U46

ACADEMIC
SUCCESS
FOR ALL

School District U-46

Biology Adoption, Chemistry Pilot, Physics Pilot 2025-2026

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 24, 2025

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Purpose

This proposal seeks funding for the adoption of new resources and professional learning for Biology, and to support pilots of Chemistry and Physics courses across all U46 high schools.

Alignment to Strategic Plan

Rationale

- The current Biology, Chemistry, and Physics resources are nearing contract expiration or are out of print.
- A comprehensive needs assessment for all three 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.

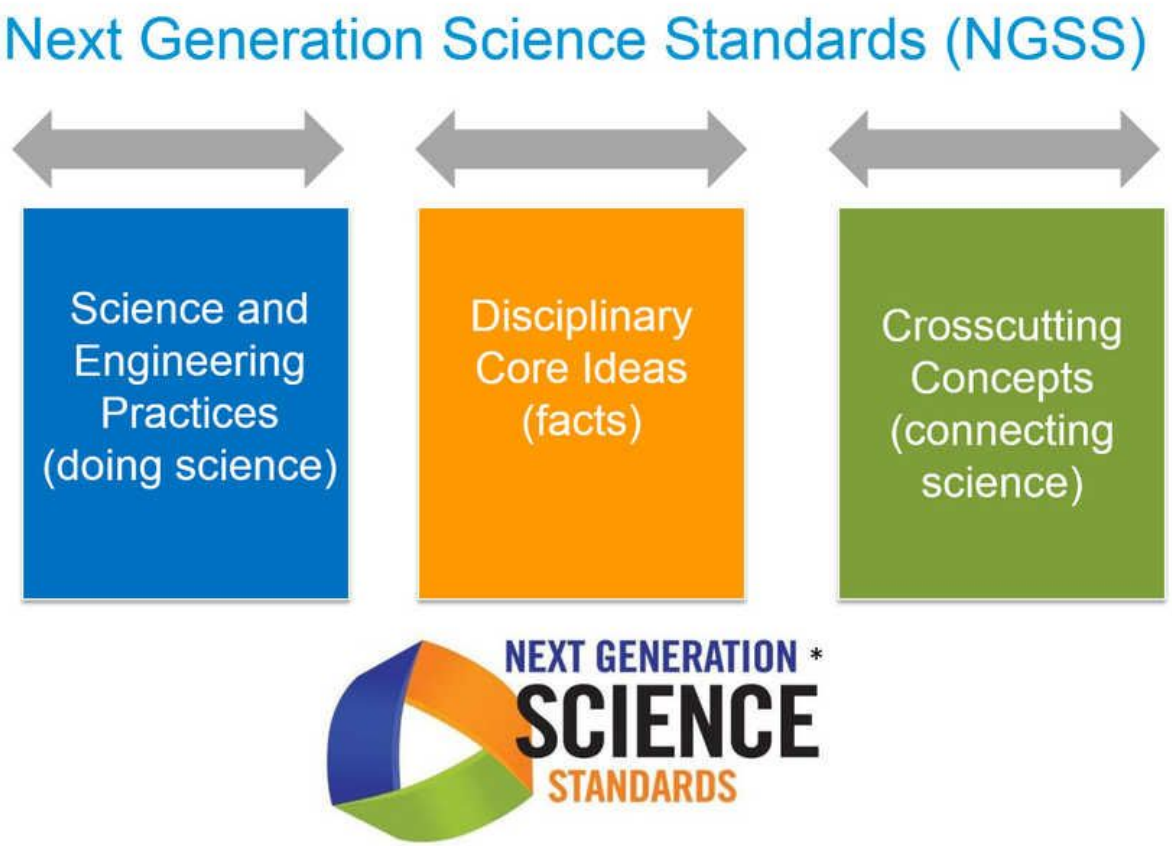
Teacher Feedback

Teacher Name	Teaching Assignment	School
Charlene Brennan	Biology, Chemistry SPED	SHS
Jesse Bossenga	Earth & Space Science, Physics	SEHS
Alicia Choi	Biology, Environmental Science	DREAM Academy
Julia Garcia Trilla	DL Chemistry, DL Physics	EHS
Victoria Griffin	Chemistry, AP Chemistry, IB Chemistry	EHS
Joe Kellenberger	Physics, Earth & Space Science	U46 Planetarium
Katie Larsen	Biology, Chemistry, Physics SPED	BHS
Brittney Mallen	Environmental Science, Ap Environmental Science, IB Environmental Science	EHS
Devangi Sapra	Transition Science, ELL Chemistry, Physics	BHS
Matthew Scotkovsky	Chemistry, IPS	Dream Academy
Joann Sharp	Biology, Chemistry, Environmental Science	SHS

Process Timeline

- April 2021 - Teachers applied to join the District Science Team (representative teachers cross trained for K-12 Science).
- April 2024 - 31 resources were evaluated by the District Science Team, in collaboration with Office of Science and Planetarium. Rubric evaluation determined top three finalists.
- May 2024 - Finalists shared with departments, Assistant Principals of STEM, and all Biology, Chemistry, and Physics teachers to provide feedback.
- May 2024 to December 2024 - Multiple opportunities offered-asynchronous and synchronous, virtual and in-person-to complete feedback surveys.
- December 2024 - Selection of OpenSciEd as the recommended resource for Biology, Chemistry, and Physics.

