

OFFICE OF PROFESSIONAL LEARNING



— October 2023 Education Bulletin —

Welcome to the October 2023 edition of the **Luzerne Intermediate Unit (LIU) Office of Professional Learning's (OPL)** monthly education bulletin. The intent of this communication is to provide subscribers with:

- Professional learning opportunities offered by our department,
- Provide school leaders with educational policy support, and
- Provide tips for practicing educators.

This edition will focus on our state's transition to updated standards in the area of K-12 Science. Other items included are:

- A description of Project AWARE
- Meet a member of the OPL team

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STEELS STANDARDS

STEELS STANDARDS TIMELINE

In September 2019, the creation/approval process began to replace the 2002 Standards for Science and Technology and Environment and Ecology. In January 2022, a final draft of the proposed standards were developed and approved. These standards were entitled the Science, Technology & Engineering, Environmental Literacy and Sustainability (STEELS) Standards. The standards will take effect on July 1, 2025. This indicates that the 2025 -2026 Science PSSAs and Keystone Biology Exam will be based on these standards and all instruction in K-12 should be shifted to these standards by this school year.

These standards include:

- **Research-based** approaches to teaching science as highlighted in the seminal research publication, "How Students Learn: Science in the Classroom".
- Earth and Space Science, Life Science, and Physical Science standards adopted from the **Next Generation Science Standards (NGSS)**.
- While there is some overlap between the NGSS and STEELS Technology and Engineering (T&E) standards, the STEELS standards does have **T&E standards** exclusive to Pennsylvania. The **Environmental Literacy & Sustainability (ELS)** standards do have less overlap with NGSS and are largely exclusive to Pennsylvania.



- Integration of these standards are meant to follow a **storyline** model that begins with an **anchoring phenomenon** or **anchoring problem to be solved**.
- All areas of STEELS teaching, learning, and assessment will include multiple dimensions of student learning. These include use of the following areas and are color coded as underlined:
 - **Disciplinary Core Ideas (DCIs)** - this dimension includes what students should know about science. These include content from areas such as life science, Earth and space science, physical science, technology and engineering, and topics focused on environmental literacy and sustainability.
 - **Crosscutting Concepts (CCCs)** - this dimension asks students to think like a scientist and engage in exploration of cause and effect, patterns, systems thinking, use of mathematics, etc.
 - **Science and Engineering Practices (SEPs)** - this dimension asks students to behave like a scientist and develop models, conduct investigations and construct explanations, use evidence to communicate information.
 - **Technology and Engineering Practices (TEPs)** - these are only available in the Technology and Engineering standards and include concepts such as communication, attention to ethics, making and doing, critical thinking, etc.

STEELS HUB

STEELS HUB IN PDE'S SAS WEBSITE

All standards that PA educators are required to include in their curriculum and instruction can be found on the PA Department of Education's Standards-Aligned Systems website (<https://pdesas.org>). While the STEELS standards have yet to make to the Standards section of this site, the Department has posted a "STEELS Hub" within the Instruction area of the site. Here you will find:

- A comprehensive document that contains all **STEELS standards** organized by content area, grade, and strand. These also include direct links to each standard's foundation box (see below).
- **Curriculum Frameworks** for Science (Earth/Space, Life, and Physical Sciences) and Technology & Engineering. Environmental Literacy & Sustainability frameworks have yet to be released at this time.
- **Foundation Boxes** for all standards. Foundation boxes are where the standards come alive by indicated how the standards should be represented in teaching and learning through the lens of multi-dimensional learning. You will also find a Performance Expectation (PE) at the top of each box that is the guiding statement of what students can do to have proficiency with the standard (see Graphic 1).



Grade 5

Graphic 1

3.2.5.D Physical Science: Matter and Its Interactions

Students who demonstrate understanding can *measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.*

Clarifying Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances.

Assessment Boundary: Assessment does not include distinguishing mass and weight.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Using Mathematics and Computational Thinking Mathematical and computational thinking in 3–5 builds on K–2 experiences and progresses to extending quantitative measurements to a variety of physical properties and using computation and mathematics to analyze data and compare alternative design solutions. <ul style="list-style-type: none"> • Measure and graph quantities such as weight to address scientific and engineering questions and problems. 	PS1.A: Structure and Properties of Matter <ul style="list-style-type: none"> • The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish. PS1.B: Chemical Reactions <ul style="list-style-type: none"> • No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.) 	Scale, Proportion, and Quantity <ul style="list-style-type: none"> • Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume. Connections to Nature of Science Scientific Knowledge Assumes an Order and Consistency in Natural Systems <ul style="list-style-type: none"> • Science assumes consistent patterns in natural systems.

