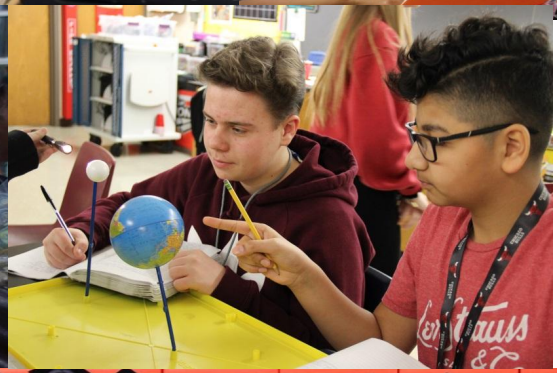


U46

ACADEMIC
SUCCESS
FOR ALL

School District U-46

2026-2027

Chemistry and Physics

Board of Education Presentation

Presenters

Brian Tennison, Assistant Superintendent of Teaching and Learning
Celia Banks, Director of Curriculum and Instruction
Deb McMullen, Coordinator for K-12 Science & Planetarium
Frankie Valenzia, Secondary Science Instructional Coach

March 16, 2026

U46 ACADEMIC SUCCESS FOR ALL

Purpose

This proposal seeks funding for the adoption of new resources and professional learning for Chemistry and Physics courses across all U-46 high schools.

Alignment to Strategic Plan

GOAL #1

Building Early Academic & Social-Emotional Foundations

GOAL #2

Safety, Sense of Belonging, & Inclusion

GOAL #3

Academic Growth & Mastery

GOAL #4

Ready to Embrace a Diverse & Changing World

Rationale

The current Chemistry and Physics resources are nearing contract expiration or are out of print.

A comprehensive needs assessment for the courses revealed significant challenges in aligning teaching practices, assessments, and curriculum with the Next Generation Science Standards (NGSS) and the U-46 Science Curriculum.

Key issues identified include misalignment with NGSS standards, insufficient use of phenomena-based instruction, and a critical need for professional learning to support effective implementation of the Board-approved curriculums.

Teacher Feedback

Teacher Name	Teaching Assignment	School
Charlene Brennan	Biology, Chemistry SPED	Streamwood HS
Jesse Bossenga	Earth & Space Science, Physics	South Elgin HS
Alicia Choi	Biology, Environmental Science	DREAM Academy
Julia Garcia Trilla	DL Chemistry, DL Physics	Elgin HS
Victoria Griffin	Chemistry, AP Chemistry, IB Chemistry	Elgin HS
Joe Kellenberger	Physics, Earth & Space Science	U-46 Planetarium
Katie Larsen	Biology, Chemistry, Physics SPED	Bartlett HS
Brittney Mallen	Environmental Science, AP Environmental Science, IB Environmental Science	Elgin HS
Devangi Sapra	Transition Science, ELL Chemistry, Physics	Bartlett HS
Matthew Scotkovsky	Chemistry, IPS	Dream Academy
Joann Sharp	Biology, Chemistry, Environmental Science	Streamwood HS

Teacher Feedback

Teacher Name	Teaching Assignment	School
Mark Bohlin	Physics	Larkin HS
Xaquin Rodiles Alvarez	DL Physics	Elgin HS
Mike Kielhack	Physics	Bartlett HS
Devangi Sapra	ML Physics	Elgin HS
Don Selusnik	Chemistry	South Elgin HS
Sharon Davids	ML Chemistry	Elgin HS
Dalibed DeJesus	Chemistry	Larkin HS
Carlos Segura Peris	DL Chemistry	Larkin HS
Devangi Sapra	ML Chemistry	Bartlett HS
Matthew Scotkovsky	Chemistry, IPS	Dream Academy
Eric Peterson	Chemistry	Streamwood HS

Process Timeline

April 2025 - Teachers provided notice they wanted to Opt-In.

