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

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Lesson Guide

7.1 Learning Activities

SUMMIT K12 Online

* 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 $J = \Delta p = F\Delta t$

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

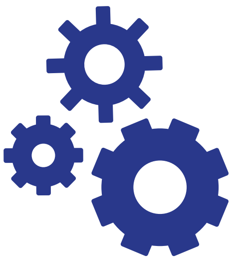
ASSESSMENT BANK

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.

Teaching Science through Phenomena using the 3D Model

Science TEKS Content Standards



Scientific and Engineering Practices

Recurring Themes and Concepts

TEKS-SEPs-RTCs Crosswalk

Subject	Category	SEPs	Dynamic Physics TEKS Lessons, Labs, Investigations, and Explore Activities																																						Totals
		TEKS	1.1	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	9.3	9.4	9.5	9.6	10.1	10.2	10.3	10.4	11.1	11.2	11.3	12.1	12.2	12.3	by SEPs
P	Scientific and engineering practices	P.1A	X		X						X	X							X		X	X	X		X						X	X				X						12
P	Scientific and engineering practices	P.1B	X		X						X	X				X		X	X		X	X	X	X	X				X			X		X		X			X	X		18
P	Scientific and engineering practices	P.1C	X		X	X			X	X								X				X	X	X		X								X	X	X						13
P	Scientific and engineering practices	P.1D	X	X		X		X		X		X											X	X		X	X	X	X	X	X		X	X	X	X	X	X		X		21
P	Scientific and engineering practices	P.1E	X			X			X	X	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	32
P	Scientific and engineering practices	P.1F	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	36
P	Scientific and engineering practices	P.1G		X	X	X				X	X			X	X		X				X		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	27
P	Scientific and engineering practices	P.1H	X													X									X		X				X											5
P	Scientific and engineering practices	P.2A					X	X													X						X			X										X		6
P	Scientific and engineering practices	P.2B	X	X	X	X			X			X		X		X	X	X	X	X	X	X	X		X	X	X	X	X			X	X	X			X	X	X	X	X	28
P	Scientific and engineering practices	P.2C	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X		35
P	Scientific and engineering practices	P.2D	X		X						X	X								X	X	X										X							X			9
P	Scientific and engineering practices	P.3A	X		X	X		X		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	34
P	Scientific and engineering practices	P.3B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	37
P	Scientific and engineering practices	P.3C										X	X		X				X		X	X	X	X	X			X		X			X	X		X	X				X	16
P	Scientific and engineering practices	P.4A	X		X	X		X		X	X	X	X	X		X			X		X	X	X		X						X	X	X				X		X	X		21
P	Scientific and engineering practices	P.4B	X																			X	X	X		X					X				X	X		X		X	X	11
P	Scientific and engineering practices	P.4C	X												X								X								X							X			X	6
P	Recurring themes and concepts			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	38
	Totals by Unit		15	7	12	11	5	8	7	10	11	13	8	7	9	10	8	9	11	7	14	12	16	12	13	11	11	10	10	9	12	12	11	11	9	11	10	11	10	12	10	**405**

Kate the Chemist K-12 Video Series

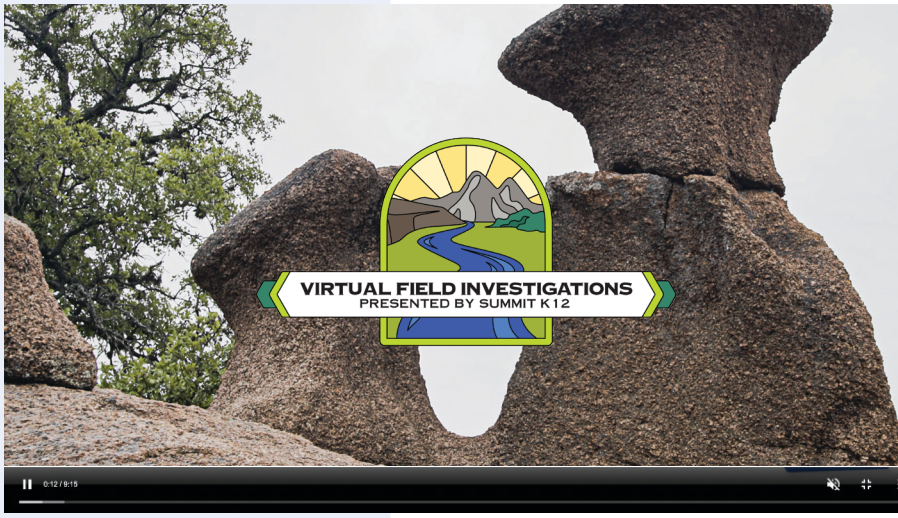
Summit K12 has teamed up with UT Austin Professor and best-selling science author, Dr. Kate Biberdorf, to create Phenomena-based videos specifically for the 2024 Science TEKS.

