




SUMMIT K12

2024

DYNAMIC CHEMISTRY

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?**

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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 Chemistry

- Cat 1: Introduction to Chemistry
- Cat 2: Atomic Structure
- Cat 3: Periodic Table
 - 3.1 Development of the Periodic Table and Proper...
 - Pacing Guide
 - Lesson Guide
 - Assessments
 - TEKS Lesson Video
 - Vocabulary Mastery
 - Study Guide
 - Study Guide Key
 - Interactive E-Poster
 - Identify Metals, Nonmetals, Metalloids, and Rare ...
 - 3.2 Periodic Trends (C.5C)
 - 3.1 Atomic Structure Related to Bonding, Reactivit...
 - Atomic Structure Related to Bonding, Reactivity, a...
 - 3.2 Patterns of Elements' Physical and Chemical ...
 - Patterns of Elements' Physical and Chemical Prop...
- Cat 4: Ionic Bonding
- Cat 5: Covalent Bonding
- Cat 6: Stoichiometry
- Cat 7: Behavior of Gases
- Cat 8: Energy Changes in Reactions
- Cat 9: Water and Solutions
- Cat 10: Acids and Bases

Lesson Guide

3.1 Learning Activities

* Indicates Activities that Support the Anchoring Phenomenon

ANCHORING PHENOMENON	
Anchoring Phenomenon: Introduction and Initial Explanation	45 minutes
ENGAGE	
Phenomenon: An Impractical Spoon	10 minutes
Discussion: Periodic Properties	5 minutes
ESTABLISH RELEVANCE	
Activity: Development of the Periodic Table	30 minutes
INVESTIGATE AND LEARN	
Literacy Connection: Dmitri Mendeleev	30 minutes
* Activity: Your Color-Coded Periodic Table (Part 1)	30 minutes
Discussion: Organization of Periodic Table Quick Write	10 minutes
* Practice: Predicting Properties of Elements	20 minutes
Phenomenon Reflection: An Impractical Spoon	15 minutes
PRACTICE AND EXTEND	
Practice: Getting to Know the Elements	30 minutes
Literacy Connection: Vocabulary Mind Map	25 minutes
Activity: Element Bingo	40 minutes
Literacy Connection: Recycling Rare Earth Elements Is Hard	45 minutes
Literacy Connection: Women of the Periodic Table	50 minutes
Study Guide: Development of the Periodic Table and Properties of Families	25 minutes
EVALUATE	
Concept Mastery Assessments	20 min each

TEKS C.5A, C.5B

Core Vocabulary

alkali metals	elements in group 1 of the periodic table, excluding hydrogen, which tend to form cations with 1+ charges
alkaline earth metals	elements in group 2 of the periodic table, which tend to form cations with 2+ charges
chemical family or group	elements that share a column on the periodic table and tend to have similar chemical properties

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 Atomic Structure Review	65%	Approaches	
11/4/24	Unit 4 Ionic and Covalent Bonding Quiz	87%	Meets	
12/4/24	Unit 6 Stoichiometry extra credit	92%	Masters	
1/12/25	Unit 8 Energy Changes in Reactions Test	81%	Meets	
2/3/25	Unit 10 Acids and Bases Review	90%	Masters	
3/2/25	Dr. Kate's Behavior of Gases Unit 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

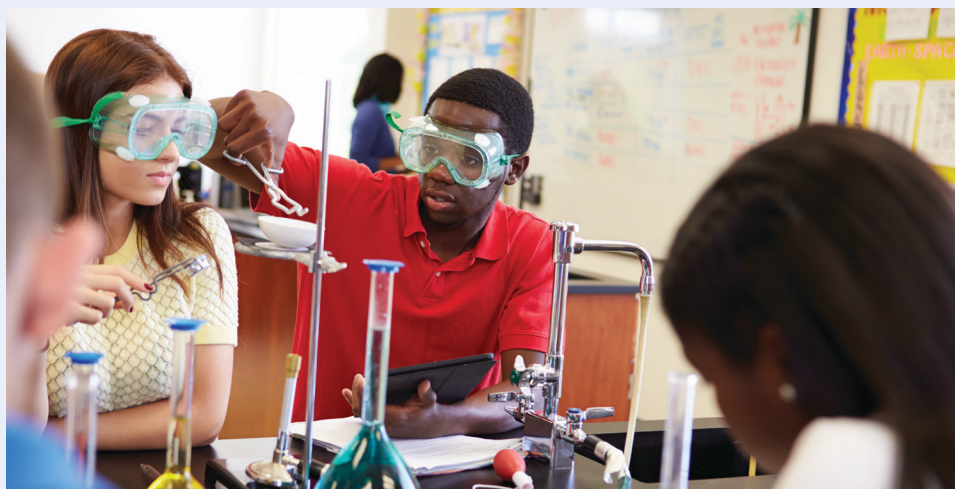
ALL K-12 students will have the opportunity to investigate phenomena throughout dozens of the most popular state parks and engineering marvels in Texas.

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 CHEMISTRY **TEKS C.5B**

Properties of Families of the Periodic Table

1 **18**

1 H 2 He

2 Li Be B C N O F Ne

3 Na Mg Al Si P S Cl Ar

4 K Ca

Periods are the horizontal rows that move across the periodic table from left to right.