Foundation boxes are very similar to the display and information provided by the NGSS. PA has also added connections to local context, links to PA Career Ready Skills, and crosswalks to additional standards like Agriculture, Environmental Literacy, PA Core Standards for Math and ELA, PA Social Studies standards, and national technology standards like ISTE and ITEEA.

PROJECT AWARE

ADVANCING WELLNESS AND RESILIENCE IN EDUCATION

Project AWARE is an acronym for a program whose goal is to develop a sustainable infrastructure for school-based mental health programs and services by Advancing Wellness and Resilience in Education. Featured on the [February 20, 2023 PA Homepage report](#) entitled, “More Tools to Combat Child Mental Health”. This news report showcases the efforts the LIU in supporting positive student mental health through a host of services — one of which is Project AWARE. This four-year grant-funded program will help the LIU attain goals related to:



- The expansion of suicide awareness training opportunities for students,
- The implementation of a universal mental health screener for school staff, and
- Create an electronic data system to connect mental health practitioners with community-based mental health providers.

For more general information about Project Aware, visit the Substance Abuse and Mental Health Services Administration (SAMHSA) website at [Project AWARE | SAMHSA](#). For further information about the LIU’s use of this program, reach out to Jessica Zaborny (jzaborny@liu18.org), the LIU Project AWARE Program Manager.

WHO IS WHO?

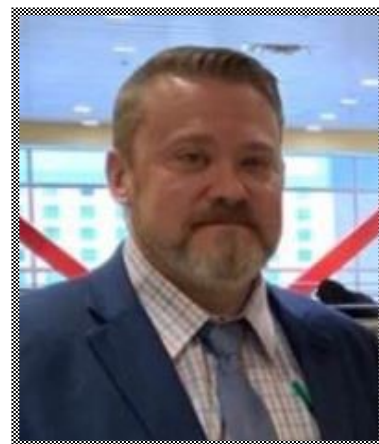
LIU OFFICE OF PROFESSIONAL LEARNING

In each issue of the OPL Education Bulletin, you will get a chance to meet a member of our team. In this issue, we would like to introduce Dr. Rich Mackrell, LIU Asst. Director of STEM and Innovative Practices, and the work he does in the LIU region and beyond.

Credentials: Bachelors of Science in Mathematics, Masters Degrees in Classroom Technology and Principal Leadership, and Doctoral Degree in Educational Leadership.

Years of Service: High School Math Teacher (14 years), LIU Mathematics Specialist (6 years), and LIU Asst. Director of STEM and Innovative Practices (5 years)

Other areas of Interest: Dr. Mackrell’s main focus areas are the development of teacher math and science pedagogy and curriculum expertise, supporting STEM-related programs, and school adoption of state educational requirements such as Student Graduation Requirements, Educator Effectiveness, Ethical Practices, etc.



Additional Project Areas: Remake Learning Days NEPA regional lead, Chief Science Officer Cabinet Coordinator, Member of the Statewide STEM Network, and LIU Regional Curriculum Coordinator Network lead.

LIU OPL NETWORK TRAININGS (OCT-NOV, 2023)

Did you know that the Office of Professional Learning regularly offers workshops at several locations? Areas of educator support include all core content areas, support for students with special needs, and classroom management.

All registrations are through MyLearning Plan. Visit our website at www.liu18.org and head to "Register for IU Events" to find out more about these opportunities and to register.

- ELD Books Study begins on 10/4/23.
- Assistive Technology Meetings, 10/12/2023, 10/19/2023, and 11/30/2023
- Text Dependent Analysis (TDA) Trainings, 10/18/2023
- Youth Mental Health First Aid, 10/24/2023
- Education for Children and Youth Experiencing Homelessness Region 7 Conference, 10/25/2023
- CORE Vocabulary, 10/31/2023
- Using the SETT Framework for AT Tool Selection, 11/7/2023
- Reading Specialists Network, 11/7/2023
- Cultivating Kindness, Compassion, and Joy in Teaching, 11/8/2023
- Behavior Series - Prevention Strategies, 11/9/2023
- Text Dependent Analysis (TDA) Training K-3, 11/15/2023

We also hold monthly network meetings for Curriculum Coordinators and quarterly network meetings for school Principals.



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