- 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

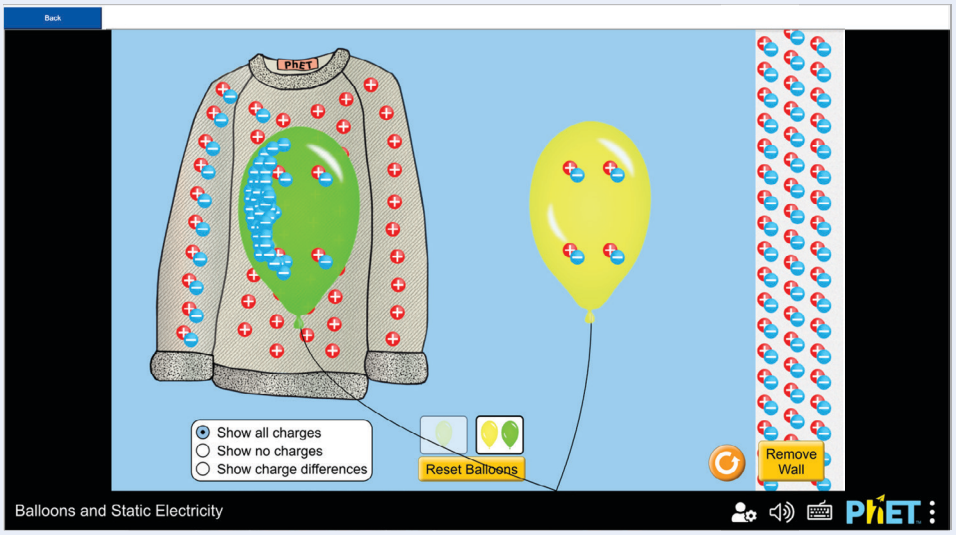
ALL K-12 students will have the opportunity to investigate phenomena throughout dozens of the most popular state parks and engineering marvels in Texas.