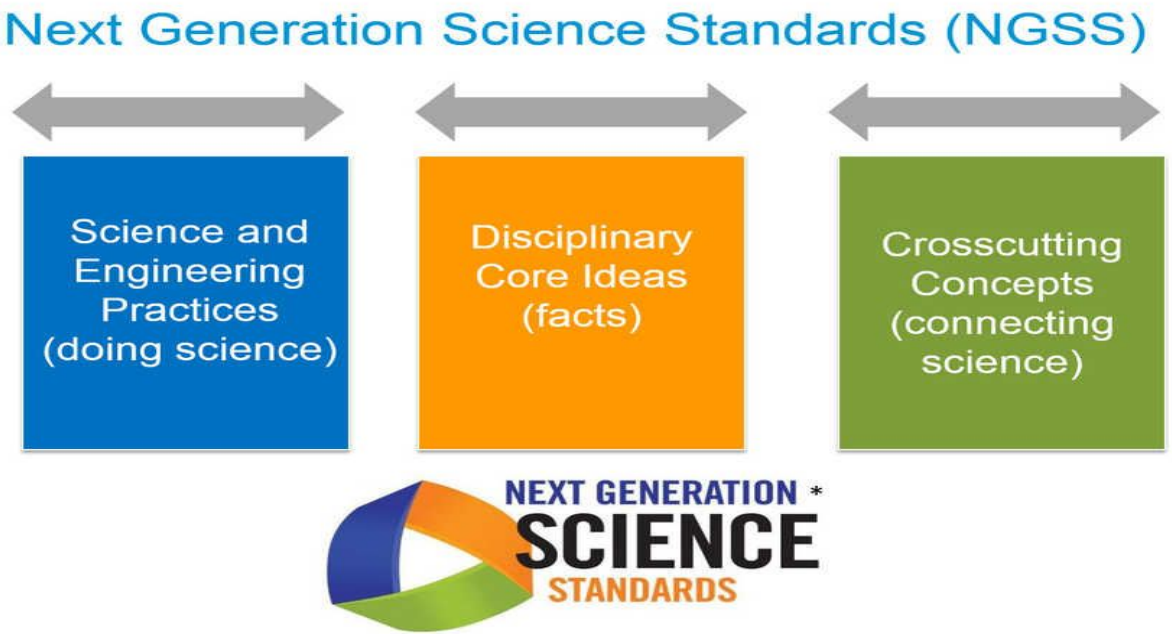
Teachers have been participating in regular professional learning.

Teachers have been participating in Meetups to provide feedback and problem solve.

Data has been collected and shared to measure how the two groups of teachers are aligning to the board approved curriculum.