Standards

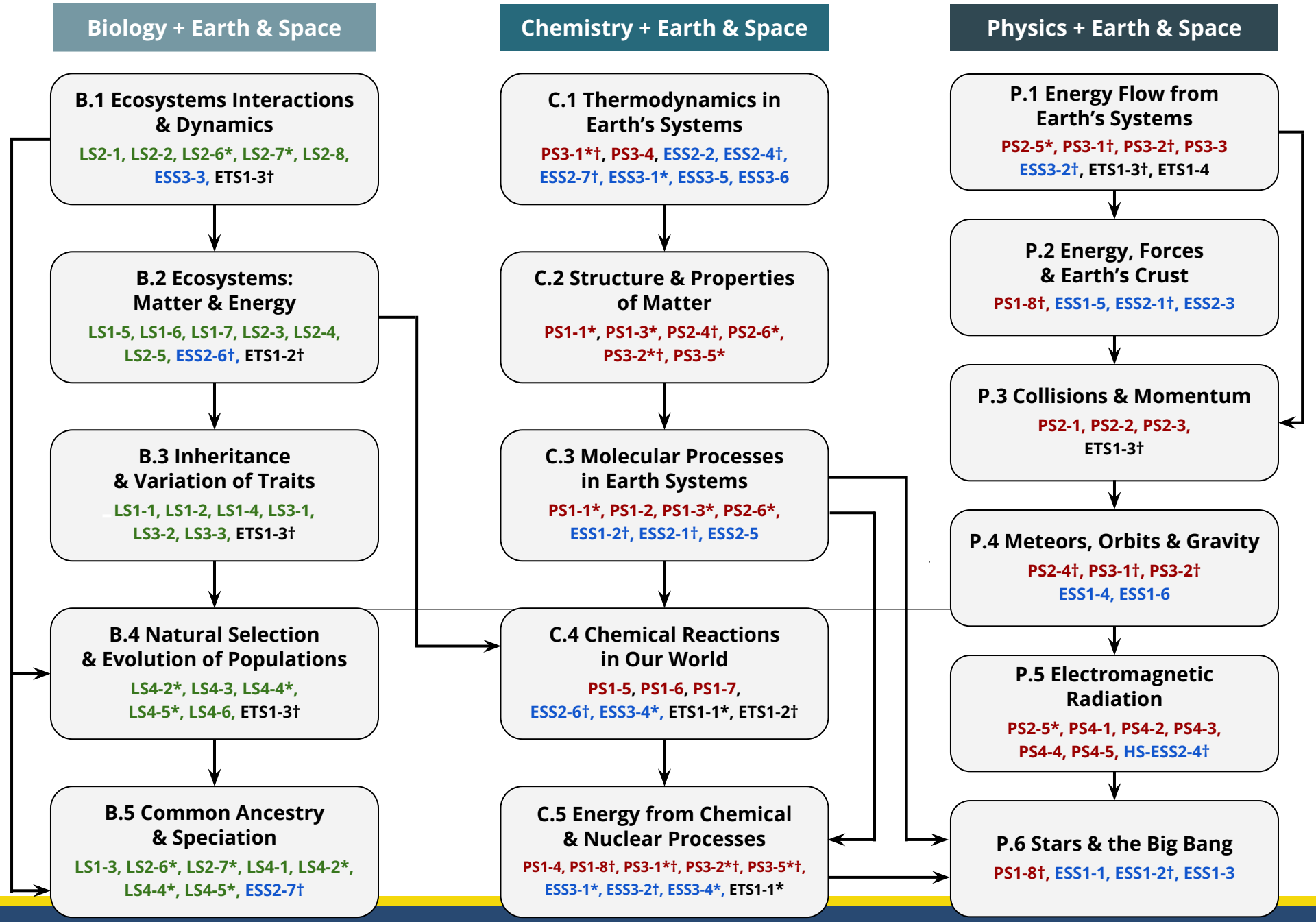

Next Generation Science Standards (NGSS)
Science and Engineering Practices (doing science)
Disciplinary Core Ideas (facts)
Crosscutting Concepts (connecting science)
NEXT GENERATION *
SCIENCE
STANDARDS

Program Overview

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

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

Currently, U-46 requires Biology and a physical science for graduation. To ensure our curriculum remains rigorous and prepares students for post-secondary sucess, we are undertaking a review of these science requirements for alignment with college expectations.



*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 Biology, while piloting 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

2024-2025
- Purchase and distribute materials
- Launch Unit Professional Learning
- Voluntary Summer Professional Learning Offered
- Determine which Chemistry and Physics teachers will participate in the pilot

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
Textbooks and Online Licenses- Teacher guides and student books for Biology, Chemistry and Physics	6 Years	$146,909.36
Supplementary Materials- $1,800 per school	1 time purchase	$12,600.00
ECA Kits for OpenSciEd	1 time purchase	$770,863.52
Professional Learning	3 years	$941,852.96
TOTAL		$1,872,225.84

Detailed breakdown of the costs included in the Board Proposal Document.

Cost

Estimated annual cost for consumable materials $1,500.00 per school (7) = $10,500.00.

Estimated Per-Pupil Cost $930,372.88/6,540 number of students enrolled= $142.25.

Estimated Per-Pupil Cost Per Year= $23.70.

Professional Learning cost includes provider and substitutes.

Plans for the Evaluation of Change

The Office of K-12 Science & Planetarium has a very strong process for using common assessment data to make shifts in professional development, resource utilization, and instructional clarity around the U46 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
- Common Planning time

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