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



Hands on Investigations and Virtual Labs

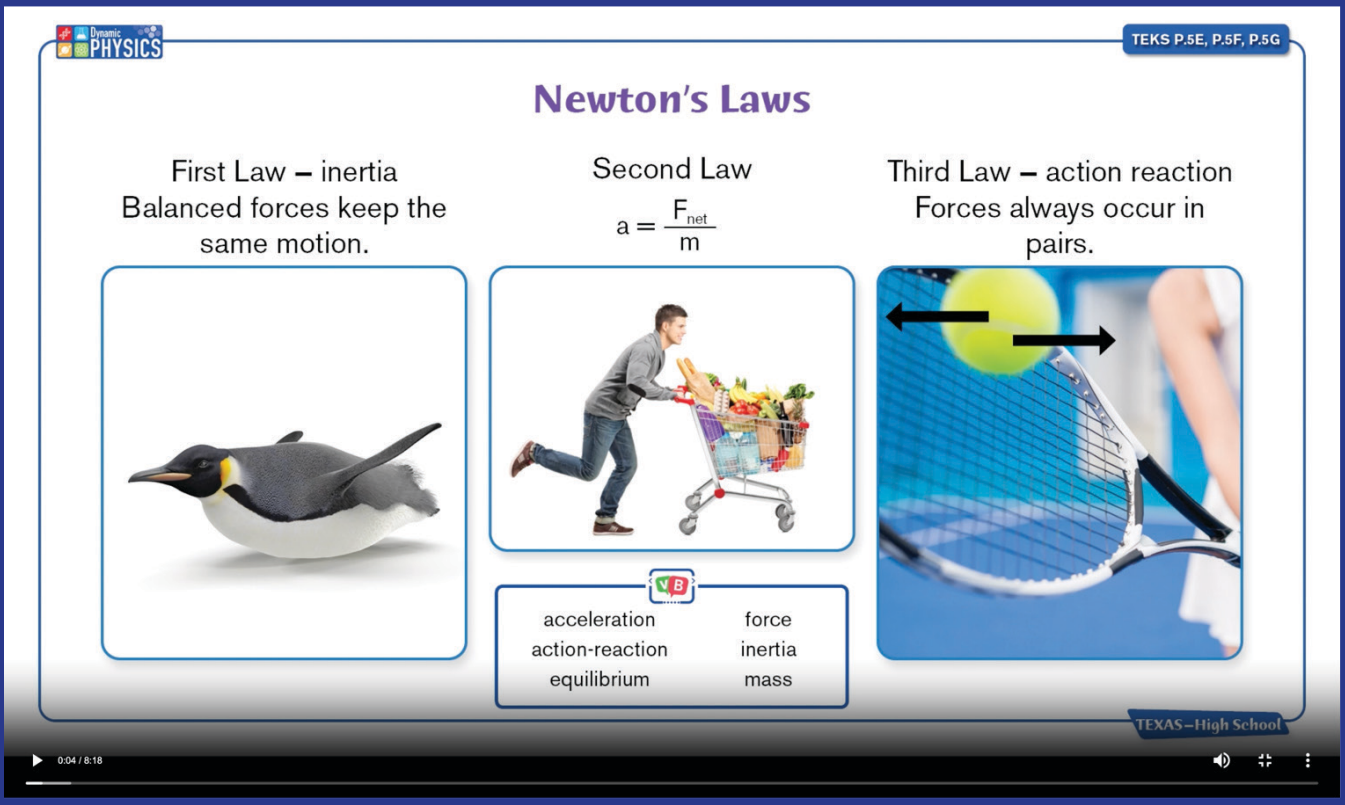
Comparative, Descriptive, and Experimental Investigations to engage students and support sensemaking.



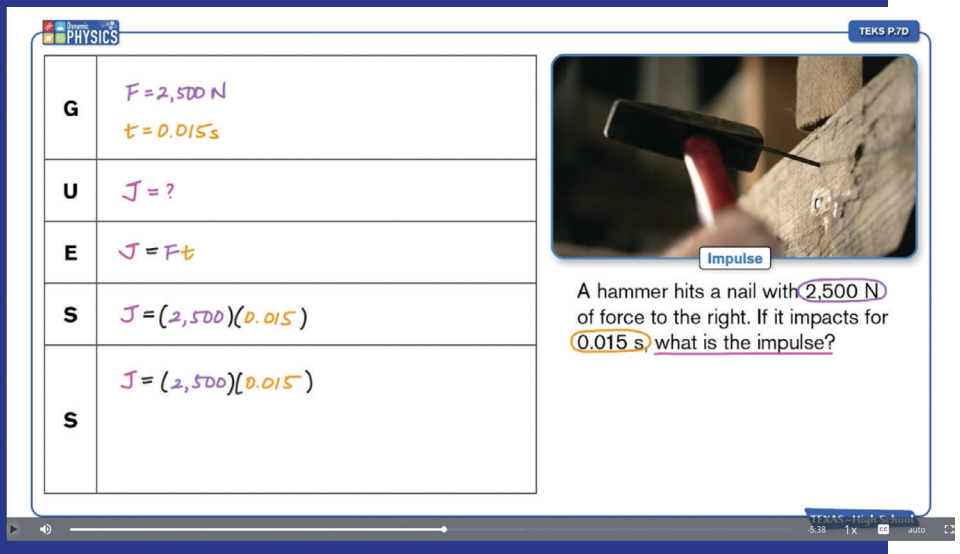
PhET™ INTERACTIVE SIMULATIONS

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

High Quality TEKS Lesson Videos



- 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



Formative and Summative Assessments and Assessment Bank

Create a Custom Assessment

Assessment Name: Dr. Kate's Unit 10 Waves and Sound Test

Number of Items: 10

Select Item Types: MC, MS, DD, SCR, MP

Select Units to include:

% Dual-coded: 40%

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 → 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	
11/4/24	Unit 3 Projectiles Quiz	87%	Meets	
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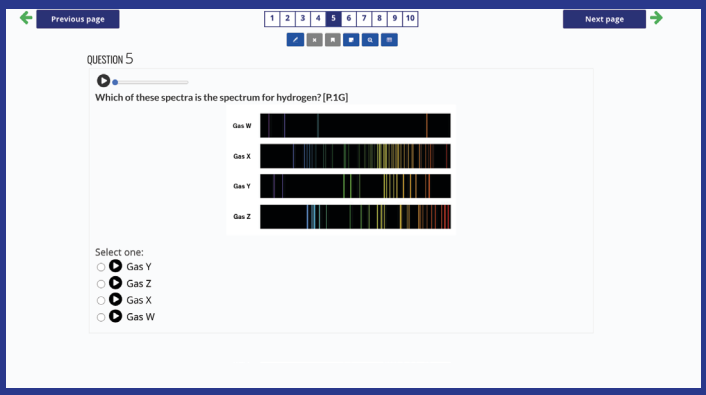
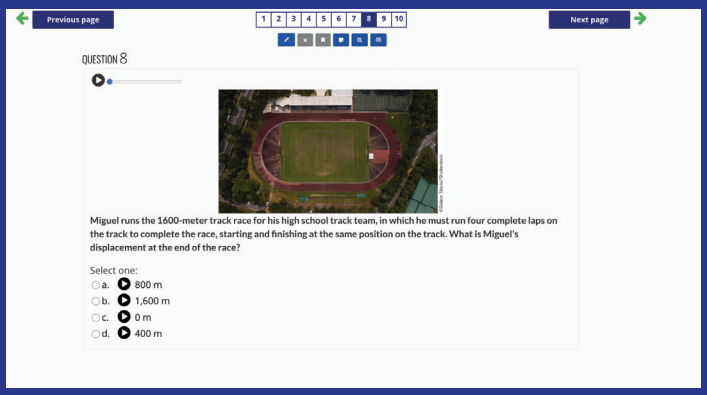
2/3/25	Unit 8 Electrostatics	90%	Masters	
→ 3/2/25	Dr. Kate's Unit 10 Waves and Sound Test	Start		

Create New

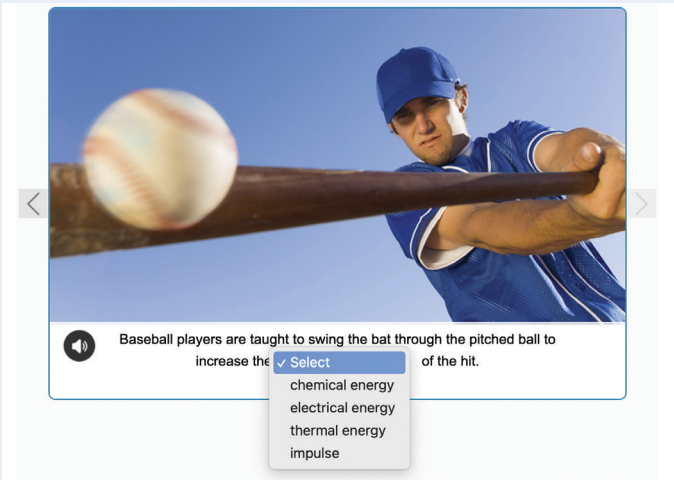
Includes Items Written for the 2024 TEKS