Families or groups are the vertical columns on the periodic table that move up or down.

alkali metals	metalloids	lanthanides
alkaline earth metals	nonmetals	actinides
transition metals	halogens	unknown
post-transition metals	noble gases	

TEXAS—High School

0:05 / 9:04

- 100% of the Chemistry 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 CHEMISTRY **TEKS C.7A, C.7B**

Covalent Compounds: Bonding, Naming, and Formula Writing

covalent bonds share electrons

Covalent bonds can be formed between nonmetals and metalloids.

no ions

nonelectrolyte solution

Covalent bonds are not as strong as ionic bonds.

nonpolar compound → **polar compound**

nonpolar solvent polar solvent

Covalent compounds dissolve in solvents with similar polarity.

covalent bonds

δ^+ A — B δ^-

polar covalent bond

unequal sharing of electrons

B — B

nonpolar covalent bond

equal sharing of electrons

according to bond polarity

no conductivity

nonelectrolyte

Covalent compounds tend to have lower melting points and are nonelectrolytes.

TEXAS—High School

0:03 / 14:18

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 Intro to Chemistry	Unit 6 Stoichiometry
Unit 2 Atomic Structure	Unit 7 Behavior of Gases
Unit 3 Periodic Table	Unit 8 Energy Changes in Reactions
Unit 4 Ionic Bonding	Unit 9 Water and Solutions
Unit 5 Covalent Bonding	Units 10 Acids and Bases

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 Atomic Structure Review	65%	Approaches	<input type="button" value="🔒"/>
11/4/24	Unit 4 Ionic and Covalent Bonding Quiz	87%	Meets	<input type="button" value="🔒"/>
12/4/24	Unit 6 Stoichiometry extra credit	92%	Masters	<input type="button" value="🔒"/>
1/12/25	Unit 8 Energy Changes in Reactions Test	81%	Meets	<input type="button" value="🔒"/>
2/3/25	Unit 10 Acids and Bases Review	90%	Masters	<input type="button" value="🔒"/>
3/2/25	Dr. Kate's Behavior of Gases Unit Test	Start		<input type="button" value="🔒"/>

Includes Items Written for the 2024 TEKS

QUESTION 4

This experiment led to the discovery of which subatomic structure? [C.3A]

Select one:

- a. orbitals
- b. neutrons
- c. electron cloud
- d. nucleus


QUESTION 8

The images below show different models of the atom throughout history. Identify the correct name for each model. Move ONE correct answer to each box. [C.4B]

Rutherford Quantum Thomson Dalton Bohr

Vocabulary Mastery

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




Select is the energy stored or released as a chemical reaction occurs.

- Kinetic energy
- Electrical energy
- Chemical energy
- Potential energy

chemical energy
energía química

noun

Chemical energy is a type of potential energy in chemical compounds released or transformed during chemical reactions.



Aqueous solutions of lead (II) nitrate and sodium iodide were mixed, forming a yellow insoluble substance. This is an example of a(n)

Select

- acid-base reaction.
- precipitation reaction.
- combustion reaction.
- oxidation-reduction reaction.

precipitation reaction
reacción de precipitación

noun

A precipitation reaction is a reaction in which two solutions of soluble ionic salts are mixed and form an insoluble salt known as a precipitate.

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]."



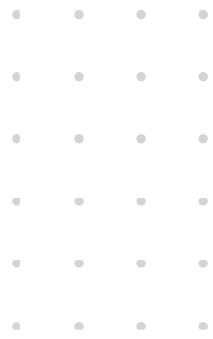
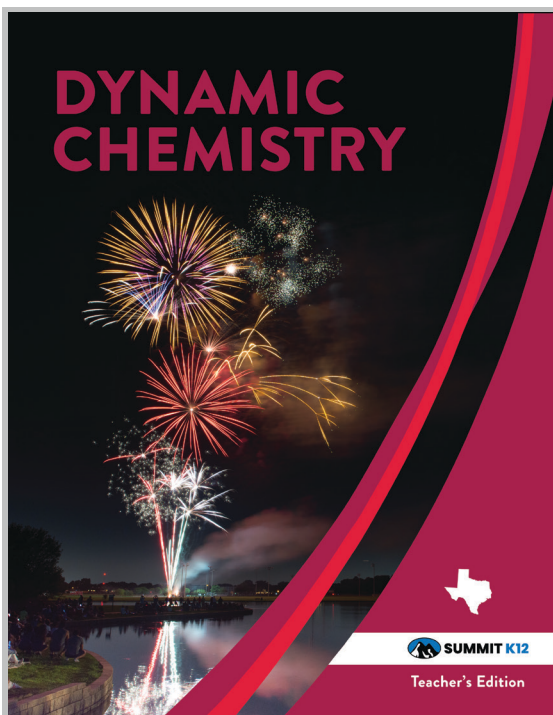
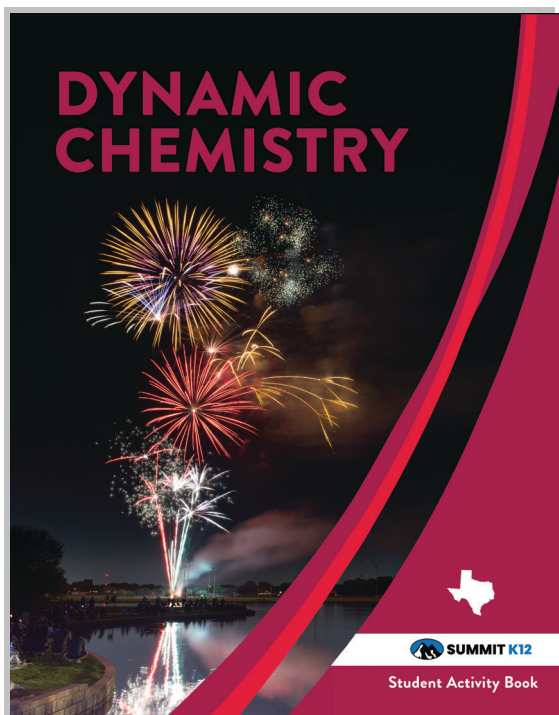
DR. LINDA COOK

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

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

Convenient, Pre-packaged Classroom Lab Kits



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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)