The 2024 TEKS Virtual Field Investigations series was created specifically for the Texas Science Adoption.



Hands on Investigations and Virtual Labs

Comparative, Descriptive, and Experimental Investigations to engage students and support sensemaking.




Includes Summit
K12 Lab Guides
developed to
support the 2024
Science TEKS.

High Quality TEKS Lesson Videos


Dynamic PHYSICS
TEKS P.5E, P.5F, P.5G

Newton's Laws

First Law – inertia
Balanced forces keep the same motion.



Second Law
$$a = \frac{F_{\text{net}}}{m}$$

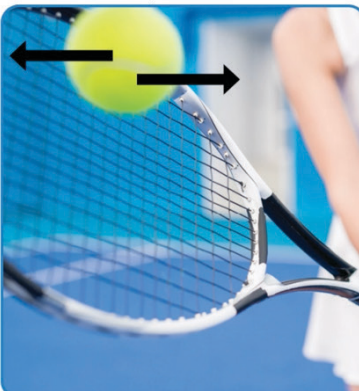


acceleration
force

action-reaction
inertia

equilibrium
mass

Third Law – action reaction
Forces always occur in pairs.




0:04 / 8:18
TEXAS-High School

- 100% of the Physics Content TEKS and SEPs are supported with high quality Lesson Videos
- 100% of the Videos were specifically created for 2024 K-12 Science TEKS by Texas Science Educators and authors along with a team of Professional Documentary Film Editors and storytellers

Dynamic PHYSICS
TEKS P.7D

G	$F = 2,500 \text{ N}$ $t = 0.015 \text{ s}$
U	$J = ?$
E	$J = Ft$
S	$J = (2,500)(0.015)$
S	$J = (2,500)(0.015)$



Impulse

A hammer hits a nail with 2,500 N of force to the right. If it impacts for 0.015 s, what is the impulse?

5:38 1x auto

Formative and Summative Assessments and Assessment Bank

Create a Custom Assessment

Assessment Name:

Number of Items:

Select Item Types:

Select Units to include:

% Dual-coded:

Unit	Unit
Unit 1 Introduction to Physics	Unit 7 Momentum and Collisions
Unit 2 Linear Motion	Unit 8 Electrostatics
Unit 3 Projectiles	Unit 9 Electric Circuits
Unit 4 Forces	Unit 10 Waves and Sound
Unit 5 Gravitation and Circular Motion	Unit 11 Light and Optics
Unit 6 Work, Energy, and Power	Unit 12 Quantum Physics

Select Options, then Create →

The NEW Assessment appears in the table and is ready to assign to your class



Assessment Bank

Date Created	Custom Assessment Name	Avg. Score	PLD	Assign
9/28/24	Unit 2 Linear Motion Review	65%	Approaches	<input type="button" value="Assign"/>
11/4/24	Unit 3 Projectiles Quiz	87%	Meets	<input type="button" value="Assign"/>
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2/3/25	Unit 8 Electrostatics	90%	Masters	<input type="button" value="Assign"/>
3/2/25	Dr. Kate's Unit 10 Waves and Sound Test	Start		<input type="button" value="Assign"/>

Includes Items Written for the 2024 TEKS

QUESTION 5

Which of these spectra is the spectrum for hydrogen? [P.1G]

Select one:

Gas Y

Gas Z

Gas X

Gas W

QUESTION 5

Miguel runs the 1600-meter track race for his high school track team, in which he must run four complete laps on the track to complete the race, starting and finishing at the same position on the track. What is Miguel's displacement at the end of the race?

Select one:

a. 800 m


b. 1,600 m

c. 0 m

d. 400 m

Vocabulary Mastery

TEKS Content Vocabulary | Science Tools Vocabulary |
SEPs & RTCs Vocabulary | Science Cognates



Baseball players are taught to swing the bat through the pitched ball to increase the Select of the hit.

- chemical energy
- electrical energy
- thermal energy
- impulse

impulse
impulsos
noun

Impulse (J) is the change in momentum (Δp) of an object as a force is applied to the object over a given period of time and can be solved using the equation $J = \Delta p = F\Delta t$.



cells, such as those in solar panels and digital cameras, use electrons from the photoelectric effect to power circuits and do work.

- Select
- Digital
- Photographic
- Quantum
- Photovoltaic

photovoltaic
fotovoltaico
adjective

Photovoltaic describes the conversion of light into electricity. Photovoltaic cells capture the electrons released by the photoelectric effect and use that electrical energy to do work.

Image Bank

- 500-1,000 images per grade level/subject
- Minimum 15-25 images per content TEKS
- Images for all SEPs Vocabulary Words
- Images for all Science Tools Vocabulary



Comprehensive Professional Development

Professional Development for ALL Stakeholders

Science Coordinators

Science Teachers

Principals & Superintendents

Parents/Guardians

Instructional Coaches

SCIENCE COORDINATOR IMPLEMENTATION PD

INITIAL TEACHER TRAINING

TEKS CHANGES BY GRADE LEVEL

TEACHING WITH PHENOMENA

DELIVERY MODELS

- Asynchronous, Zoom, and On-site

DIFFERENTIATION/ACCELERATION

SCIENCE-LITERACY/VOCABULARY

3D TEACHING & LEARNING

"Every student in Texas will be deeply involved in the doing of science and sensemaking."