- Opt-In Group
- Teachers who did not Opt-in this year

Standards

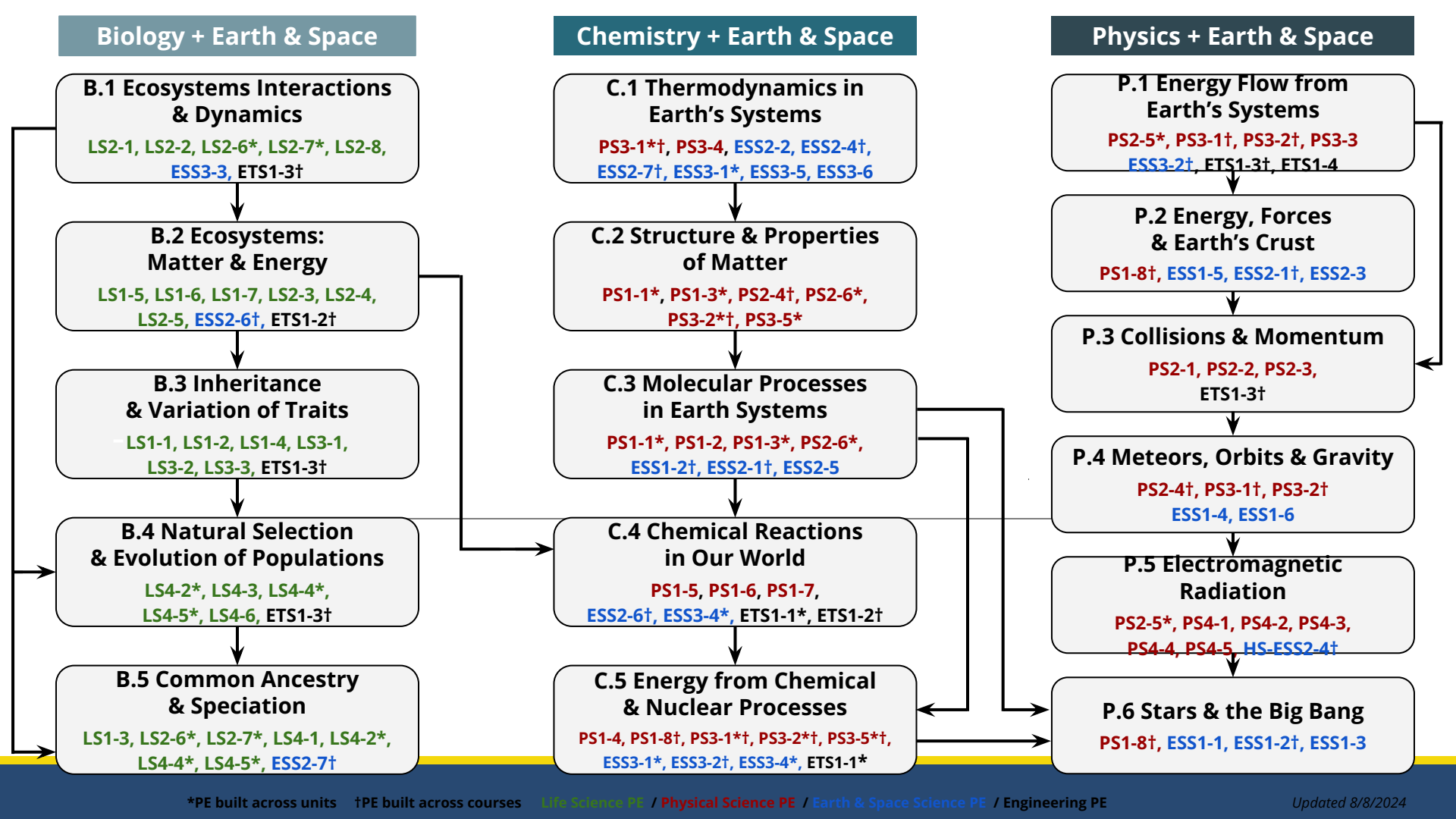

Next Generation Science Standards (NGSS)
Science and Engineering Practices (doing science)
Disciplinary Core Ideas (facts)
Crosscutting Concepts (connecting science)
NEXT GENERATION *
SCIENCE
STANDARDS

Program Overview

There are no changes to the objectives, content, grade levels, or prerequisites for Chemistry and Physics.

- Freshman are enrolled in Biology
- Sophomores are typically enrolled in Chemistry
- Juniors are typically enrolled in Physics

Science courses are required for high school graduation. Our goal is to ensure our science curriculum prepares students for post-secondary success.


Biology + Earth & Space
B.1 Ecosystems Interactions & Dynamics
LS2-1, LS2-2, LS2-6*, LS2-7*, LS2-8, ESS3-3, ETS1-3†
B.2 Ecosystems: Matter & Energy
LS1-5, LS1-6, LS1-7, LS2-3, LS2-4, LS2-5, ESS2-6†, ETS1-2†
B.3 Inheritance & Variation of Traits
LS1-1, LS1-2, LS1-4, LS3-1, LS3-2, LS3-3, ETS1-3†
B.4 Natural Selection & Evolution of Populations
LS4-2*, LS4-3, LS4-4*, LS4-5*, LS4-6, ETS1-3†
B.5 Common Ancestry & Speciation
LS1-3, LS2-6*, LS2-7*, LS4-1, LS4-2*, LS4-4*, LS4-5*, ESS2-7†
Chemistry + Earth & Space
C.1 Thermodynamics in Earth's Systems
PS3-1*†, PS3-4, ESS2-2, ESS2-4†, ESS2-7†, ESS3-1*, ESS3-5, ESS3-6
C.2 Structure & Properties of Matter
PS1-1*, PS1-3*, PS2-4†, PS2-6*, PS3-2*†, PS3-5*
C.3 Molecular Processes in Earth Systems
PS1-1*, PS1-2, PS1-3*, PS2-6*, ESS1-2†, ESS2-1†, ESS2-5
C.4 Chemical Reactions in Our World
PS1-5, PS1-6, PS1-7, ESS2-6†, ESS3-4*, ETS1-1*, ETS1-2†
C.5 Energy from Chemical & Nuclear Processes
PS1-4, PS1-8†, PS3-1*†, PS3-2*†, PS3-5*†, ESS3-1*, ESS3-2†, ESS3-4*, ETS1-1*
Physics + Earth & Space
P.1 Energy Flow from Earth's Systems
PS2-5*, PS3-1†, PS3-2†, PS3-3 ESS3-2†, ETS1-3†, ETS1-4
P.2 Energy, Forces & Earth's Crust
PS1-8†, ESS1-5, ESS2-1†, ESS2-3
P.3 Collisions & Momentum
PS2-1, PS2-2, PS2-3, ETS1-3†
P.4 Meteors, Orbits & Gravity
PS2-4†, PS3-1†, PS3-2† ESS1-4, ESS1-6
P.5 Electromagnetic Radiation
PS2-5*, PS4-1, PS4-2, PS4-3, PS4-4, PS4-5, HS-ESS2-4†
P.6 Stars & the Big Bang
PS1-8†, ESS1-1, ESS1-2†, ESS1-3
*PE built across units
†PE built across courses
Life Science PE / Physical Science PE / Earth & Space Science PE / Engineering PE
Updated 8/8/2024