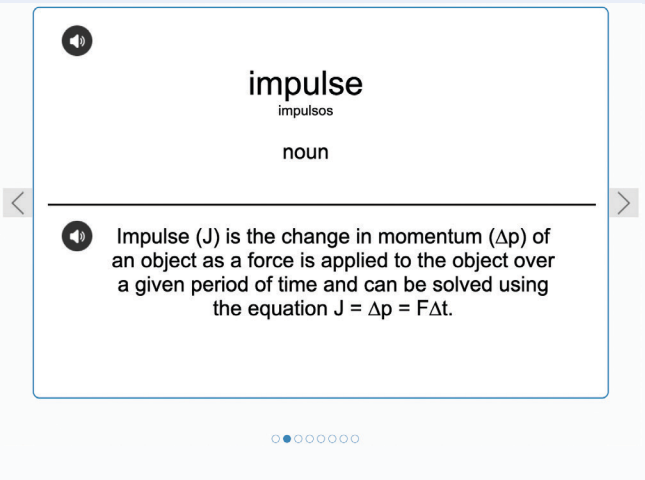




Vocabulary Mastery

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





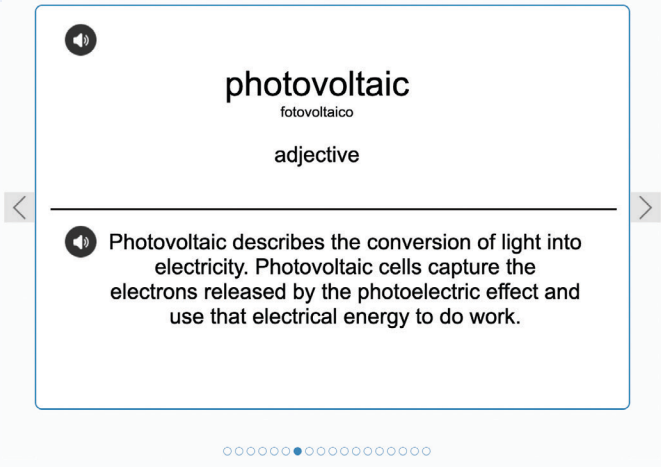


Image Bank

- 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]."

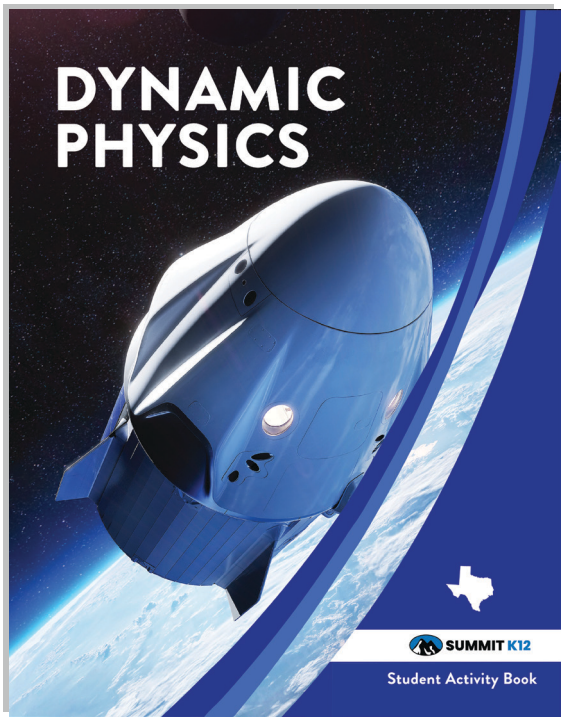
DR. LINDA COOK

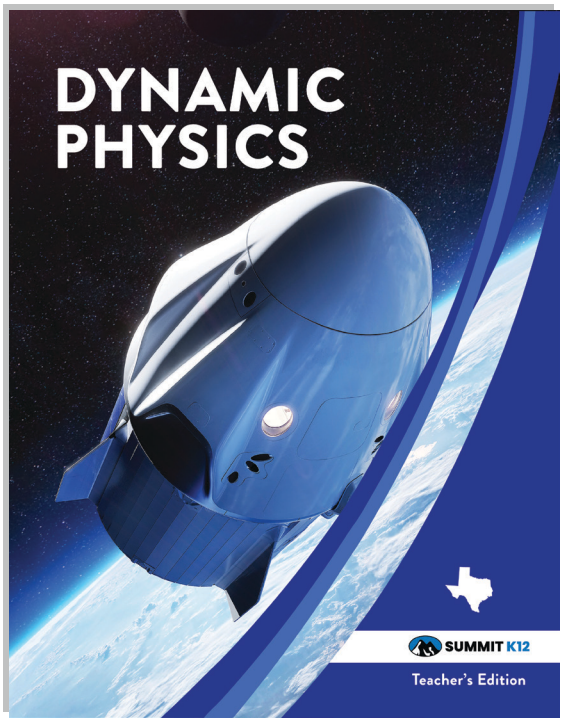
Dr Linda Cook's experiences include Extensive Professional Development Work and presentations related to the Framework for K-12 Science Education; Ready, Set, Science.

- 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

ward's science

In partnership with Ward's Science

SUMMIT K12

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)*