"We need to prepare teachers to teach science in a different way, but we also need to help principals understand that [the new 3D] science classrooms are going to look and sound different than [current classrooms]."



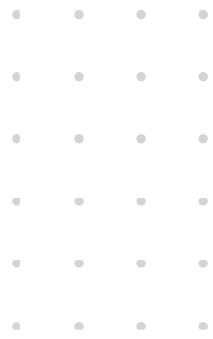
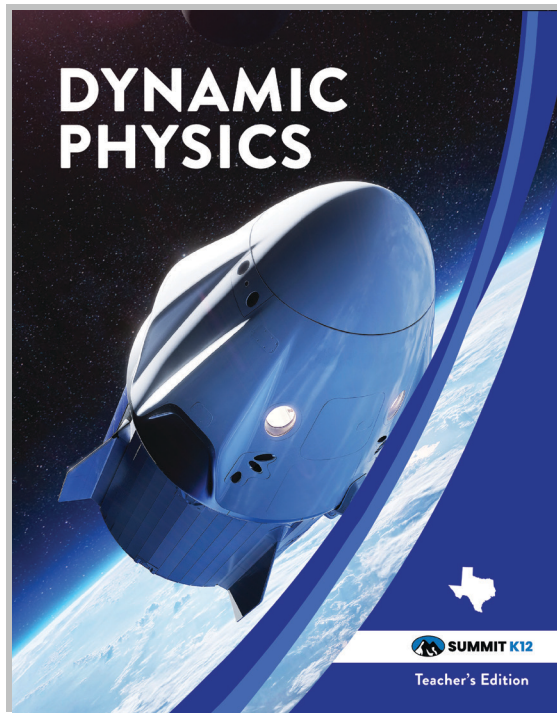
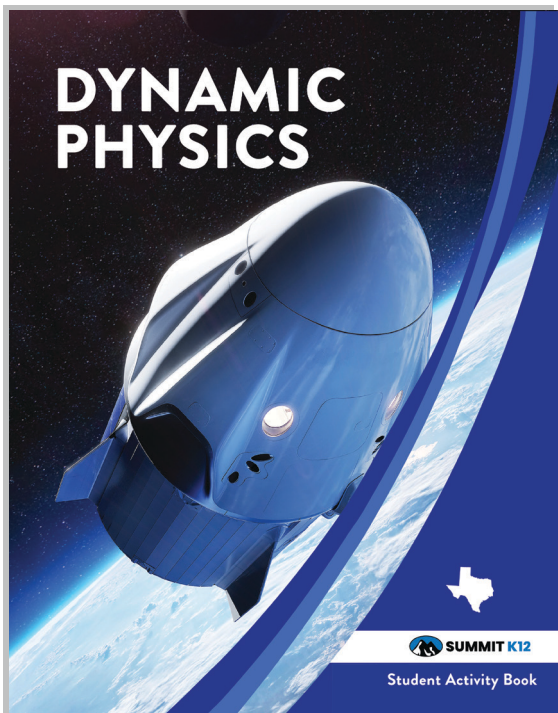
DR. LINDA COOK

Dr Linda Cook's experiences include Extensive Professional Development Work and presentations related to the Framework for K-12 Science Education; Ready, Set, Science.

- Summit K12 Professional Development Strategy and Implementation Planning
- NSELA Professional Development Committee 2023-2026
- NSELA President-Elect, President, and Past President 2020-2023
- President of the Metroplex Area Science Supervisors (2009-2010)
- Director of K-12 Science, Coppell ISD, 15 years
- PhD Curriculum and Instruction focused on Global Science Education

EASY • EFFICIENT • EFFECTIVE

3D Student Activity Books (Printed)



Student and Teacher Editions designed for **doing** science.

Convenient, Pre-packaged Classroom Lab Kits



In partnership with
Ward's Science



2024

DYNAMIC SCIENCE

State Adoption Pricing

K-8th Grade English/Spanish, Biology, Chemistry, Physics, IPC


\$6.95 PER STUDENT/YEAR*

*8-year Online Package with Print Teacher's Edition

 = **Best Value** (up to 50% off)


DYNAMIC SCIENCE ONLINE PACKAGES

COMPREHENSIVE 100% TEKS/ELPS STATE APPROVED

PACKAGE	TOTAL PRICE	PRICE PER YEAR
Online 1-Year	\$10.95	\$10.95
Online 2-Year	\$19.90	\$9.95
Online 4-Year	\$31.80	\$7.95
 Online 8-Year	\$55.60	\$6.95

DYNAMIC SCIENCE ONLINE + PRINT PACKAGES

COMPREHENSIVE 100% TEKS/ELPS STATE APPROVED + PRINT TE

PACKAGE	TOTAL PRICE	PRICE PER YEAR
Online 1-Year + Print TE	\$13.95	\$13.95
Online 2-Year + Print TE	\$23.90	\$11.95
Online 4-Year + Print TE	\$35.80	\$8.95
 Online 8-Year + Print TE	\$55.60	\$6.95

3D Student Consumable Print K-12 (from 1-8 Years, up to 25% off)

Science Lab Investigation Kits (starting at \$1,345 per classroom)