Recommended Resources

- Adopt OpenSciEd Open Educational Resource (OER) model for Chemistry and Physics.

- openscied.org is a high-quality, research-based science curriculum designed to align with the K-12 Framework for Science Education and the Next Generation Science Standards (NGSS).

Implementation Plan

2025-2026
- Implement New Curriculum & Resources for Biology and the pilots of Chemistry and Physics
- Job embedded Professional Learning (PL) and Support
- Utilize Common Assessment Data to make shifts in instruction & PL
- Utilize Resource Data to make shifts in instruction & PL
- Voluntary Summer Professional Learning Offered
- Review Chemistry and Physics Pilots

2026-2027
- Implement Curriculum & Resources
- Job embedded Professional Learning (PL) and Support
- Utilize Common Assessment Data to make shifts in instruction & PL
- Utilize Resource Data to make shifts in instruction & PL
- Voluntary Summer Professional Learning Offered

2027-2028
- Implement Curriculum & Resources
- Job embedded Professional Learning (PL) and Support
- Utilize Common Assessment Data to make shifts in instruction & PL
- Utilize Resource Data to make shifts in instruction & PL
- Voluntary Summer Professional Learning Offered

Professional Learning

The proposed professional learning model is designed to ensure the effective implementation of OpenSciEd by emphasizing key core features that drive instructional excellence.

- Curriculum-focused.
- Active learning to engage educators in hands-on, practical experiences that mirror the nature of the curriculum.
- Ongoing coaching to refine instructional approaches.
- Incorporates structured feedback and reflection, emphasizing long-term engagement rather than one-time training sessions.

Cost

Item	# of Years of Access	Total Cost
ECA Kits for OpenSciEd- Chemistry	1 time purchase	$174,299.64
ECA Kits for OpenSciEd- Physics	1 time purchase	$147,724.56
TOTAL		$322,024.20

Detailed breakdown of the costs included in the Board Proposal.

Cost

Estimated Per-Pupil Cost of Chemistry $174,299.64/estimated 4,356 Chemistry students over 6 years = $40.01

Estimated Per-Pupil Cost of Physics $147,724.56/estimated 3,366 enrolled in Physics the next 6 years = $43.88

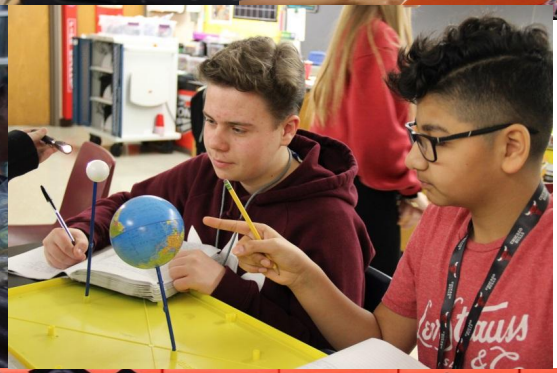
Annual cost of consumable materials is $1,500.00 for each school.

Plans for the Evaluation of Change

The Office of K-12 Science and Planetarium has a very strong process for using common assessment data to make shifts in professional development, resource utilization, and instructional clarity around the U-46 Science Curriculum.

We have developed a system of formative and summative assessments that will be used to collect data on:

- Common Formative
- Common Summative
- Resource Usage



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